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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 1 LEHI AND SALT LAKE CITY, UTAH AUGUST 4, 1917

Raise More Sheep On The Farm

Julis Anderson.

Utah in many cases is so situated that we should materially increase the number of sheep on the farm. There are few farms on which at least some sheep cannot be kept to good advantage.

As destroyers of weeds and brush they have no equal. A limited number can be fed upon the waste that occurs on a great many farms. Even at the high price now prevailing a number of farmers have experienced a profit last summer and winter raising sheep. Most sheep will raise an average of one lamb and feed it for market so that it will bring more than the ewe cost, besides the wool at present extremely high prices will bring a profit for their keeper.

As with other branches of farming, not every one will take kindly to sheep raising, but the farmer whose place will permit and who is interested in sheep can make money from keeping as many as conditions will permit. I know of one or two instances where farmers kept a small flock of sheep and fed them during the winter and have joined with others for summer range feeding.

It doesn't take a large sum to buy a flock of good large ewes. On the farm pure-bred rams should be the only kind used, as his lambs will bring a dollar or more per head more on the market than the lambs of a common ram. The grass and weeds along our roads and streets would feed several good siezd flocks of sheep. A band of sheep on some of the grain fields after harvesting would do the land more good than the average summer fallow, in cleaning out the weeds. The land would be made more fertile because the sheep are good fertilizers. They will thrive on what other farm animals will not relish. The fence corners, the fence rows, and other places where insects breed could all be cleaned if a small flock of sheep were kept on the farm

There is always a ready cash market for wool, lambs and mutton. From my point of view, the farmer can no better afford to be without sheep than he can be without chickens. Some men who have had experience with sheep claim that a pasture which will keep twenty-five cows and horses will, as a rule, be better off for the addition of twenty-five sheep. This is more true where pastures are inclined to grow up to weeds, for the sheep will keep them down, giving the grass a better chance to grow.

The old Spanish proverb, "The Sheep's foot is golden," no doubt comes from the fact of its enriching the soil wherever it feeds more than any other domestic animal in proportion to its size. Six ewes and five lambs will equal two cows in food consumption according to one of our experts. He estimates that they eat more but store up and carry off less than one-third as much potash, phosphates and nitrogen as there is taken in cows' milk. A number of other experiments might be given to show similar reasons for the advantage of sheep on the farm.

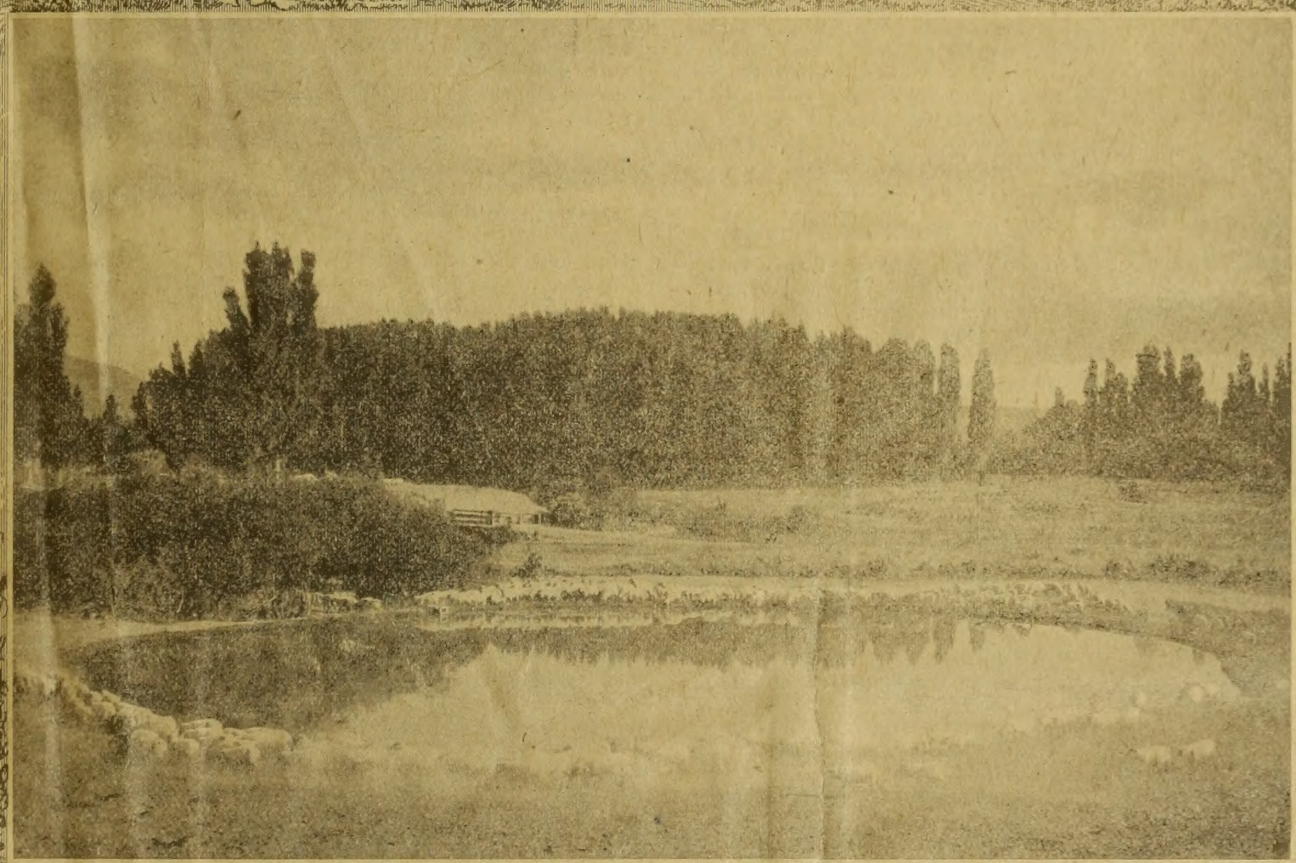
For many years the farmers of Ohio, Michigan, Illinois and Wisconsin have purchased sheep from the commissions and stock yards, paid the freight on them to their farms, commission both for buying and selling and after feeding them their high priced feeds, have returned them to the market with all the cost of selling and transportation and have made money out of the transaction. In many cases these sheep have been shipped from Utah.

If, with all these extra expenses, sheep feeding and raising can be made profitable by the famers of these states mentioned, Utah farmers ought to make good money because many of these expenses can be eliminated.

There is no excuse any more for the man who says he does not have capital, because there are a number of companies who will furnish the capital for buying sheep, if the farmer has the feed and is able to properly care for them.

Equipment for raising sheep on farms need not be expensive, say specialists in the U. S. Department of Agriculture. Elaborate and expensive structures do not insure economy in management and are not essential to the welfare of the flock. In mild latitudes, little housing of any sort is needed, but, where winters are longer and more severe, some protection from storms is required. Under such circumstances, the buildings in which it is proposed to house the sheep should be dry, well ventilated, and free from

(Continued page on 16)



BE SURE TO MAKE A CLEAN HARVEST

Every pound of food for man or beast is needed this year to feed those who are starving in war stricken Europe

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SUGAR BEETS

APPLICATION OF MANURES

By John C. Wheelon, Garland, Utah.

The secret of spreading manure is to get it as fine as possible, spread as thin as possible and apply as little as possible. This latter advice seems strange in view of working for maximum yield of crops, but the man who can spread an acre with three or four tons of manure is an artist. We oftener get from twenty to thirty tons and that in chunks that is not available as plant food for several years.

The reduction of vegetable matter to available plant food is the complicated work of nature's great soil laboratory and is performed by bacteria and soil organizms in the presence of the proper amount of air and moisture. The sections or pieces of matter must be small and covered by the earth; small, because the organizms attack only a very thin surface next to the soil; covered, because the bacteria cannot operate in the light. The soil must be fine and fit closely to the piece as the organizms work neither in a hard lump of soil nor in the open spaces formed by large clods. The first thin rim on the outside of the piece is readily attacked but the further progress is very slow until the piece is moved by cultivation when another thin rim is quickly taken off until the piece or section disappears as such, leaving as the result of its presence a fine humus which imparts to the soil the rich brown color and free texture that is so much desired to render soil productive.

If we could pulverize the manure we would have it right, but a manure spreader that chops the work up fine is the nearest perfect of any process at the present time.

Spread any time of year that the field is available as, when spread thin it will not ferment and lose to the air, and whatever leaching is done carries the plant foods into the ground just where we want it. If spread in the fall to remain all winter, or if spread in the fall and plowed under no losses occur because the operations of the bacteria cease while the temperature of the soil is below 41 degrees F.

Fertility and Crop Rotation.

We have in previous issues devoted our remarks to the plan of growing maximum yields of sugar beets consecutively on the same ground and have shown the two methods, one in building up poor soil and the other in operating ground already rich.

The growing of sugar beets in rotation can be made just as profitable per acre but it does not permit of devoting as much of the farm as the consecutive plan, as much of the land will be in other crops that are preparing the land for beets, however the rotation plan is preferable from many points of view.

Starting with an alfalfa field beets can be grown for three years straight and followed with hay again or put into grain with a nurse crop of alfalfa. Some prefer to plow down the alfalfa stubble and raise one crop of grain before beets to rot down and kill all the alfalfa. This is a good plan but is not necessary as the three plowing method described in the previous article, will kill the alfalfa completely, if properly done, and render the soil in splendid condition for handling the beet crop.

By plowing under the third crop of hay when about half grown the green mould helps to hasten the rotting of the heavy, tough roots and crowns and should supply to the soil about 120 to 160 pounds of available nitrogen. This with the beet tops will give a splendid yield of beets for three or four years, giving plenty of time to get another field ready.

—o—

NAVY BEAN HAS RIVAL

Soybean Has Higher Food Value—Easier to Produce and Harvest

Soybeans are rapidly finding a place as human food, used as common white beans and in new preparations, but more nutritious and economical. Less risk and labor are involved in growing and harvesting soybeans as compared with navy beans.

Boiled or baked alone, or in combination with pork, potatoes or rice, soybeans take the place of navy beans. Soaking over night is considerable. water is necessary to remove the strong flavor of the beans. A little soda in the water during cooking makes them softer.

Green soybeans cooked in the pod shell easily, and make a palatable dish when served with butter or milk. The pods are tough and seldom eaten.

A little soybean flour added to cornmeal makes mush made from the mixture brown quicker and increases its food value.

The soybean contains about 62 percent more protein than the navy bean, according to Bulletin 312 of the Ohio Experiment Station at Wooster. A dollar will buy 2.7 times as much protein and 1.5 times as much digestible carbohydrate in soybeans as in navy beans.

Recent experiments in the use of soybeans for making milk are reported in the bulletin. The finely ground beans mixed in 10 parts of water and heated near the boiling point for 15 to 30 minutes makes an emulsion like cow's milk. In white sauce, custard and corn starch pudding this vegetable milk has proved fairly satisfactory. Soy sauce, bean milk, bean curd and a ripened vegetable cheese called "miso" are common foods made of soybeans in Japan and China.

Soybeans and navy beans yield about the same. Insects and diseases are less common on soybeans. In wet seasons the crop is harvested with less difficulty and less risk of spoiling than in case of navy beans. An ordinary threshing machine can be used for soybeans, while navy beans require a special machine or flailing.

CABBAGE PLANTS

Wanship, Utah.

Utah Farmer:

I have a patch of cabbage that are growing too high, some of them are about two feet now, and apparently are not going to head. Is there any thing I can do while the plants are yet young to make them head out? Please answer in your issue of this week.

Recpectfully yours,

A Subscriber.

Answered by Dr. M. C. Merrill, Horticulturist, Utah Agricultural College.

Your cabbage are growing in such a manner as to raise the question whether seeds of kale of collard, closely related plants, might not have been sown by mistake instead of cabbage. It is very unusual for an entire patch of cabbage to grow in the manner described without heading. Where cabbage plants do not head but grow up and go to seed without doing so it is frequently due to poor seed or to a poor strain of the variety planted. Of all the garden vegetables cabbage reacts more untavorably to poor seed than almost any others.

In the South the same condition is often met where the cabbage plants are started in the fall and left growing in the field over winter. If the time between seeding in the fall and the maturing of the plant the next spring is to prolonged the plants will often produce seeds without headings.

There would seem to be nothing you can now do to promote heading of the plants. As cattle relish the leaves you could make good use of them by feeding them to the cattle and also other farm animals. If the patch proves to be kale or collards the tender leaves could be used for greens.

—o—

TAKE CARE OF THE ASPARAGUS BED

Don't ignore the asparagus bed, now that the cutting season is over. It has given you its food contribution; now see that it has plant food to make a good growth of foilage. Fertilize and cultivate well now to insure that strong, healthy growth which is essential to a good yield of shoots next spring.

After the cutting season the ridges should be leveled and the asparagus bed thoroughly cultivated, says the writer of the bulletin. A good high-grade fertilizer then should be applied at the rate of 1,000 to 1,500 pounds to the acre. A fertilizer containing 2 to 4 per cent of nitrogen, 6 to8 per cent of phosphoric acid and 6 to 8 per cent of potash will give good results. Muriate of potash and kainit are preferable to sulphate of potash. Where the land is already heavily manured, the nitrogen may be left out of the fertilizer mixture. The fertilizer to be applied should be distributed broadcast over the bed or in a strip on either side of the row and thoroughly mixed with the surface soil by harrowing or cultivation. Flat cultivation should be practiced after the cutting season.

In many sections the asparagus plants are cut down as soon as the berries turn red, and after drying sufficiently they are burned to destroy any disease germs or insects that may be present. In regions where severe freezes occur it is doubtful whether the cutting and burning of asparagus tops is advisable. The old tops hold the snow and prevent deep freezing and the blowing of soil. Some growers thoroughly harrow the bed after the tops are removed, others throw a slight ridge over the row, but ridging is not necessary unless there is danger of injury by severe freezing during the winter. Where land is inclined to wash, cultivating and ridging in the fall are objectionable.

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NAME OF FARMS

Some interest is being shown by the farmers of the State by having their farms named and registered with the State Auditor. There is a protection to every farmer once the name is recorded that no one else can use the same name.

Any farmer can select a name not already recorded and can advertise this name and establish his brand of any product or livestock. It is a modern way of doing things by having the products named before you advertise it. It takes the place of a trade mark that is used by manufacturers of food products.

Every name should carry a definite message, and it should appear on your stationery, your shipping tags, or any literature you may send out about your farm. With the farmer it should be as with the manufacturer that the name or trade mark stands for something in quality.

It is away for your consumer to identify your products, and if your product is a superior article, the demand for it will grow, and in this way you will establish a business that will be permanent.

Here are some of the names that are recorded with the State Auditor:

Ash Lane Dairy Farm.
Acme Stock Farm.
Abbotsford.
Briar Stock Farm.
Blue Bell Farm.
Edgewood Farm.
Echo Farm.
Fairfield Fruit Farm.
Fairview Ranch.
Golden Sheaf Ranch.
Hillside Jersey Farm.
Hillcrest.
Homefield Farm.
Kesko Farm.
Lawndale Farm.
Lakewood Farm.
Low Moore.
Maplewood Cherry Farm.
Meadowbrook Farm.
Meadow Farm.
Mount Olympus Farm.
Riverside Farm.
Rearden Fruit Farm.
Shadybrook.
Rosedale Orchard.
Swastika Farm.
Sunset Farm.
Wildwater.
Woodstock.

—o—

SAVE STAPLES BY EATING AND CANNING PERISHABLES

Make fresh vegetables and fruits save staple foods. Eat the perishable fresh fruits and vegetables now, while they are most delicious, and can and preserve them for future use.

The following available fresh fruits and vegetables may be classified for this war emergency diet:

Apples, peaches, pears, plums, blackberries, raspberries, beets, carrots, potatoes, onions, beans, peas, sugar corn, tomatoes, cabbage, lettuce, etc.

Right now there is an abundance of these fresh foods ripening in the "war gardens" of many cities and rural districts as well as on the farms of Utah. Housewives are urged to use those from their own gardens first. If they have no garden, they should purchase from local markets or farmers or neighbors while prices are low and not only serve daily, but can, preserve, pickle and dry for winter use.

Wherever the vegetables named are available abundantly from home gardens or can be purchased cheaply in the markets, or from neighbors, their use in the diet to a greater extent than usual will help food conditions. In general, the more simply vegetables and fruits are prepared for the table the better, but when they are being consumed in especially large quantities it often will be desirable to vary the dishes.

Although fresh vegetables ordinarily are eaten by most persons in relatively small amount with more concentrated foods such as meats, eggs, cheese, etc. They may, when eaten in large quantities, take the place of the more concentrated foods to a certain extent. Because of the present large production of perishable fruits and vegetables, this partial substitution is especially desirable during the next six weeks or two months.

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THE UTAH FARMER

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COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

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VOLUME XIV. LEHI, UTAH, SATURDAY, AUGUST 4, 1917 No. 1

The Beet Tops As a Fertilizer

By John C. Wheelon, Garland, Utah.

We plow under in the beet tops 118 pounds of nitrogen worth $23.60 and a complete balance of humus, phosporic acid and potash, worth at least half as much more.

Did you ever walk through a twenty-ton crop of beets before harvest and note the enormous amount of green manure available? Some twelve to sitxeen tons of it, and if plowed in green, (at once after topping,) decomposition proceeds without delay, rendering the plant foods available for the next season's crop.

We no longer wonder that beets can be raised consecutively on the same ground for twelve to twenty years, because we know now just how it is done.

We no longer wonder why such enormous crops of grain, hay and potatoes can be grown after sugar beets, because we know the reason.

We can afford to smile at the man who tells us that the growing of sugar beets will impoverish the land, because we know better.

It is plain to us now that our first neighbor built up his soil by the use of manure and beet tops, and it is equally plain to us that our second neighbor gradually fell down in his yield of sugar beets by pasturing off his best tops.

Remember,. that.. our ..profits. are made upon the work we put on the soil and the fertility we put into it, and on that only.

Is there any other crop known in our inter-mountain agriculture that will give us such handsome returns, and, at the same time make us a present of such an enormous amount of perfectly balanced fertilizer?

We have thus seen that six tons of manure per acre per year plus the beet tops will maintain indefinitely the ferility of a soil to a capacity fully able to produce a twenty ton beet crop, and if at any time it is desired to rotate to grain, hay or potatoes there is available for these crops an enormous amount of fertility.

Again, at thinning time about one-half the plants are cut out, the tops go under with the first cultivation and the young roots proceed to decay; all young weeds that are turned under by the cultivator return to the soil many pounds of nitrogen in compound with with the other elements. Dig a pit in a field of beets growing twenty tons per acre, wash down carefully the side walls of the pit and note the system of roots in the ground, many roots and long ones often extending out to and beyond the next row both ways and in every direction. These are not harvested, neither are they counted in the return of the tops to the ground. These decay and furnish much nitrogen in compound, then every rain and snow storm carries to the ground some nitrogen: every acre inch of water applied to the land by irrigation carries to the soil nitrogen and the other compound (mentioned above) in solution, and the ground itself can be depended upon for twenty or thirty pounds of nitrogen per acre per year. So that, if our program is carried out one of two things is apparent; the beet crop will gradually increase above the yield at which we started or we have wasted about two tons of manure, as forty pounds of nitrogen is a very small estimate of the gain by the natural processes alluded to above.

SUGGESTIONS BY MARK AUSTIN

The SUGAR COMPANY urges the farmers to plow under at least one half of their beet tops while green as above outlined in John C. Wheelon's article. It will no doubt increase the tonnage of beets from one to two tons per acre. This will accomplish two very important things,—furnish green fertilizer and humus to the soil and also get the land plowed in the fall, which will add another one or two tons of beets per acre as against spring plowing, especially on heavy lands. All heavy lands should be plowed in the fall.

The other half of the beet tops, the farmers can silo or feed to his own stock, if he has any; if not, and he desires to dispose of them, he should see to it that he has plenty of manure to take their place, or have the stock fed upon the soil, feeding at least two tons of hay per acre. This is a very, very imporant matter and should have the attention of every farmer.

Use of Potatoes In Bread Making

The prospects for a big potato crop in Utah and Southern Idaho are very good this year. How to use these potatoes to the very best advantage and save the wheat for shipment abroad should be the aim of every home.

The pressure of war conditions has brought to light the value of potatoes in bread making, both in England and America. As an economy in England potato flour was mixed with wheat and a peculiarly delicious bread resulted. In this country potato flour is not available to the average housewife, and the U. S. Department of Agriculture has therefore devised recipes for the making of bread with simple, plain boiled potatoes mixed with the wheat flour.

This bread is said to be not only a complete success from the economy standpoint, where potatoes are cheap and plentiful, but to supply an attractive novelty in the household menu, and a welcome variation from the usual bread monotony. It has a rich brown crust, is tender and elastic, and the flavor is preferred by many to the bread made wholly of wheat. It contains more moisture than ordinary bread, and therefore has longer keeping qualities.

For the making of potato bread, at the present time, it is advisable to use the early perishable potatoes, since the later varieties are capable of storage until spring. "Culls" also may be so used.

Potato Bread Rolls.
To Make 1 Dozen Small Rolls.

8 ounces of boiled and peeled potatoes.
6 ounces of sifted flour.*
1-3 cake of compressed yeast.
¾ level teaspoonful of salt.
2 tablespoonfuls of lukewarm water.
2 tablespoonfuls of sugar.
2 tablespoonfuls of butter.

*Two tablespoonfuls of powdered milk, added to the dough, will greatly improve the quality of the rolls. Although milk itself or cream may be used, it must be borne in mind that they will increase the liquid content.

Boil, peel and mash the potatoes as directed for bread making. Add, in order, to this the salt, the powdered milk (if used), the yeast rubbed smooth and mixed with the water, and lastly two tablespoonfuls of flour. Let this mixture stand at a temperature of about 86 degrees F. until the dough begins to collapse. Add to this sponge the butter, the sugar, and the remainder of the flour and, if necessary, enough more flour to make a very stiff dough. Knead thoroughly until a smooth dough which is no longer sticky has been formed. Set back to rise again, and when the dough has trebled in volume, knead lightly, form into small balls and place, not too close together, in greased pans. Allow to rise until double in volume, as shown by the "indicator," and bake 20 minutes in a moderately hot oven, at about 400 degrees F.

DON'T MISS ANY STEP

Potato Bread—Sponge Method.
To Make 4 One-Pound Loaves.

3 pounds of boiled and peeled potatoes.
2¼ pounds of good bread flour.
3 level tablespoonfuls of sugar.
1½ level tablespoonfuls of salt.
1 cake of compressed yeast.
4 tablespoonfuls of water.

Boil, peel, and mash the potatoes as directed in the straight dough method. In the evening take 1½ pounds, or 2½ solidly packed half-pint cupfuls, of the cool mashed potato, add to it the salt, 4 ounces of flour (1 scant half-pint cupful) and the yeast rubbed smooth with the water, reserving one spoonful to rise the cup.

In the morning add the remainder of the potato, the sugar, and the rest of the flour. Knead thoroughly until a smooth and very stiff dough is formed. After working the dough, set it to rise according to the directions given for the second rising under the straight dough method. Thereafter handle the dough exactly in the same way as is given under the straight dough method.

DON'T MISS ANY STEP.

Potato Bread—Straight Dough Method
To Make Four One-Pound Loaves.

3 pounds boiled and peel potatoes.
2¼ pounds bread flour,
1½ level tablespoons salt.
3 level tablespoons sugar.
2 cakes compressed yeast.
4 tablespoons water.

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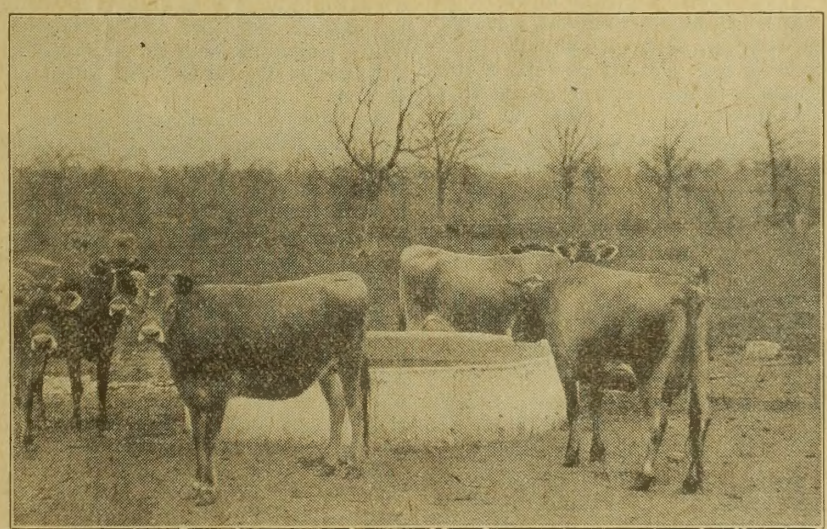

A convenient and sanitary way to provide plenty of water for the livestock.

Provide Plenty of Good Water For Livestock

Peter Sunderson.

This is the time of the year when you want a good cool drink of fresh water, why not think of your livestock in the same way. Men who have made a very careful study of this matter tell us how important it is to have plenty of pure water for the animals growth and health.

Good sanitary conditions are necessary at all times and especially true with our livestock. Dirty troughs, mud holes and stagnant streams tend to disorganize the digestive system and encourage disease. Hog cholera is often transmitted to healthy hogs by drinking water from a contammated stream.

To emphasize the importance of good pure water I want to quote from men who have made a study of this question. Henry says:

"Animals can live much longer without solid food than without water and an insufficiency of water in the body causes serious disturbances. The processes of mastication, digestion, absorption and assimilation are hindered, the intestines are not properly flushed, waste matter remains too long therein, the blood thickens and the body temperature is increased. Through these complications death may result. Animals partially de-

(Continued on page 15)

DAIRYING

MILK CHEAPER THAN BEEF, EGGS, OR CHICKEN

P. Werner, Jr.

The housewife who is endeavoring to reduce family living expenses should consider milk and milk products as possible substitutes for higher priced foods. It has long been known that milk and cheese are exceptionally good and very cheap foods. Numerous nutrition experiments have been conducted in which milk and cheese have been used in comparison with other foods such as beef, chicken, eggs and bread. These experiments have demonstrated the real value of milk, cheese and butter in relation to the other foods. One quart of milk is equivalent to ¾ of a pound of lean beef, 8 hen eggs, 2 pounds of chicken (including bones as bought) or ½ pound of white bread. In other words, a glass of milk will furnish as much food as two whole eggs; or a meal containing 2 pounds of chicken would have been fully as nutritious if a quart of milk had been substituted for the chicken. When milk is 10 cents a quart, chicken 25 cents a pound, and eggs are 40 cents a dozen, 10 cents worth of milk equals in food value, 50 cents worth of chicken or 26 cents worth of eggs.

A still more striking way of expressing the value of milk is to state what one could afford to pay for milk in order to get the same quantity of food which is now received from beef at 20 cents and chicken at 25 cents a pound. If beef is worth 20 cents per pound milk is worth 15 cents per quart. If chicken sells for 25 cents per pound milk is worth 50 cents per quart. If one can afford eggs at 40 cents a dozen he can afford to pay 26 cents a quart for whole milk.

Cream cheese is just about six times as concentrated as milk which means that one pound of cheese is equivalent to 2 dozen eggs or about 2 pounds of beef, good cheese at 40 cents a pound is about 5 cents cheaper than beef at 20 cents and 80 cents cheaper than eggs at 40 cents a dozen.

This analysis is sufficient to show that milk at ordinary prices of 8 and 10 cents a quart is one of the cheapest foods available. Bread is cheaper and makes a very good meal with milk. Milk is not only cheap but it contains some substance, present in butter but lacking in lard and oleomargarine, which stimulates growth of children. Every growing child should receive at least 1 quart of milk a day.

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SILO BUILDING IN EASTERN UTAH

To Samuel Singleton of Ferron, goes the honor of building the first concrete silo in either Carbon or Emery county. It is 18 feet in diameter and will be 40 feet in height when completed. It will hold 229 tons of silage which will feed 62 head of cows for a period of six months, feeding each cow 40 pounds each day. It will take 15.3 acres of corn yielding 15 tons per acre, which is an average yield, to fill it.

The walls are of solid concrete, six inches thick and reinforced with heavy woven wire. The silo is seven feet in the ground which puts the foundation below frost line and also saves considerable power in filling. The doors are of the intermittent type. Besides the concrete silo stands the old silo which was built of wood. It has the distinction of being the oldest silo in the county. It is square and did not prove entirely satisfactory as a food saver, although it firmly fixed in the mind of Mr. Singleton the principle that silage was absolutely the cheapest and best feed he could raise for his stock. There have been three other silos like this one built but every one of the owners say they want the round concrete.

Mr. Singleton says that he could not get along without silage as long as he has stock.

Oscar Nelson has just begun to build a concrete silo, and several others are beginning to get ready to build. This is the beginning of a silo building campaign which will only end when every man in the two counties who has ten or more head of cows or their equivalent in livestock, will have a silo.

A silo is absolutely the best paying improvement on the farm. — Farm Bureau News.

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Some of the inmates of an asylum were engaged in sawing wood, and an attendant thought that one old man who appeared to be working as hard as any of them, had not much to show for his labor.

Approaching him the attendant soon discovered the cause. The old man had turned the saw upside down, with the teeth in the air, and was working away with the back of the tool.

"Here, I say, Jones," remarked the attendant, "what are you doing? You'll never cut the wood in that fashion. Turn the saw over."

The old man paused and started at the intruder.

"Did you ever try to saw this way?" he asked.

"Well, no," replied the attendant, "of course I haven't."

"Then hold your noise, man," was the instant reply. 'I've tried both ways, and"—impressively—"this is easier."

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IN TABLOID DOSES

"Nurse," moaned the convalescent patient, "can't I have something to eat? I'm starving."

"Yes, the doctor said you could start taking solids today, but you must begin slowly," she said. Then she held out a teaspoonful of tapioca. "We must only advance by degrees," she added.

He sucked the spoon dry and felt more tantalizingly hungry than ever. He begged for a second spoonful, but she shook her head, saying that everything at the start must be done in similarly small proportions. Presently he summoned her again to his bedside.

"Nurse," he gasped, "bring me a postage stamp. I want to read."—New York Times.

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A SHORTAGE SOMEWHERE

An advertisement of a popular spectacular play has this to say of two of its attractions:

5,000 People
4,000 Costumes
—Ladies' Home Journal.

SUMMARY OF INTERSTATE CEREAL CONFERENCE

In vew of a world shortage of cereal food crops, which is likely to continue for an indefinite period, the Third Interstate Cereal Conference urges the greatest practicable enlargement of wheat acreage and would further make the following recommendations:

1. To encourage a larger wheat production, the producer should be guaranteed a minimum price, such price to continue at least one year after war is ended.

2. Early preparation of the land for small grains, where these do not follow cultivated crops, should always be practiced. In the winter wheat area it is very important that this be done immedately after harvest.

3. Immediate action is required in providing seed for the next crop. At harvest time it is cheapest, and just before harvest seed in large bulk can best be selected. State and federal aid will be given in locating seed in localities of comparative abundance for use in localties where it is sorely needed. Clean seed, as free as possible from diseases, should be selected and arrangements be made for seed treatment.

4. Varieties of grain best adapted for the locality should always be used. The agricultural colleges and other state agricultural agencies will inform the farmers of the existence of these varieties and how and where to obtain the seed.

5. Every means should be employed to eliminate weeds, by use of clean seed, crop rotations, early cultivation above mentioned, and any special methods reliably recommended for particular weeds in different localities.

6. Seed testing for germination can well be further emphasized at this emergency period. The extension service, through county agents, should bring this matter home to every farm.

7. Seed treatment will largely prevent certain smuts and other diseases of cereals, and, as a real war measure, we are bound to see that it is applied as nearly as possible on every farm. thus increasing our cereal production a hundred million bushels or more, in one season. By field demonstrations the methods can and should be made plain to all concerned.

8. The possible ravages of Hessian fly, chinch bug, green bug, stored grain and mill products insects, etc., must be kept also in mind and the progress of an means of checking these insects be communicated, so far as possible, in advance of their local occurrence.

9. As a means of reducing the great loss from rust, it is urged that all common barberry bushes (not the Japanese) and grass weeds, harboring cereal rusts, be eradicated, and that rust-resistant cereal varieties be grown, if otherwise of good quality.

10. It is a conservative estimate that 20 million bushels of wheat and proportional quantities of other cereals are annually lost by waste in harvesting and threshing. This waste can and should be, in large measure, easily avoided. A man and team are known to have cleared $27 to $62 a day from cleaning up after threshers, and, in another instance, last year in Kansas, $500 was gained by a man, with a team and fanning mill, cleaning up after threshing machine settings. in three weeks' time.

11. In the western and southwestern plains, grain sorghums should be widely planted. In the northern plains, in the drier districts, flax and, under certain conditons, proso or Russan millet may be used to a similar advantage.

12. Suitable catch crops (such as cowpeas, soy beans, sorghums, millet, flax, and buckwheat) should be grown on all lands on which staple crops can not be seeded at the proper time or on which they have been destroyed.

13. The increased use of corn, rice, grain sorghums, proso, barley, rye, beans, cottonseed meal and peanut meal as substitutes for, or in conjunction with wheat for human food is strongly recommended. In formation on this matter can be obtained through the state agricultural colleges and the United States Department of Agriculture.

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"It did Jack no good to marry his stenographer, for she continued the habit of the office in the home."

"How so?"

"When he starts to dictate she takes him down."—Tit-Bits.

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Cohen—So Sadie has broken der engagement. Did she gif you back der ring?

Cohenstein—No; she said diamonds hat gone up, but she would gif me vat I paid for it.—Boston Transcript.

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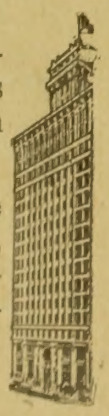


Walker Brothers Bankers

SALT LAKE CITY

Contents of Fruit and Vegetable Containers

U. S. Department of Agriculture Tells How to Mark Quantity of Contents.

The officials in charge of the enforcement of the Food and Drugs Act have prepared a Service and Regulatory Announcement giving suggestions regarding the best way to label packages of fresh fruit and vegetables with the quantity of the contents in order that the labeling may comply with the provisions of the Net Weight Amendment to the Federal Food and Drugs Act. The Net Weight Amendment provides that all packages of food entering interstate or foreign commerce must be plainly and conspicuously marked with the quantity of the contents in terms of weight, measure, or numerical count.

The Service and Regulatory Announcement follows:

The following suggestions are made in response to numerous inquiries for information as to the proper methods of marking the quantity of the contents on packages of various fresh fruits and vegetables under the net weight amendment of the Food and Drugs Act.

The articles listed below may be marked by either weight or dry measure, or, when packed in barrels, in terms of the United States standard barrel and its lawful subdivisions, i. e. third, half or three quarters:

Apples in barrels, boxes, cartons and hampers. Cases or cartons containing graded apples may, if desired, be marked in addition with the number of apples per package.

Apricots, prunes and plums in baskets, boxes and cases. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Beans (in pod) in baskets, boxes and hampers.

Berries and currants in baskets. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Cherries in boxes and baskets. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Cucumbers in barrels, baskets, hampers, boxes and crates. Containers of graded cucumbers may, if desired, be marked in lieu of weight or dry measure, with the number and length of the cucumbers.

Grape fruit in sectional cases. If desired, cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure.

Grapes in baskets. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Lemons in sectional cases. If desired cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure.

Okra in baskets, boxes and hampers.

Onions in crates, baskets and hampers and in sacks of uniform quantity of contents. Cases containing graded onions may, if desired, be marked in addition with the number of onions per case.

Oranges in sectional cases. If desired, cases may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure.

Oranges, satsumas and tangerines, in half boxes. If desired, causes may be marked by dry measure and count; or by count and average diameter in lieu of weight or dry measure.

Peaches in boxes, cases, baskets and hampers. Boxes and cases of graded peaches may, if desired, be marked in addition with the number of peaches per package. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Pears in barrels, boxes, baskets and hampers.

Peas (in pod) in baskets, boxes and hampers.

Peppers in barrels, baskets, boxes and hampers. (When packed in small open containers inclosed in crates, see paragraph relating to small open containers).

Potatoes in barrels, crates and hampers, and in sacks of uniform quantity of contents.

Quinces in barrels, boxes, baskets and hampers.

Squash, (Southern) in crates, boxes, baskets and hampers.

Tomatoes in boxes, "lugs" and baskets. (When packed in small open containers inclosed in crates or "flats," see next paragraph).

Small Open Containers.

Pending a determination of the question as to whether the quantity of the contents must be marked on small open containers, inclosed within crates or "flats," in which small open containers are packed apricots, berries, currants, cherries, grapes, peaches, plums, prunes, peppers and tomatoes, and unless public notice of not less than two months be given, the Department will not recommend proceedings under the Food and Drugs Act solely upon the ground that such fruits and vegetables in such small containers bear no statement of the quantity of contents. The crates inclosing such containers should, however, be marked with the number of small containers and the quantity of the contents of each.

Also for the present, and until further public notice to the contrary of not less than two months, the Department will not recommend proceedings under the Food and Drugs Act solely upon the ground that the quantity of the contents is not marked upon the containers of the following articles, packed as described below. No objection will be interposed by the Department to any trade marking which is not false or misleading.

Asparagus in boxes and cases.

Beets with tops, bunched, in drums and hampers.

Cabbages in crates.

Cantaloupes and casabas in crates and baskets.

Carrots with tops, bunched, in drums and hampers.

Cauliflower in crates and hampers.

Celery in boxes and crates.

Egg plant commonly wrapped in paper and packed in crates.

Kale in barrels, baskets and hampers.

Lettuce in barrels, drums, baskets and hampers.

Onions with tops, bunched, in drums and hampers.

Pineapples in crates.

Radishes, bunched, in drums and hampers.

Romaine in hampers.

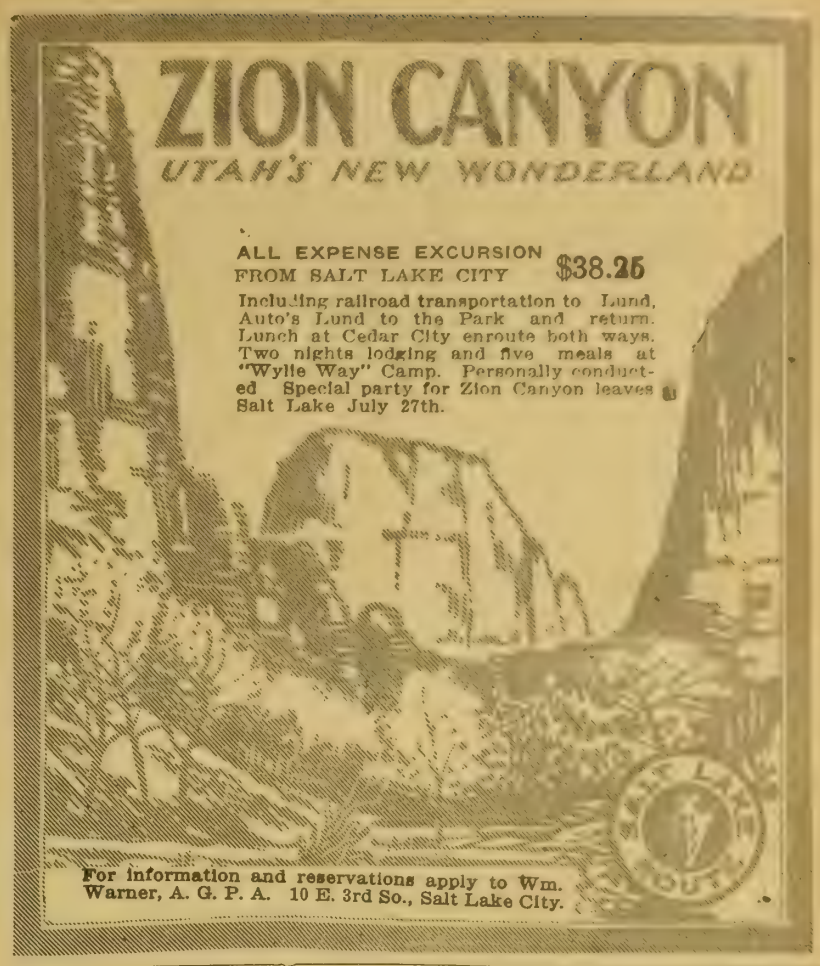
Spinach in barrels, baskets and hampers.

Turnips with tops in drum and hampers.

Regulation No. 29 relatng to marking the quantity of food in package from should be consulted. Special attention is directed to paragraphs (d) and (e) of that circular which are as follows:

(d) If the quantity of the contents be stated by weight or measure, it shall be marked in terms of the largest unit contained in the package, except that, in the case of an article with respect to which there exists a definite trade custom for marking the quantity of the article in terms of fractional parts of larger units, it may be so marked in accordance with the custom. Common fractions shall be reduced to their lowest terms; decimal fractions shall be preceded by zero and shall be carried out to not more than two places.

(e) Statements of weight shall be in terms of avoirdupois pounds and ounces; statements of liquid measure shall be in terms of the United States gallon of 231 cubic inches and its customary subdivisions, i. e., in gallons, quarts, pints, or fluid ounces, and shall express the volume of the liquid at 68 degrees F. (20 degrees C.); and statements of dry measure shall be in terms of the United States standard bushel of 2,150.42 cubic inches and its customary subdivisions, i. e., in bushels, pecks, quarts, or pints, or in the case of articles in barrels, in terms of the United States standard barrel and its lawful subdivisions, i. e., third half or three-quarters barrel, as fixed by the act of March 4, 1915 (38 United States Statutes at Large, page 1186): Provided, that statements of quantity may be in terms of metric weight or measure. Statements of metric weight should be in terms of kilograms or grams. Statements of metric measure should be in terms of liters or centiliters. Other terms of metric weight or measure may be used if it appears that a definite trade custom exists for marking articles with such other terms and the articles are marked in accordance with the custom.



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TAKE CARE OF INSECT POISONS.

Proper Precautions May Prevent Serious Loss of Stock.

The majority of the substances used to kill insects are poisonous to man and domestic animals. Some care is usually necessary to protect men and animals from the poisons so valuable in protecting crops.

The first rule in handling any poison is that it be in an substantial a container as possible, and that the container be suitably and permanently labeled. Don't trust to paper labels pasted on a keg of lead arsenate to warn every one against using the keg for anything else. The label may easily be washed off, and the hired man may pick up the container and use it in feeding or watering some animal. Allow only responsible persons, who know what they are about, to handle the poisons.

See to it that food of any kind, if accidentally spoiled by poison, is placed beyond the possibility of its being eaten by poultry, livestock, or children. One cannot be too sure or too careful in disposing of poisons. If poisoned grain, for example, is used for killing prairie dogs, take care that it is kept separate from grain fed to poultry or animals. It may be mixed with seed grain, since the poison on such grain is usually strychnine which does not affect plants, but the whole of the seed should, be considered to be poisoned, and labeled and stored accordingly.

Insecticides are extremely useful, but one careless act in their handling or use may cost the user much more in livestock than is saved in crops, and may possibly cause the loss of a human life. This warning may seem to be needless to many, yet any one, if care and vigilance are once relaxed, may easily commit the one error needful to cause loss and possibly sorrow.— C. E. Vail, Colorado A. C.

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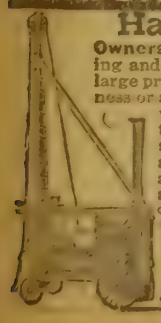

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Select your seed now from the strong plants.

California seems to be having some trouble in marketing her early potatoes and onion crop. Some farmers claim they can not get enough out of them to pay the costs of the crop.

The prices for butter fat at one of the Logan condenseries for the month of August is 56 cents per pound. It will pay to feed a good cow and feed her well at that price.

If we can continue the shipment of 24 million pounds of condensed milk each month, as we are now doing, to feed the allied armies, it will help the milk market. Previous to the war we were only shipping 2 million pounds each month.

The term "thoroughbred" is very often missused. The thoroughbred is a breed of English horses, known for many hundred years, they were of excellent quality and a fixed type. This name has been incorrectly associated with pure bred animals of other kinds and breeds.

Select your seeds now for next year's crops. Many farmers were compelled to use poor seed this spring because they could not purchase the best. See to it that you select good seed now and store it away for next year's planting. The best time to secure your seed is at harvest time.

Keep up the fight on weeds. Do not let them go to waste. In a number of places the city and county officials are having the weeds mowed off the streets, roads and sidewalks. One weed will produce thousands of seeds. Help keep your farm clean by killing all the weeds before they go to seed.

Unusual conditions exists today, labor is scarce, railroads can not deliver promptly, some materials are extremely hard to get and so we might go on. The thing to do is look carefully over all machinery, and plan a little ahead and do not wait until the last moment. Tell what you want and do not think the other fellow can guess what you want—be very definite.

In our issue of June 23 we published an article on "What Irrigation Has Done for the West." This paper was read by Prof. O. W. Israelsen before the tenth annual meeting of the American Society of Agricultural Engineers and has recently been published as part of the proceedings of the society.

Help is a serious problem at the present time. It is a crying shame to see crops waste on account of not enough help to take care of it. It is not any one crop, but several different kinds. It is with this problem like many others "the willing horse has to work" and a lot of "slacker" men, who won't work, are idling their time away when they ought to be at work.

To make a success of dairying you must cull out the low producers. Provide plenty of feed for good cows. Keep a good pure-bred bull of known quality and a silo large enough to provide plenty of ensilage for all the livestock. Follow these suggestion and dairying will fatten your purse and help to fertilize your land.

MANY SILOS BEING BUILT

Our experience of last winter in feeding high priced hay may prove a help after all. Did this scarcity and high price of hay point the way to the silo?

In some of the middle west states the stave silo manufacturers can not make them fast enough. We have an advantage over them for on nearly every farm can be found all the material necessary to build a silo except the cement. Local stave silo makers are working to their capacity and building more factories.

The dairyman must study how to produce milk at a profit. There is a good market for all milk products. Can we supply this market and do it at a profit.

Feed at a low cost of producing or purchasing is important in this profit making. Here the silo can help and this is why so many are building silos.

Good cows require plenty of feed and the silo can help.

THE FIRE SEASON

The long, dry, hot spell has made it possible for fires to occur more often than usual. Greater care should be taken this year than ever to prevent a fire. Your grain fields are more valuable, your hay, barns, livestock in fact every thing is worth more to you and for this reason alone you should do every thing possible to prevent fire on the farm. Another reason, the world needs the products of the soil to feed them.

Every person, every community, should take it upon themselves as a personal responsibility to help in the prevention of a fire. Carelessness is responsible for nearly all fires. A match, over heated stove, gasoline, smoking, or other simular things are the cause of nearly all fires. More care must be taken for often a fire means the wiping out of all one owns and who knows the next one it will be.

WHAT ABOUT THOSE PRIZES?

At the beginning of the season a number of valuable prizes were offered for the best in grain, potatoes, sugar beets, corn, etc. How many are working for them? They were offered with the idea of helping to increase production and raise the standard of quality.

Prizes are won by doing things better. A little extra work, a little more cultivation. In fact, you can not expect to win unless you produce the very best. The prizes are of such an amount that will justify any farmer to work for them. Prizes are only won by those who stay with it, in other words you must keep on working for the prize until it is won.

There is honor and satisfaction in winning a prize to know that you have done the best. We want to encourage those who are working for them to keep up the good work.

STORAGE OF CROPS.

With the large yield of nearly all kinds of crops coming on, some plans should be made for the storing of at least part of them.

If we go to work and dump all the potatoes, for illustration, on the market at the same time the price is sure to be affected.

Our government is offering a number of suggestions on storage. Our own practical experiences of the past should offer some methods that may be used to advantage. Make a study of the markets, where the great bulk of the food products are sold, and they will be some guide to you as to when you should sell, and what part of it you should store in order to get the best results.

FOOD—THE NEED OF IT.

The world is asking for food, and in many places, is seriously in need of it. Unusual conditions the world over, on account of the war have made food one of the most important problems that we have to deal with at the present time.

Farmers this year are trying to increase the production and now we must harvest, market or store it without waste if we want to get the best returns and do the greatest good in feeding the world.

Shortage of crops in so many countries where the foods are produced make the situation all the more serious.

Our crops are good and the need of conserving them to help feed those who are short should come home to everyone.

Our government is using all the agricultural forces at its command to increase and conserve the food supply. There is need of it—for the world is asking for food.

CONSERVING OUR FOOD.

For some time, the picking, marketing and conserving of cherries, berries and all small fruit has been going on. Help has been a serious problem. In some places the crop has not been marketed because it could not be picked in time. Some people have invited the neighbors in and given them the fruit, if they would pick it.

Hundreds of people in the larger cities would gladly pay a fair price if they could secure this fruit, but the cost of picking, packing and shipment to market does not allow the grower enough to bother with it, for nearly every one has just a little more work than can possibly do.

The women of the state are taking hold of this problem and doing splendid work. Better care is being taken of all foods than ever before. Keep up the good work. If you know of food that needs conserving and are unable to do it tell your neighbor. Do not let any food go to waste if there is any way to avoid it.

PREPARE NOW FOR 1918

Our government is planning for a three years war. Our part of the campaign should now be to plan for 1918.

There may be plenty of some perishable foods this fall here in Utah, but anything in the way of cereals, beans or other food products that can be stored will be in good demand and we believe at fair prices. For this reason we should plan to produce just as large a crop as possible. Until the war ends, and for a year or two after it will be impossible to produce more bread stuff than can be used. A few mistakes were made this spring in our desire to produce a big crop. Some land was planted that was not properly prepared as a results partial failures have occured.

We now have plenty of time to prepare for 1918 crops and should be careful to profit by any mistake made this year. Prepare every available foot of land for planting. As we have suggested before in this call for the production of more food stuff you do a patriotic duty and at the same time receive good returns for doing it.

POULTRY

CARE OF GROWING CHICKS DURING WARM WEATHER

The care of growing chicks during the summer is one of the most important factors in poultry raising. The chicks may be hatched from strong, vigorous stock and carefully brooded; but unless they receive the proper attention during the warm months, their growth may be retarded. In other words, they should be so managed that they will mature into well developed fowls.

Essentials to Proper Growth.

Proper Housing.—Growing chicks should be provided with a house that will give them a place to stay in bad weather and at night. No particular style of house is recommended, but it should be so built that it will provide the chicks with ample ventilation, dryness, sunlight, freedom from drafts and be so arranged that it can be cleaned easily and frequently.

The lumber from piano and dry-goods boxes can be used in building such a house, and when covered with ordinary roofing paper so as to keep out the rain, will make desirable quarters. It is suggested that such houses be built on the colony plan, so that they can be moved from place to place, thus providing the chicks with fresh ground to range over. Elevating such a house 6 inches above the ground will assist in keeping the floor dry, by means of the circulation of air, and such space will also provide shade for the chicks.

In placing the chicks in their growing house for the first time, it is best to confine them for several days by erecting a temporary yard wherein they can run for 5 or 6 days, until they learn where to return when the fence is removed and they are allowed their liberty. Care should be taken not to crowd the chicks by placing too many in any one house. When the chickens cover the greater part of the floor at night, it is an indication that they are too crowded. At such a time they should be thinned out and placed in another house.

Feed and Water.—Feed for growing chicks may be divided into 3 classes—grain feed, dry mash, and green feed.

In addition to the grain feed that the chicks are likely to find when on free range, a grain mixture should be given them morning and evening. The following rations should produce good results:

Equal parts of cracked corn and wheat. As the chicks increase in size, oats may be added. To cheapen this ration, it may be changed to two parts cracked corn and one part wheat. When one part of oats is added to this mixture, as the chicks increase in size, the ration may be changed to 3 parts cracked corn, 1 part wheat, and 1 part oats.

In addition to the above feed, a dry mash should be fed in a hopper to which the chicks have access at all times. The following mixtures are suggested.

1 lb. middlings.
2 lbs. corn meal.
4 lb. oatmeal.
2 lbs. wheat bran.
2½ lbs. beef scrap.

2 lbs. corn meal.
1 lb. middlings.
2 lbs. wheat bran.
2½ lbs. beef scrap.

3 lbs. wheat bran.
3 lbs. midlings.
3 lbs. corn meal.
1 lb. crushed oats.
1½ lbs. beef scrap.

Charcoal, grit, and oyster shells should be provided so that the chicks can help themselves whenever they want to.

If a continued supply of sour milk can be obtained it may be fed separately in a pan provided for the purpose and the beef scrap in the above rations reduced one-half. Sour and sweet milk should not be fed alternately as such practice is likely to cause bowel trouble. Whenever it is possible, growing chicks should be allowed free range so they may obtain as much natural green feed as they need in addition to bugs and worms. When green feed can not be obtained on range such feed as sprouted oats, cut clover, mangel-wurzel beets, etc., should be fed daily.

The importance of clean fresh water for chicks can not be overemphasized. In very hot weather fresh water should be given to them twice a day. Whenever possible the pan of water should be placed in the shade to keep cool. The water pan should be cleaned every day before fresh water is added.

Shade.—Plenty of shade should be provided for growing chicks. When allowed to range in an orchard or corn field they will not only find ample shade and green feed but will benefit the trees or corn as well as themselves by destroying bugs and worms. Sometimes sunflowers are grown for shade. Artificial protection aganist the sun's rays may be obtained by supporting frames covered with burlap a few feet above the ground.

Cleanliness—Freedom from Lice.—Every effort should be made to keep the coops and houses clean and sanitary. Disease most frequently starts in unclean, poorly ventilated houses. The house should be cleaned at least once a week. Sand or litter of some kind should be scattered over the floor of the house, so as to assist in keeping it clean. When chicks are confined to a limited range, the ground should be spaded up at frequent intervals, so as to provide fresh ground for them to scratch in. Chicks should be examined frequently to see if they are infested with lice. When lice are found, every effort should be made to get rid of them, by applying a small portion of a mixture of equal parts of vaseline and lard to the top of the head and around the vent.

General Management.—As soon as the cockerels are of broiler size those not intended to be kept as breeders the following year should be marketed.

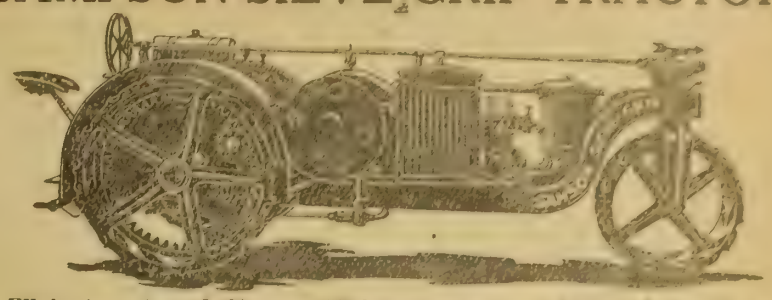
When the cockerels begin to annoy the pullets the sexes should be separated.

THE HAY CROP

Never in the history of farming, throughout this western country, have greater hay crops been harvested than are being harvested this year. All up through the southern counties of Idaho, in this county, Cache, Bear Lake and Rich counties, the alfalfa yield is phenominal while the other grasses cut for hay are producing bounteously. The landscape is dotted everywhere with immense hay stacks which reflect defiance to long winter and every other element that may threaten the life of our livestock industry. This condition, coupled with the fact that the number of cattle and horses to be fed this coming year, practically makes it impossible to experience another winter like the past one. The price of hay, while stiff at this writing, will undoubtedly come down unless foreign markets are opened up. But it would be infinitely better that local farmers disposed of their hay in the form of beef and mutton for by feeding all each farm can produce, the farmer is doing double service in that he is enriching himself by getting a good price for his produce and is contributing to the world supply of animal fats.—Box Elder News.

"That is my hired man asleep up there in the crotch of that oak tree," said honest Farmer Hornbeak. "You are entitled to one guess as to whether he clumb up there to slumber or went to sleep on the ground on top of an acorn which grew up with him."—Kansas City Star.

SAMPSON SIEVE GRIP TRACTOR



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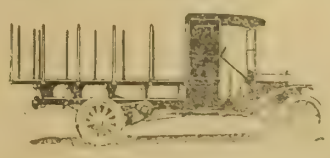

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IN TIME OF NEED

Little Marion, seven years old, was saying her prayers. "An God," she petitioned at the close, "please make Boston the capital of New York."

"Why, Marion, what made you say that?" asked her mother.

"'Cause that's the way I wrote it in my 'zamination at school today, and I want it to be right."

HOME

HOW TO MAKE SOUPS THAT NOURISH

Thick soups, broths and chowders a meal in themselves and an excellent use for left overs. Although clear soups, which are largely water, contain little nourishment, some thick soups, broths and chowders are literally a meal in themselves. Even a thin soup, taken at the beginning of a meal, by its warmth and pleasant flavor may stimulate digestion so that the heavier foods are more easily digested. The combination of soup and bread is pleasant and leads to the eating of more bread or crackers than would be consumed ordinarily. Appetizing soups also may be made often of materials which otherwise would be wasted. In this way such materials are made to contribute whatever food value they may have for the cost of labor and fuel needed to prepare them.

One of the purposes which food serves in the body is to furnish energy for its muscular work, and one way of comparing the relative food value of different foods is to compare the amounts of energy which they furnish or, as physiologists call it, their fuel values. A cup (i. e., ½ pint or a large soup plateful) of milk soup flavored with vegetables yields a little more energy to the body than the same amount of milk. A thick meat soup with pieces of meat and vegetables in it, a fish chowder, or a rich vegetable soup such as cream of tomato, yields half again as much energy as the milk, while a thin soup like buillon, consome, or clear tomato soup, yields not quite two-thirds as much as the milk, and less than half as much as the thick soup or chowder. A generous serving of thick meat soup or fish chowder yields more energy than an ordinary portion of roast beef, and even a moderate helping of vegetable milk soup usually furnishes fully as much body fuel as a moderate sized rib chop of lamb.

There are other things to be considered besides energy in connection with the food value of different kinds of food. One is the amount of the substance called protein without which the body can not build and maintain its tissues. Meat and milk soups contribute some of the needed protein. Meat, poultry, fish, eggs, milk, cheese, dried peas, beans, and other legumes are the common foods in which protein is most abundant though it also appears in fair amounts in the cereal foods such as bread, breakfast foods, macaroni, rice and the like.

The Soup Pot a Means of Economy.

Since many of the protein-rich foods are among the most expensive of those in common use, it is especially important to make the fullest possible use of what is bought. Not all of the meat which we buy is suitable for use as such. The masses of fat which are trimmed off before cooking or are left on the platters may be saved, rendered and used in cooking, while the bones, gristle and other refuse parts find their best use in the soup pot where the long, slow cooking in water draws out the gelatin, fat and other nutritive material they contain. This stock, as the resulting liquid is called, may serve as the basis not only of a great variety of soups, but also of gravies and sauces, and may be used for cooking vegetables, rice and similar foods. When it is used for soups, its flavor may be varied by adding various vegetables, such as carrots, onions, tomatoes, turnips, and celery. It may be thickened with flour, bread crumbs, or okra. Boiled rice, barley, macaroni, and other pastes and croutons (small pieces of stale bread fried a delicate brown in deep fat) may be put in to increase the food value of soup and vary its appearance and taste.

Milk Soups and Vegetable Purees.

Soup is not necessarily made from meat stock. Vegetable soups or purees are made by boiling potatoes, beans, peas or other vegetables until soft, mashing through a sieve and then heating with a little liquid (water, milk, soup stock or whatever seems desirable) and flavoring. Using left-over vegetables for such purees is an economical practice. Milk soups, which are really milk thickened and flavored with some vegetable, fish, or other food to give flavor and perhaps thickened still more with a little flour or stale bread crumbs, are both nutritious and appetizing. They furnish also an excellent means of using up skim milk. Those who wish to bring down the cost of food should remember that skim milk, a cup of which contains as much protein as a cup of whole milk, is far too valuable a food to be overlooked.

Importance of Vegetables in Soups.

In soup making it should not be forgotten that vegetables are necessary for keeping the body in health, because they are relatively rich in mineral matters and mild vegetable acids, and contain recently discovered substances without which the body processes seem not to be carried on properly. Since soups offer an excellent way of utilizing odds and ends of vegetables, and especially left overs and parts which otherwise would be wasted, the use of vegetable soup is often a real conomy. The fact that soups can be given so many and so varied flavors, are so easily made, so generally relished, and make such palatable combinations with large quantities of bread and crackers, shows that they are very useful additions to the diet. Some recipes for soups, recommended by the Government specialists follow:

Recipes For Nourishing Soups.

Scotch Broth.

2 pounds mutton.
2 tablespoons pearl barley.
2 tablespoons minced onion.
2 tablespoons minced turnip.
2 tablespoons minced carrot.
2 tablespoons minced celery.
2 tablespoons salt.
1 teaspoon pepper.
1 tablespoon minced parsley.
7 quarts cold water.

Remove the bones and all the fat from the mutton, cut the meat into small pieces, and put it into a stewpan with the water, chopped vegetables, barley, and all the seasoning excepting the parsley. It will be found convenient to tie the bones in a piece of thin white cloth before adding them to the other ingredients. Bring the stew to a boil, quickly skim it and allow it to simmer for three hours, thicken with the flour, and add the chopped parsley.

Dried Fish Chowder.

½ pound salt fish.
4 cups potatoes, cut in small pieces.
2 ounces salt pork.
1 small onion, chopped.
4 cups skim milk.
4 ounces crackers.

Salt codfish, smoked halibut, or other dried fish may be used in this chowder. Pick over and shred the fish, holding it under lukewarm water. Let it soak while the other ingredients of the dish are being prepared. Cut the pork in small pieces and fry it with the onion until both are a delicate brown, add the potatoes, cover with water, and cook until the potatoes are soft. Add the milk and fish and reheat. Salt, if necessary. It is well to allow the crackers to soak in the milk while the potatoes are being cooked, then remove them, and finally add to the chowder just before serving.

Milk and Cheese Soup.

3 cups milk, or part milk and part stock.
1½ tablespoons flour.
1 cup grated cheese.
Salt and paprika.

Thicken the milk with the flour, cooking thoroughly. This is best done in a double boiler, with frequent stirrings. When ready to serve, add the cheese and the seasoning.

The protein in this soup is equal in amount to that in five-sixths of a pound of beef of average composition; its fuel value is higher than that of a pound of beef.

Milk and Vegetable Soup.

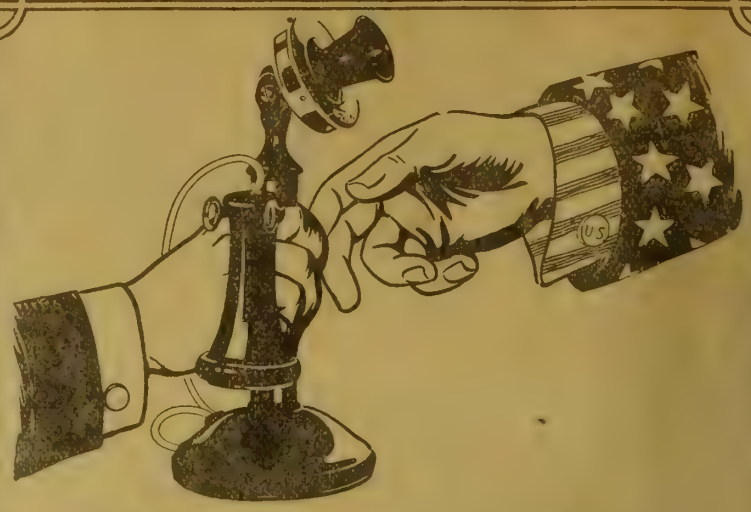
1 quart skim milk.
1 cup bread crumbs, or
2 large slices stale bread.
Small amount spinach or outer leaves lettuce (not more than 4 ounces).
1 small slice onion.
Salt.

Cut the vegetables into small pieces and cook with the bread crumbs in the milk in a double boiler. If a large quantity is being prepared for use in a school, for example, put the vegetables through a meat chopper. In this case slices of bread can be ground with the vegetables, in order to absorb the juice.

Cowpea Soup.

1 tablespoon butter or pork fat.
1 tablespoon finely chooped onion.
1 stalk celery, finely chopped.
1 cup dried cowpeas.
Salt.

Soak the peas 8 or 10 hours in water enough to cover. Fry the vege-



War Orders Rushed

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tables in the fat, add the peas, in the water in which they were soaked, and cook (preferably in a double boiler) until the peas are tender. Put the mixture through a sieve and add water enough to bring it to the desired consistency. Reheat. If this soup is thickened with 1 tablespoon of flour mixed with a little water, the pea pulp will be prevented from sinking. Dried navy or lima beans, peas, soy (togo) beans, or other legumes may be used instead of the cowpeas.

Split Pea. Soup.

1 pint dried peas.
4 quarts water.
1 large onion, minced fine.
4 tablespoons sweet drippings or butter which gives a better flavor.
3 tablespoons flour.
1 tablespoon minced celery or a few dried celery leaves.
½ teaspoon pepper.
2 teaspoons salt.

Wash the peas and soak them over night in cold water. In the morning pour off the water and put them in soup pot with 3 quarts of cold water. Place on the fire and when the water comes to the boiling point pour it off (throw this water away). Add 4 quarts of boiling water to the peas and place the soup pot where the contents will simmer for four hours. Add the celery the last hour of cooking. Cook the onion and drippings slowly in a stewpan for half an hour. Drain the water from the peas (save this water) and put them in the stewpan with the onions and drippings. Then add the flour and cook half an hour, stirring often. At the end of this time mash fine and gradually add the water in which the peas were boiled until the soup is like thick cream. Then rub through a sieve and return to the fire; add the salt and pepper and cook twenty minutes or more. Beans can be used in the same way as peas.

Mixed Vegetable Soup.

3 quarts water.
1 quart shredded cabbage.
½ pint minced carrot.
1 pint sliced potato.
½ pint minced turnip.
½ pint minced onion.
1 leek.
2 tomatoes.
2 tablespoons minced celery.
2 tablespoons butter or drippings.
2 tablespoons green pepper.
3 teaspoons salt.
½ teaspoon pepper.

Have the water boiling hard in a stewpan and add all the vegetables except the potatoes and tomatoes. Boil rapidly for ten minutes, then draw back where it will boil gently for one hour. At the end of this time add the other ingredients and cook one hour longer. Have the cover partially off the stewpan during the entire cooking. This soup may be varied by using different kinds of vegetables.

Cabbage and Potato Soup.

½ pint boiled cabbage, finely minced.
3 medium-sized potatoes.
1½ level tablespoonfuls butter, drippings, or other fat.
1 teaspoonful salt.
¼ teaspoonful pepper.
1½ pints milk, whole or skim or milk and water, boiling hot.

Peel the potatoes, cover with boiling water and cook until tender—usually 30 minutes; pour off the water and mash until fine and light. Add the cabbage, butter or other fat, and seasoning, then slowly add the hot milk or milk and water and boil up well. If a thinner soup is required the amount of milk or milk and water can be increased. If liked, an onion cut up fine and cooked in a little water may be added to the soup to give additional flavor, or grated cheese may be served with it. Kale, turnips, or a mixture of vegetables can be substiuted for the cabbage, if desired, and this is a good way to use up left-over vegetables.

Onion Soup.

2 large onions or 4 medium ones.
3 level tablespoonfuls fat, butter, or a mixture of the two.
3 pints boiling water, or water and skim milk (half and half).
1½ teaspoonful salt.
¼ level teaspoonful pepper.
2 tablespoonfuls flour for thickening ,if desired.

Melt the fat and when hot put in the onions, which have been cut up fine; cook slowly until the onions are soft, then over a hotter fire until the onions are brown—but not at all burned. Add the boiling water or water and milk, thicken with the flour stirred up in a little water, if it is desired to give the soup a little more "body;" boil up well and serve. It is a common custom to pour the soup over pieces of browned bread before serving. A mild cheese, grated, is a good addition to the soup, particularly if it is made with water.

—o—

DOES YOUR FRUIT FAIL TO JELL?

Follow Instructions and You'll Have no Trouble.

Does your fruit never fail to jell? A knowledge of some very simple rules or jelly making will avoid this troublesome waste, say home economic experts of the Utah Agricultural College. These experts have prepared the following instructions on jelly making that should prove most benefical for the housewife:

Few things connected with the preservation of fruit cause more trouble and irritation than the failure of fruit juice to "jell" at all times. At one time the jelly is perfect, and the housewife congratulates herself that at last she has found the best method. But again, under conditions apparently the same, the juice simply will not "jell," or it turns to a mass of sugar and candy. There are some rules, however, that ordinarily insure success.

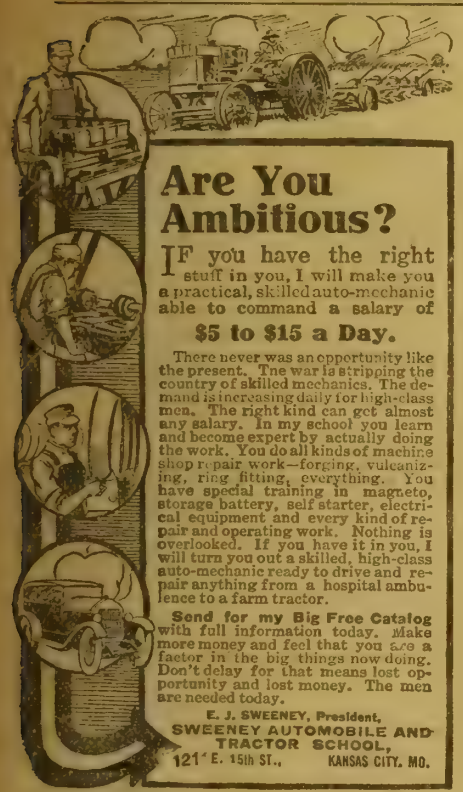
The explanation of many failures lies in the composition of fruits All fruits at the time they are ripe contain more or less of a substance called pectin. If the fruit juice is extracted, the pectin goes with it in solution. If the right proportion of sugar is now added to the juice, and the mixture heated to the boiling point for some time, the pectin causes the juice to harden into jelly.

The pectin, however, does not exist in the fruit at all stages of ripeness. In fact, it forms just at the time of ripening or a little before, and it disappears soon afterward. Therefore, fruit for jelly making should be just ripe or slightly underripe. It is for this reason that overripe fruit almost invariably fails to make good jelly; the pectin has disappeared, in whole or in part. If the extracted juice is allowed to stand in a warm place for any length of time it ferments; and fermentation takes from the pectin its power to cause hardening. Too long heating has exactly the same effect upon the pectin as fermentation.

Adding the improper amount of sugar to the juice also causes failure. If too much sugar is added, the juice candies or crystalizes. If too little is added, the juice must be boiled a long time to evaporate the surplus water, and this causes the pectin to lose its power to bring about hardening.

Not all fruits contain pectin in the same abundance. In general the acid (or sour) fruits contain most pectin; but the strawberry, though acid, contains very little. Often extremely good jelly can be made from the juice of some fruit not containing much pectin, such as the cherry, by mixing it with the juice of a fruit rich in pectin, such as the currant. The most desirable fruits for jelly making, in

(Continued on page 13)



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The Drainage of Irrigated Farms

R. A. Hart, Senior Drainage Engineer.

Required Depth of Drains.

One of the first questions asked by the landowner contemplating drainage of irrigated lands is "How deep should the drains be?" The matter of depth is one of the most important factors, but a depth perfectly satisfactory in one case may render a drainage system unsuccessful in another. In general it may be said that drains in the arid section must be deeper than those in humid soils. The soils themselves usually are deeper and the plant-root systems extend to greater depths.. But more important than either of these considerations is the fact that most irrigated soils contain salts that are harmful to crop development when present in excess on or near the ground surface. These salts may become concentrated on the ground surface, even though the depth to the water table be several feet. The soil moisture rises several feet above the free water table in the soil, and this moisture is charged with harmful salts wherever the ground water contains such ingredient. The harmful salts wherever the ground water contains such ingredients. The harmfulness depends in a large measure upon the concentration of the soil solution, so a given amount of salt may become harmful if transpiration or evaporation removes a portion of the water and leaves the salts. It is important, therefore, to lower the water table deep enough that the plant roots will not feed in salty solutions. The height to which water will rise by capillary attraction varies with the kind of soil, being greater in the case of fine-grained, compact soils than in loose, coarse-grained soils. The height of rise in clay often is twice as great as that in sandy loam. If the sand be very fine, however, the height of rise may be nearly as great as in clay. Experience throughout the entire arid West leads to the conclusion that drains rarely should be placed at depths less than 6 feet; that is, the distance to the water surface in the drains should not be less than 6 feet.

The subsoil is almost never homogeneous, however, and any change in formation has an important bearing on the required depth of drain. This is true whether the change is from a compact to a loose formation or vice versa. It is especially true if a stratum of either more or less previous material is found within, say, 10 feet of the ground surface. For instance, assume that the tract under consideration is injured by seepage from higher land; that the first 2 feet of soil consist of loam, the next 4 feet of clay, and that under the clay is a layer of sand a foot thick, followed by more clay. The depth to the top of the sand is, therefore, 6 feet, and if a drain is installed 6 feet deep it will lie on top of the sand layer. As may be expected, the damaging water seeping from the higher land moves through this sand layer, therefore the drain falls to intercept in and the drainage system is a failure. Moreover, the sand makes a very unstable foundation for a drain and the tile is likely to get out of alinement, off grade, or even to be upended and filled with sand. Even if none of these things happens, there is great danger of sand and silt making their way into the tile and obstructing it. It is quite evident that the drains should be laid on the clay underlying the pervious stratum or perhaps be bedded slightly into the clay. In that case there would be no danger of the tile getting out of position and the drain would be very effective. Thus an additional foot in depth often makes the difference between success and failure. It is necessary to know the existing underground conditions in each case before the proper depth can be decided upon.

Much the same situation would arise if the soil were a sand with a hard, impervious layer at 7 feet. Water reaching the tract by seepage from higher land would be likely to move along the impervious layer, and if a drain be laid at a depth of 6 feet the water would continue to pass under it and the tile would be likely to become displaced and obstructed. Manifestly the correct practice would be to lay the tile on or slightly in the hard, stable stratum.

Even if the soil be homogeneous the question of depth is of great importance. In such a case the effectiveness of the drain increases with the depth. A line drawn along the surface of the water table from one drain to the next is a curve which rises rapidly away from the horizontal near the drains, but is very flat midway between drains (fig. 6). If the depth of the drains be increased the depth to this curve is increased at every point, but not equally so. Thus with drains at a given distance apart, the drainage is improved greatly over the whole area, or the same minimum depth may be obtained with the drains placed farther apart. It becomes a plain economic problem, therefore, and costs must be compared carefully to determine whether a few expensive, deep drains are cheaper than a greater number of comparatively shallow drains. Drains 8 to 10 feet deep, and even more, have been installed, and, although their cost has been much greater per unit of length than that of shallower drains, they have been so much more effective, requiring fewer lines, that they have been more economical.

It is not always true, however, that the effectiveness of a drain increases with the depth. For example, in a subsoil that changes from a sand to a compact, relatively impervious clay at 6 feet, it would not be wise to install drains at a depth of 10 feet since they would then be laid in material that yields very little water, and the effectiveness of the system would be little greater than if the drains were installed only 6 or 7 feet deep, and the expense of the extra cutting would be wasted. There is even a possibility that the drains would be ineffective at such a depth. If the subsoil is a joint clay, however, it will be found to drain as readily as sand.

Drains having a depth of from 2 to 4 feet, such as are employed in humid sections, are practically worthless in the reclamation of irrigated lands.

Spacing and Location of Drains

The landowner contemplating drainage invariably asks the question, "How far apart should drains be placed in draining irrigated lands?" This question, like that as to the proper depth of drains, does not admit of a definite answer. The question is more one of location than of spacing, and the two factors must be considered together, the later usually depending largely on the former.

The damaging water may have several sources of supply and, as likely as not, it will be moving laterally through the soil instead of percolating downward from surface application. The chief sources of supply, aside from direct precipitation and the melting of snow on the ground surface of the tract itself, are downward percolation of the excessive water used in the irrigation of the tract itself, surface run-off from higher land, supplied as precipitation, melting snow, irrigation or seepage brought to the surface; lateral underground seepage from the irrigation of higher lands, and losses from ditches, canals, and reservoirs; and, in some instances, direct natural seepage from the mountains.

Ordinary drainage methods would serve for the removal of the moisture applied directly to the tract itself, from whatever source, but this constitutes the smallest part of the problem. In the majority of instances it is necessary to intercept lateral seepage from higher lands before the damaging water reaches the tract in question. Often a combined system is necessary.

In the interception of lateral seepage the question of location is of highest importance, while the question of spacing is of little or no consequence. One properly placed line of

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drain will be more likely to reclaim successfully the injured area than a dozen lines placed at random, however closely they may be spaced. It is not unusual to find that a single drain will reclaim a 40-acre tract, when it can be located so that it will intercept the damaging water along the line of its appearance as seepage . For instance, consider a tract of land injured by seepage from higher land. The seepage appears usually along a belt at the change of slope from a steep to a lighter grade. If the subsoil be examined, it probably will be found that there is a more previous stratum of material, say sand, at a depth of several feet. This stratum of sand acts like a pipe line, leading from the source of supply and pouring the damageing water into the lower land, since the flatter slope is insufficient to carry the water away as rapidly as it reaches the tract. Now, if a drain is located just below the line of the change of slope, at or near the upper edge of the wet area, and is at sufficient depth to cut through the sand layer, the flow of water will be intercepted and the water will be carried away in the drain without doing damage to the land.

The conditions must be studied thoroughly and to a sufficient depth to make sure that there is no pervious stratum underlying the drain through which water may seep to the lower land. In case such a stratum exists at a depth of, say, 10 feet or more, it will not be feasible ordinarily to reach it with a drain line, but a drain of ordinary depth may be installed and relief wells boreo in the bottom of the trench to the stratum, thus providing passageways through which the water may rise and reach the drain.

After an intercepting drain is installed and the seepage from outside sources is cut off the natural drainage of the tract usually is sufficient to take care of the water applied to the tract itself, but if this is found to be not the case it will be necessary to install drains to remove the excess water. The question of spacing may come in here, especially if the tract be rather flat and has a fairly uniform surface. If the subsoil be clay, with a sand stratum at a depth of several feet, drains 400 to 500 feet apart will serve. If no sand stratum be present it may be necessary to reduce the spacing to from 200 to 300 feet, but if the subsoil be sand the spacing may be greater than 500 feet, and in the case of gravel subsoil the spacing may be a quarter of a mile or more. Where the subsoil was a coarse gravel some very satisfactory systems have been installed with drains every half mile, with the depth from 6to 8 feet.

If the tract in question be cut up by swales and depressions the installation of a regularly spaced system is not advisable. Generally, in such a case, the drains should be located in the swales. The latter arrangement has some exceptions in cases where the subsoil underlying the swales is less pervious than that underlying the higher ground. Often it is necessary to have the drain lines run at the edge of the swales, two lines being required for each swale. It has even been found necessary in some instances to locate the drains on the higher land.

The installation of drains below the wet area, with the idea of drawing out the water, should be attempted only when the subsoil is a coarse gravel, and not even then if the land above the wet area has a greater slope.

As a rule drains in the irrigated section run across the natural slope rather than down the slope. The reason for this is that with the drains running down the slope the damaging water would be moving in the same direction that the drains run, and consequently very little water would reach the drains, the remainder continuing to reach the lower land and doing damage. The only land drained would be that in the immediate vicinity of the drain lines.

The average amount of tile per acre ordinarily employed in farm drainage in the irrigated section is about 100 feet. At this rate a mile of tile will drain about 53 acres of land, or a square mile of land will require about 12 miles of tile.

—o—

HOW TO GROW ONION SETS

Jensen, Utah.

Utah Farmer:

Please tell me about when to plant and how to grow good onion sets for next spring planting?

Mrs. Andrew Dudley, Jr.

Answered by Dr. M. C. Merrill, Horticulturist, Utah Agricultural College.

The growing of onion sets is similar in many respects to the production of the regular crops of onions. The main difference consists in the rate of sowing the onion seed. If onion sets are desired the rate of seeding is from 50 to 100 pounds of seed per acre in rows from 9to 18 inches apart. At 75 pounds per acre in rows 9 inches apart one ounce of seed will be needed for about each 50 feet, or approximately 200 seeds per foot of drill. Where the ordinary crop of onions is desired the rate of seeding ranges from about 3to 5 pounds per acre.

Before planting the seed, the ground should be very thoroughly prepared in order to establish a good seed bed with a very smooth, fine surface. Sowing is ordinarily done by hand drills. During the growth of the crop the same care should be given as for the regular onion crop, except that no thinning is done.

About 90 to 110 days after seeding, the sets will be ready to harvest. These sets are simply small onions that have been grown so closely together that they are unable to attain normal size. The best size for onion sets is about one-half inch in diameter, and the shape should be pratcically globular. The yield of onion sets per acre will average about 300 bushels.

After harvesting and drying, the sets are stored in a cool, dry, well ventilated place and kept till the next spring when they are planted out as soon as the ground can be worked. Green onions can be had from sets in from 4 to 6 weeks, or they can be allowed to grow and produce ripe onions later in the season.

Formerly the sowing of seeds for sets was not done till late in the season but it has been found better in many localities to sow the seed in the early spring and harvest the sets during July. If you should sow your seed about the first of August it would be about the first of November before the sets would be ready for harvest, and for the attitude and latitude of Jensen it is feared that would be too late for best results, as onions are usually all harvested before that time. It is therefore recommended that, due to the fact that it is now so late, you wait until next spring and then buy sets from the seedsmen for planting. If you should desire to plant seeds now it would probably be well to do so on a small scale unless you are sure the sets would mature under your conditions.

For more detailed information along this line a splendid publication is Farmers' Bulletin 434 on "The Home Production of Onion Seed and Sets."

—o—

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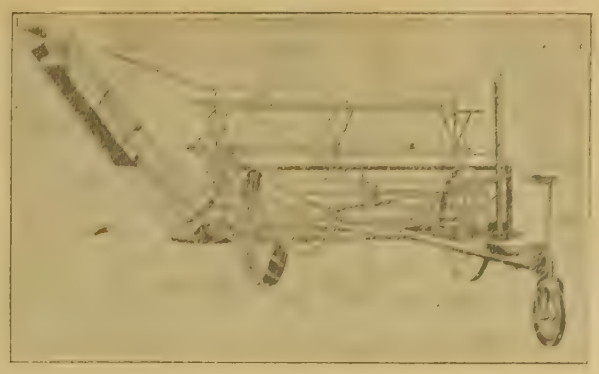

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Murray, Utah. Idaho Falls, Idaho.

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Refiners

SALT LAKE CITY, UTAH

LIVE STOCK

SILAGE FOR HORSES, SHEEP, CATTLE AND SWINE

Hay, grain, mill feed and oil cake have reached such forbidding prices as to discourage some stockmen. Those men who have silos are less fearful of "dried-up" pastures and winter feed than those who have none. Silage, however, is not a panacea for all these troubles, but it mitigates them to a very large extent. Dairymen are given credit for having used silage first and some people think that it is a feed fit only for the dairy cow. True, the use of silage and profitable dairying are closely associated, but such are not its limitations.

Horses and Mules.

Experiments at the Pennsylvania, Missouri and North Carolina Stations have shown that corn silage can be used as a part of the ration for all classes of horses and mules. Mouldy, spoiled, rotten acid or frozen silage is very unsafe as a horse feed and none but the best should be fed. A good daily ration for a 1400 lb. draft horse at work consists of 15 lbs. of silage. In starting horses and mules to 12 pounds of oats. Idle horses can consume profitably about 25 lbs. of silage daily plus 10 to 12 lbs. of hay. Weanlings, yearlings and two years olds will make satisfactory growth when silage constitutes a part of their roughage. In addition, they should receive some grain and hay. Mature, inboal mares, have produced strong foals on a ration of legume hay and corn silage. Silage is also a very excellent winter feed for horses on dry hay or oat and wheat straw. Many horses in the wheat belts of Washington would be in better shape for spring work if they received some silage. In starting horses and mules to eat silage only three or four pounds per head should be given daily along with other feeds. The silage should then be increased and the other feeds decreased.

Sheep

As with horses, the addition of silage to rations for all classes of sheep reduces their cost and supplies succulence, palatibility, and variety. Likewise, rotten, mouldy, sour or frozen silage should not be used. Pregnant ewes should receive from three to four pounds per head daily during the winter. This should be supplemented with two or three ounces per head daily of cottonseed cake and some hay. After the lambs are born silage increases the milk flow of the ewes. In the fattening of lambs and yearlings for market, the cheapest gains have usually been made when silage constituted a part of the ration. Rams winter well on silage as a part of their feed.

Cattle.

Silage is just as indispensible to successful beef-cattle raising as it is to successful dairying. In fact, during these times of high priced feedstuffs it is highly essential. As with sheep and horses, silage alone is too wide a ration. Cattle receiving silage exclusively will not do well. Cottonseed meal, linseed-oil-meal, clover alfalfa or pea hay should be fed with it. Fattening steers will eat 20 to 25 lbs per head daily. Wintering yearlings will do likewise. Calves may be fed all the silage they will clean up twice a day. Grain and legume hay should, in all cases, be fed in addition. Bulls also thrive on silage. From 10 to 15 lbs. per head daily plus hay and some grain are sufficient to keep them in good condition. Pregnant beef cows will eat 30 to 40 lbs of silage per head daily plus some hay.

Swine.

Silage is too bulky for swine. However, it may be fed as a conditioner or tonic especially during winter, but hogs will not fatten profitably on it. They waste more of it than they consume. When pasture is unavailable, sows that have suckling litters would benefit by receiving a limited quantity.—Wm. Hislop, Animal Husbandman.

—o—

THE ADVANTAGES OF A PERMANENT PASTURE FOR HOGS

Pork can be produced at a profit, even with the present high prices of grain, by using forage crops to a large extent. Permanent pastures also play an important part in a forage-crop succession.

Temporary pastures such as the cereals are best utilized in the early spring, and forage crops such as corn, soy beans, cowpeas, and velevet beans furnish fall grazing, but late in the spring and in the summer there is a season during which few temporary crops are available, with the exception of rape. At this time permanent pastures such as alfalfa, the clovers, blue grass, Bremuda, and a number of others, have their greatest use. They do not furnish grazing as early in the spring as do the cereals previously mentioned, but they grow better during late spring and summer and afford an abundance of forage at a season when few other pasture crops are ready to graze.

Permanent pastures require a minimum of attention and care. They make the cheapest pastures to maintain as it is not necesasry to plow and replant each year. If not too heavily grazed they may be carried over from one season to the next and increase in value each year. They furnish almost a balanced ration, and only a little supplement need be fed to obtain a normal growth of the pigs.

One of the chief advantages of a permanent pasture is its long growing season. Growth continues from spring until fall, and the forage is palatable and nutritious at almost any time. Either a few hogs may be grazed during the whole season, or, after the pasture has made considerable growth, a large number may be pastured for a short time with practically equal results in the amount of pork produced per acre; showing that a permanent pasture is adapted to a variety of conditions in the forage-crop plan.

A permanent pasture then takes the place of a reserve forage crop, being called upon to furnish grazing at any time of the year when other pastures fail or are exhausted. The first thing to be done when one contemplates engaging in stock raising is to establish a permanent pasture. It fits into the forage-crop succession at any point where most needed, and is the cheapest pasture to maintain.

—o—

STABLE RULES FOR HORSES

The following rules for feeding and caring for horses were prepared by the Boston Work-Horse Relief Association.

1. The best order in feeding is: Water, hay, water again, grain.

2. Never give grain to a tired horse. Let him rest and nibble hay for an hour or two first. Grain in the manger before the horse comes in looks bad.

3. Water the horses as often as possible; but let the horse that comes in hot drink a few swallows only, until he is cool.

4. Always water the horse after he has eaten his hay at night. Do not go to bed leaving him thirsty all night.

5. Do not forget to salt the horse once a week; or, better yet, keep salt always before him. He knows best how much he needs.

6. Give a bran mash Saturday night or Sunday noon; and on Wednesday night also, if work is slack. After a long day in very cold or wet weather, a hot mash, half bran and half oats, with a tablespoonful of ginger, will do the horse good. Put very little salt, if any, in the mash.

7. If the horse does not eat well, or slobbers, examine his teeth.

8. Keep a good, deep dry bed under the horse while he is in the stable, day or night, on Sundays especially. The more he lies down, the longer his legs and feet will last.

9. In order to do well, the horse must be kept warm. Give him a blanket on cool nights in late summer or early fall, and an extra blanket on an extra cold night in winter.

10. In cold rains do not tie up the horse's tail. The long tail prevents the water from running down the inside of his legs, and keeps off a current of air from his belly.

11. Take off the harness, collar, and all when the horse comes in to feed. He will rest better without it.

12. Never put a horse up dirty or muddy for the night. At least brush his legs and belly, and straighten his hair.

13. In hot weather, and in all weathers if the horse is hot, sponge his eyes, nose, dock, and harness marks, and the inside fo his hindquarters when he first comes in.

14. When the horse comes in wet with rain, first scrape him, then blanket him, and rub his head, neck, loins, and legs. If the weather is cold put on an extra blanket in 20 minutes. Change the wet blanket when the horse dries. Do not wash the legs. Rub them dry, or bandage loosely with thick bandages. It is far more important to have the legs warm and dry than clean.

15. To prevent scratches, dry the horse's fetlocks and heels when he comes in, especially in winter; and rub on a little glycerine or vaseline before he goes out in snow or mud.

16. Examine the horse's feet when he comes in, and wash them if he does not wear pads. If a horse in the city is not shod in front with pads, tar, and oakum, which is the best way, it is absolutely necessary to keep his feet soft by packing them, or by wrapping a wet piece of old blanket or carpet around the coronet, or by applying some hoof dressing or axle oil, inside and out, at least three times a week.

17. Let the horse have a chance to roll as aften as possible; it will rest and refresh him. Give him a little clean earth or a piece of sod to eat now and then; he craves it, and it is good for his stomach and blood.

18. Speak gently to the horse, and do not swear or yell at him. He is a gentleman by instinct, and should be treated as such. The stable is the horse's home, and it is your privilege to make it a happy one.

19. It is very important that stables should be well ventilated; but do not let a draft blow on the horses. Horses in stalls near a door or open window should be blanketed accordingly.

—o—

There was a timid knock at the door. "If you please kind lady" the beggar said, "I've lost my right leg——"

"Well, it ain't here," retorted the lady of the house, and slammed the door.—New York Times.

ARE YOU LOOKING FOR TROUBLE?

It's easy to find. Look at your axle through a magnifying glass and see the tiny seams and pores which cause friction troubles. Use

MICA Axle Grease

on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating.

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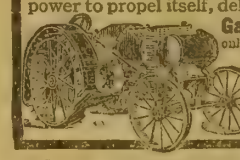

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For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

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Use any Injector, but Cutter's simplest and strongest.

Prices:
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Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent

DOES YOUR FRUIT FAIL TO JELL?

(Continued from page 9)

the order of their desirability, are: Currant, crabapple, apple, quince, grape, blackberry, raspberry, plum.

Clear jelly can be obtained only when the juice is extracted without subjecting the fruit to pressure. Doubling the cloth through which the fruit drains, adds to the clearness. When all the juice possible has been drained off without pressure, more may be obtained by applying pressure. Jelly made from this juice after pressure is just as well flavored and as nutritious as any, but is not as clear.

One must use judgment and test jellies in the making by putting a spoonful on a plate. If the juice jells quickly, it is done. If a jelly is not as hard as it should be the day after it is made, setting it in the sun for several hours helps it greatly.

If water has been added to the fruit in boiling it before the juice is extracted, or if the fruit has been picked shortly after a rain, boiling the juice down somewhat before adding the sugar helps to produce good results. Boiling the juice in a large bottomed vessel makes possible more rapid evaporation and reduces the length of time required; it prevents both the candying and the gumminess of the jelly to a considerable extent.

If a "mint jelly" or mint flavor is desired, remove the leaves from the mint stems, using leaves from about six to twelve stems for each twelve glasses of jelly. Crush the leaves and tie them in a cheesecloth bag. Put the bag in the kettle with fruit to boil. When enough flavor has been out to suit your taste, remove the bag. The mint flavor is used chiefly in crabapple and grape jelly.

Jellies may be colored by using vegetable coloring. Different colors of jelly in the same glass or "layer jelly" may be had by mixing the coloring in only a part of the jelly, pouring first a half inch of uncolored into the glasses and letting it harden a trifle, and then a half-inch of colored, and so on.

Jelly contans so much sugar that bacteria cannot work in it. Molds, however, find jelly a good feeding ground. As molds require a constant supply of oxygen, the jelly can be protected by covering it with melted paraffin as soon as it is cooled. The paraffin soon hardens and shuts out the air and also dust. Store jelly in a cool dry place.

———o———

Sent in your orders for Butter Wrappers to the Utah Farmer.

HURRAH! RINGLING DAY ALMOST HERE

Big Circus and Great Spectacle Occupy Five Trains Crammed With Wonders.

The big event for which the youngsters and grownups have been impatiently waiting is drawing near, for on Monday, August 13, Ringling Brothers' circus is to exhibit afternoon and night in Salt Lake City. Expectancy never ran so high before and it is likely that this district will send a large delegation to feed the elephants. Unusual interest centers around the gigantic spectacle, "Cinderella," with which the famous showmen are this season opening their wonderful main tent program. "Cinderella" is probably the best loved of all fairy tales and to see it produced with more than 1000 persons, hundreds of dancing girls and glorious pageants, indeed gives promise of making "childhood's golden dreams come true." In the same great tent, will come the marvelous circus numbers in which 400 men and women performers, scores of trained animals and a galaxy of special features are introduced. The majority of the acts are entirely new to America, the Ringling Bros. having secured the pick of all European performers who have been obliged to seek engagements in this country. The all-new street parade will take place show day morning.

TEN SUGGESTIONS FOR MILK CONSUMERS

By the U. S. Department of Agriculture.

Keep Milk Clean, Covered and Cold.

1. Buy only the best milk obtainable. It is the cheapest in the long run.
2. Consult the health department before selecting your milk dealer.
3. Buy only bottled milk if possible. Dipped milk is often dirty and deficient in cream.
4. Take milk into the house as soon as it is delivered, and place it in the refrigerator immediately. Bacteria increase rapidly in milk which stands in the sun or warms up, and such milk will sour quickly.
5. Keep milk in the original bottle in the refrigerator until the moment of serving. Milk which has been poured from the bottle should not be returned to it.
6. Keep the bottle covered with a paper cap or an inverted tumbler, to prevent the entrance of flies and dust, which may carry dangerous bacteria into the milk.
7. Keep the refrigerator clean and sweet by means of proper drainage and frequent washing with scalding water and sal soda, since milk quickly absorbs unpleasant odors and becomes less palatable.
8. Wash milk bottles as soon as emptied, by rinsing first with lukewarm water and then with hot water. If there is an infectious disease in your house, do not return any bottles except with the knowledge of the health department and under conditions which it may prescribe.
9. Return empty bottles promptly, and do not use them for anything except milk. Remember that they are the property of the dealer and represent cash.
10. Remember that clean milk, properly cared for, is one of the best foods obtainable. It is nourishing, digestible and usually economical.

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SCARCITY OF IRON AND STEEL

To give our readers some idea as to the iron and steel market, for it affects, our farm machinery, we are going to reproduce a part of a circular recently sent out by the chamber of Commerce for U. S. A.

"The authorities of the Council of National Defense believe that the iron and steel situation should be understood by every business man in the country. It can be set forth in a few words, but directly or indirectly it affects all business. Business policy everywhere should be developed with full regard to this fundamental condition.

Substitutions for Steel.

The course for business men to pursue is clear. Iron and steel should be used only when the requirement is unavoidable. Every effort should be made to use wood and concrete in place of steel whenever this can be done, and construction and development work requiring steel should be postponed wherever possible.

Course for Ordinary Business.

Where a business uses steel as a raw material and the product is not used in connection with the war, conservative men will now plan to use some substitute, and if this cannot be done they will doubtless plan to curtail or even to suspend operations during the war. It should be anticipated that the situation which is developing with rapidity will probably make it impossible for them to secure adequate supples of steel and may even make it impossible to secure any supply.

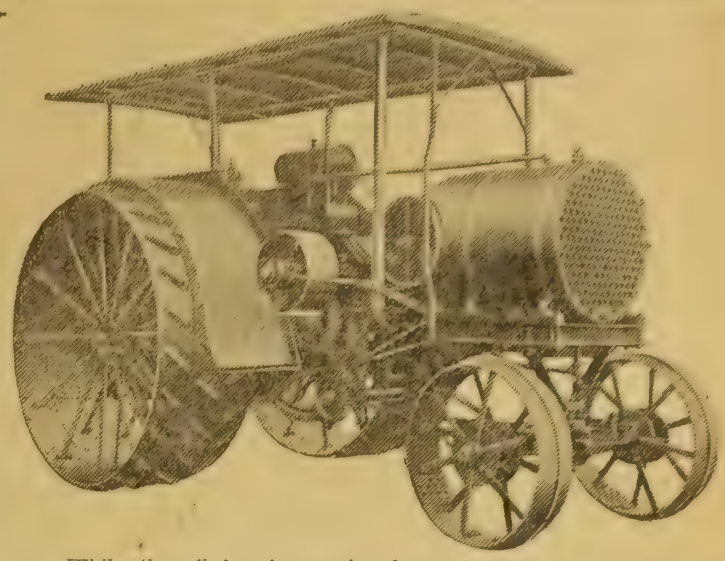
Outstanding Contracts.

When production of railroad cars and locomotives is interfered with because necessary steel is going to industries producing pleasure automobiles, steel furniture, buildings for amusement purposes, etc., the situation cannot be expected to continue.

Priority in Distribution.

Business men will probably make their plans in the expectation that soon there will be established an order of distribution of steel, and that the wild scramble to enter orders for future delivery of steel will be ineffective. In fact it will occur to many no doubt, that failure to recognize this situation may lead to unfortunate results. In a business requiring steel, if contracts are placed for future delivery, not only for steel but for other materials, the manufacturer may find that he cannot get the steel but can get other materials. In this case he might find that he had on hand large quantities of materials which he could not use because he had no steel."

AULTMAN-TAYLOR



While the oil burning engine has attracted the attention of many power users, still the steam engine is a favorite in many localities. Steam power is very dependable and satisfactory. We have been building steam engines for many, many years and in the 1917 output of

AULTMAN-TAYLOR CHANNEL MOUNTED TRACTION ENGINES

will be found a steam traction engine that for simplicity, durability and economy is without an equal. All of our engines are mounted on an Independent Frame; that is, the gearing, the hitch, etc., is mounted on this frame and is free from the boiler, relieving it of all strains. All of our boilers are of A. S. M. E. standard and have exceptionally deep fire-boxes, insuring freedom from leaky flues. Cast iron smoke stack is furnished and chain oilers lubricate the crank shaft. Strong gears, semi-steel, or steel on special order, take the engine under load over the steepest hills. For belt work, it furnishes a steady stream of power that will make your thresher, or any belt-power machine hum from morning till night.

OUR CATALOG tells you all about this engine.

Write for copy, or better still drop in at our Salt Lake City, Branch and see it run.

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SALT LAKE CITY
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Have You a Son of Your Own?

Is there any other young man in your community in whom you are interested?

Are you anxious for these young men to succeed in life?

Do you know that more men fail because they are not suited to their work than from any other cause?

These questions will help you to decide whether or not you should have the new book, entitled

The Young Man and His Vocation

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Dr. Harris has made a special study of the industrial needs of young men. He has prepared two manuals on vocational subjects for the Young Men's Mutual Improvement Associations, and he is thoroughly familiar with the problems of the young men of the West.

His book contains the cream of his writings on the subject.

Can you afford to have your son get along without this book? Send $1.25 Today to the

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Lehi, Utah.

USE OF POTATOES IN BREAD MAKING

(Continued from page 3)

Wash thoroughly and boil in their skins about 12 potatoes of medium size. Cook them until they are very tender. Drain, peel, and mash them while hot, being careful to leave no lumps. Allow the mashed potato to cool to 86 degrees F. or until lukewarm. To 3 pounds (5 solidly packed ½ pint cupfuls) of the mashed potato, add the yeast, which has been rubbed smooth in a cup with 3 tablespoonfuls of lukewarm water. To get all the yeast, rinse the cup with the remaining tablespoonful of water and add this also to the potato. Next add the salt, the sugar, and about 4 ounces of the flour (1 scant half-pint of sifted flour). Mix thoroughly with the hand, but do not add any more water at this stage.

Cover the mixing bowl to avoid the formation of a crust on top and place out of the way of drafts to rise, where the temperature can not fall below 80 degrees F. or be much higher than 88 degrees F. Where the housewife has no thermometer she should see that the dough in all the rising is kept moderately warm, but not up to blood heat. Any water used in mixing the dough should be moderately warm, but by no means hot. This sponge, if kept at the proper temperature, should, after two hours, become quite light.

To this will-risen sponge, which now will be found to be quite soft, add the remainder of the flour, kneading thoroughly until a smooth and elastic dough has been formed. The dough must be very stiff, since the boiled potato contains a large amount of water which causes the dough to soften as it rises. Do not add water to the dough unless it is absolutely necessary to work in the flour. Set the dough back to rise again—temperature at about 86 degrees F.—until it has trebled in volume, which will require another hour or two. Then divide the dough into four approximately equal parts, reserving a tiny lump weighing 2 or 3 ounces for an "indicator." Shape the sample into a ball and press it into the bottom of a small tumbler with straight sides. The glass should be slightly warmed. Note the volume of the ball of dough in the tumbler and mark the glass at twice this volume.

Mold the four portions into loaves and place in greased pans which have been slightly warmed. Place the glass containing the "indicator" beside the pans and let all rise, under proper temperature, until the "indicator" shows that it has doubled in volume. Then place the loaves in the oven and bake in a good, steady heat (400 degrees to 425 degrees F.) for 45 minutes.

To test oven. Where no oven thermometer is at hand, a convenient test will be to put a teaspoonful of flour in an earthen dish in the oven. If this flour becomes light brown evenly throughout in 5 minutes, time, the oven is right for bread baking. If the flour scorches in that time, the oven is too hot.

DON'T MISS ANY STEP.

Keep these recipes for future use.

HOW UTAH FARMERS CAN HELP GERMANY

An Interview with R. A. Hart, Senior Drainage Engineer U. S. Department of Agriculture.

The war into which this nation has been forced, much against its own desires and in spite of all hopes and prayers, is going to be won by old General Merchandise, commander-in-chief of the great army of producers, the Knights of the Hoe, bearing the brunt of all engagements. Beans shall play as important a part as bullets. Swords shall be beaten with plowshares. Troops of workhorses shall subdue cavalry. Irrigation water shall quench the fires of Prussian militarism. The drainage trench shall be impregnable against assaults from the military trench.

Utah farmers may help America by acts of commission they may help Germany by acts of ommission.

There are in this state 300,000 acres of irrigable land, under ditch systems which are not doing their bit.. Most of this land has been under cultivation once but has been reduced to a condition of noproductiveness or partial productiveness due to a waterlogging of the soil or the accumulation of an excess of alakli salt, as a result of irrigation. The area involved is approximately one-fourth as great as the present irrigated acreage of the state.

As a rule the lands in question are the cream of the respective sections, having been the first taken up, owing to natural good qualities, ease of irrigation, etc. They are near towns and markets. Transportation conditions are good. The land is under fence, has been levelled, ditched and provided with buildings in many instances. There are no colonization problems. Social conditions are favorable. Little extra in the way of equipment, work animals, etc., are necessary to handle these lands since they are scattered throughout producing areas and are in private ownership, as a rule.

Such lands are to be found in all parts of the state They occur in varying areas ranging from a few acres to many thousands of acres in a body. There are few farms that do not contribute their quota. In some cases the lands are not paying their taxes. In other cases wild hay is being grown or the lands are being used for wet or salt-grass pastures and yield a small return. In any event all the lands may be restored to a highly producing condition at a reasonable outlay. Wet pastures may be reclaimed, almost at once, to a condition suitable for the production of potatoes, sugar beets or other crops. The alkali lands may be reclaimed equally well in a few months time. If pastures are necessary, the soil can be put into such a condition that an acre will pasture several animals, wheras now several acres are required to pasture one animal, and the remainder of the slacker area may be put into intensive culture. All of this may be accomplished by underdrainage, subsequent treatment and water control. The process is simple and effective and economical. Means for financing such work are at hand. The returns are large. Federal advice and assistance are available in planning reclamation work.

One of the best ways in which Utah farmers may help Germany is to allow these lands to remain in their present condition. It is not unreasonable to estimate that were these lands reclaimed they would support an army of 60,000 soldiers in the field.

QUARANTINED

Aleck, who is a very 'smart Aleck" indeed, came rushing in to his mother saying:

"Mama, did you know they had closed the city library?"

"No Johnnie. Why?"

"Because they found smallpox in the dictionary."

RANK INJUSTICE

Son "Say, pop, is it true that teachers get paid for teaching school?"

Father "Certainly, son."

Son—"Well, I don't see why when us kids do all the work!"

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district at a good buy. Ed. Pearson, Route A., Delta, Utah.

RELIABLE FARM BARGAINS

$115 per acre will buy you a first-class farm in the Bear River valley, planted in crop this year. Right on the main county road and within one mile of one of the nicest towns in the Bear River valley. We have a number of first-class farms which we are handling for people living in the east, that we can sell from $115 to $175 per acre. This land will rent and pay you big interest on the investment if you do not care to farm it yourself.

In the same locality we have eighty acres of land with large barns, good house, eleven acres planted to 12-year-old apple orchard; balance in hay, grain and sugar beets. This property is worth $200 per acre. This can be had for $150 per acre, on terms.

In Cache valley we have one of the finest dairy farms, containing 271 acres; 107 acres of irrigated land, balance pasture land. The property is all fenced and under a high state of cultivation. Part of it into fine stand of alfalfa. Improvements consist of one 8-room house(large barn that will hold 50 or 60 head of stock, machine sheds, granaries, hog houses and numerous other outbuildings. This property can be had at the ridiculously low price of $57 per acre. Ten per cent down, ten years on the balance, 6 per cent interest.

160 acres in Cache valley, with no improvements; under high state of cultivation; first farm watered out of the canal; right near the railroad station; good town and schools; 60 acres of irrigated land, balance first-class pasture land, including some large trees, making excellent shade for the cattle. This farm can be had for $45 per acre; 10 per cent down, ten years to pay on the balance. If you are looking for a first-class farm, near a good town, in one of the best valleys in this part of the country, this will certainly appeal to you.

Near 14th South, on a 5-cent car line, we have some one-acre garden tracts that we can sell for $450 per acre.

We have a number of large cattle ranches we can sell from $10 per acre up.

We exchange farms for city homes.

Phone Wasatch 963.

KIMBALL & RICHARDS,
"Land Merchants,"

New address— 52 and 54 Main street, Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

H. A. PINEGAR
Wellington Utah

Your Chance to Make Some Money

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

Our Proposition

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. Albertson
604 Dooly Building
SALT LAKE CITY UTAH

FOR SALE OR EXCHANGE

Southwestern Idaho highly improved irrigated income property with no incumbrance. Splendid community, near good town. Good water right. Price right and terms easy. Will consider an exchange for developed or undeveloped irrigated land in eastern Idaho or Utah where sugar beets are grown, also water logged land where drainage is available, if price is right.

Farm Owner, care of
UTAH FARMER
Lehi, Utah.

IDAHO RANCH BARGAIN

160 Acre cattle ranch, 4 miles from county seat, railroad, etc. All splendid farming land, running water, 50 acres good wheat, 60 acres national meadow, fair buildings. Price $4,700. Good terms.

FEDERAL LAND COMPANY
Ogden Utah

HOMESTEADS

For the best homesteads in Utah, write

GEORGE A. COLE
Monticello, Utah.

Drying Fruits and Vegetables

Addie D. Root.

Fruits and vegetables may be dried by sun, or artificial, heat. The latter method is more rapid, more certain and usually gives better results. It is necessary to have sufficient heat to cause rapid evaporation and an air current to carry the moisture away from the products. Any simple apparatus which will perform these two functions will be all the equipment necessary and will dry fruits and vegetables in a satisfactory manner. The equipment should be planned with the idea of ease in handling the product and provision should be made so that several varieties can be handled at once and can be kept separate.

Drying by Artificial Heat.

Homemade Dryer.—A simple, satisfactory apparatus for home drying consists of a series of trays with wire mesh bottoms. These trays fit together closely, the heat is applied beneath, and the warm air takes the moisture up and out of the evaporator. Such an arrangement makes it easy to handle various products at the same time and to dry a quantity with little trouble.

The approximate cost of such a dryer is $2 when all the material is purchased. It may be made of old boxes or scraps of lumber at less expense. The dryer may consist of from one to ten trays. The daily capacity of one tray, 12 by 24 inches, is from 2-3 to 1 peck; and of ten trays, 6¾ to 10 pecks. The wire mesh for the bottoms should range from screen wire in the upper trays to larger mesh wire in the lower. This helps to keep a more uniform temperature. The trays should not be deep. One layer of the product to be dried spread upon the tray gives best results.

The dryer may be used on a gas burner, oil stove or kitchen range. To prevent over-heating, the trays should be raised 10 inches above the source of heat on a wooden box, from which the top and bottom have been removed. The box should be raised 4 inches by placing a brick under each corner. This permits free circulation of hot air through the trays.

It is advisable to use a thermometer so that the temperature may be known and regulated. An ordinary oven thermometer may be used or, better still, a small hole may be made in the side of each tray so that a glass rod thermometer may be inserted. A temperature of 120 to 160 (average 140) degrees Fahrenheit will give good results. Most fruit and vegetables may be thoroughly dried in three hours at this temperature. The temperature may be raised to the proper point quickly by spreading a piece of thin cloth over the top tray. The cloth should be removed when the proper temperature has been reached. The temperature may be kept constant by regulating the heat below.

Oven Drying.—Oven drying has been practiced for many years. This method is not so satisfactory as the one given hertofore, since there is more danger of over-heating the products and the air circulation is poor in the oven. The fire must be kept very low, the oven door must be left open so that moistiure may escape, and the product should be stirred occasionally.

Sun Drying

Sun drying must be done during the brightest days of summer and early fall. The product should be protected from insects with screen or netting and should be brought in before dew falls. Sun drying is slow, since sun heat does not cause rapid evaporation; inconvenient since the product must be put out and taken in each day; uncertain, since a cloudy or rainy day early in the drying period may allow the product to sour.

Directions for Drying Fruits.

Apples may be peeled and quartered or cut crosswise into one-eighth-inch slices. The fruit may be prevented from browning before being placed to water containing 1 tablespoonful in the dryer by dropping the slices in of salt to the gallon. If the apples are dried quickly at a high temperature, they will be as attractive and light in color as commercial dried apples. During the drying process the apples should be stirred occasionally to insure even drying. The temperature should be kept at about 140 degrees. If beads of moisture come out and the apples become very sticky the temperature is too high. From 2 to 2½ hours are sufficient for drying apples with artificial heat at the temperature given. Apples are sufficiently dry when they will give the following tests: 1. Impossible to press water out of the freshly cut ends of the pieces; 2. Sufficiently elastic not to break when pieces are rolled tightly; 3. When a mass of slices is pressed firmly into a ball, the slices should separate at once when released; 4. Surfaces should be soft and adhere slightly to the fingers.

Other fruits such as peaches, apricots, plums and pears are dried in the same manner as given for the apples.

Directions for Drying Vegetables

Beans and peas lose color in the drying process unless they are blanched before being placed in the dryer. Blanching consists in placing the vegetable in boiling water for a number of minutes and then plunging it into cold water. Prepare the beans or peas as for cooking. Beans should be strung and may be dried whole or broken. Peas should be shelled. Blanch from 2 to 5 minutes and place in the dryer at a temperature of 140 to 160 degrees F. About three hours will be required for drying beans or peas.

Corn should be cooked in boiling water from 8 to 15 minutes to set the milk, then cut from the cob with a thin sharp knife, and dried about 3 hours at 140 to 160 degrees F.

Greens, such as swiss chard and spinach, should be dried when fresh. Wash carefully, pick over and place in the dryer. Keep at a temperature of 140 to 160 degrees F. About three hours are necessary for drying greens.

Vegetables such as carrots and sweet potatoes may be dried. They dry better if cut into small pieces.

Storing Dried Products.

All dried products should be stored in a dry place away from insects and worms. Large tin cans or boxes, paper cartons, and sacks make good containers.

When dried products are to be stored for some time, precaution should be taken to prevent the entrance of insects. Place the dried product in a tight box out of doors, and in it set a saucer containing a small amount of carbon bisulphide; cover the box tightly and let the gas act from 24 to 36 hours.

Cooking Dried Fruits and Vegetables

The palatability of dried fruits depends largely upon the manner in which they are prepared for serving.

Directions for Cooking.—1. Wash the product; 2. Soak several hours or over night to replace the water which has been dried out. 3. Always cook dried products in the water in which they have been soaked, or much food value will be lost; 4. Cook slowly several hours to make a plump, attractive product, and to retain flavor; 5. For fruits use as little water as possible and only a little sugar; 6. If it is fruit which has a flat taste add a little lemon juice or a little cream of tartar; 7. Chopped nuts may be sprinkled in stewed fruit for variety and to increase the food value.

———o———

PROVIDE PLENTY OF GOOD WATER FOR LIVESTOCK

(Continued from page 3)

prived of water for a long period lose their appetite for solid food and vomiting and diarrhea may accur. The latter often takes place when water is again supplied."

Under normal conditions animals consume a fairly uniform quantity of water for each pound of dry matter eaten. Kelliner places the amount at four to six pounds for milch cows, four to five pounds for oxen, two to three pounds for horses and sheep, and for swine seven to eight pounds, which seems excessive. Possibly due to their laxative nature, feeds rich in protein, bran, linseed meal, peas, etc., cause a greater demand for water than starchy feeds. Kelliner found that for each 100 pounds of water drank and in the food, the stabled ox passed 46.3 pounds in the solid excrement, 29.2 in the urine and 24 in the breath and persipiration. Water is an important regulator of the temperature of the animal body. A large amount of heat is absorbed in converting heat water into the vapor given off by the lungs and skin and when sweat evaporates it carries much heat from the body.

The free drinking of water does not diminish the gains of animals nor increase the breaking down of protein in the body, though flushing the intestines with much water may at first cause a more complete removal of the nitrogenous waste therefrom. With animals which continue to drink freely, the nitrogenous waste soon becomes normal again. Scientists now agree that farm animals should have all the water they will drink, for they do not take it in excess unless they are formed to live on watery foods or given salt irregularly. The excess of water taken into the body is discharged through the urine.

There is more danger from impure water in the summer time and during the cold weather. If it is so necessary to provide plenty of pure water more attention should be given to it.

BOARS FOR SALE

BALLAMOAR FARMS

BERKSHIRE JERSEYS

A few choice boar pigs. These are regular Ballamoar Farm's quality and pigs from this farm have made good as many Utah farmers know and buy only the best. Write for prices.

Caine Livestock Co.

RICHMOND UTAH

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Durocs."

FOR SALE

At a bargain one Hart Barr 30-60 tractor, 1915 model, in good working order with gearing new. Horses good as part payment. Apply A. L. Cook, Half Mile West of Lone Rock, 7 Miles West of Tremonton, Utah.

FOR SALE

One pair of Belgain Mares, four years old and weighs fourteen hundred pounds each. Inquire of

D. G. CALDER
R. D. 1, Box 131 Provo, Utah

ALFALFA SEED

Good grade, free from weeds. Price 11½ cents per pound. In lots of 1000 pounds or more, 5% discount. Samples on request. Sow in August and September for best results.

MARCUS SKEEM
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FOR SALE

One six-year-old Iron Gray Shetland Pony with cart and harness, practically new. If taken at once $100.00

M. W. JONES
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Phone Murray 181-W.

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.

FRANK M. DRIGGS, Ogden, Utah.
Phone 108 Ogden, or 8-J Huntsville, Ut.

40 HEAD HEIFERS

ALL HIGH GRADE HOLSTEINS
AND HERD BULL FOR SALE

Coming two and threes, mostly threes. First and second calves. 18 cows now milking. All bred to pure bred bull. Prices $65.00 each head including bull. Selected animals will cost more.

O. L. KITTINGER
Lehi Utah

EAR TAGS PERFECT

Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

RAISE MORE SHEEP ON THE FARM

(Continued from page 1)

drafts, but no special provisions for warmth are required.

Because of the wide differences in climatic conditions under which sheep are raised it is impossible to recommend a particular type of building for universal use. A few fundamental principles, however, should be followed no matter what type of building is to be constructed. In the first place, the site should be dry and well drained. Ample yard space should be available adjacent to the main barn or shed, and it is desirable that this should have a southern slope with sandy soil. If, too, the sheep barn is located conveniently to the farmhouse or to other barns, much time will be saved in the performance of routine labor. This is important because through a part of the year the flock requires attention many times a day.

In planning a barn, it is well to remember that shade and protection from heat are necessary for sheep, and that these can not always be obtained in pastures. The building that is cool in summer, therefore, will often give greater comfort to the animals than they can obtain out of doors. More important requisites, however, are dryness and light. Sheep can not possibly thrive in quarters that are damp or dark. In fact, the flock should be shut in only during storms. One square foot of window to each 20 square feet of floor space is considered necessary. The windows should be placed at a height to insure a good distribution of light and, in particular, of direct sunlight for the lambing pens during the period the ewes are lambing.

The ewes suffer greatly if confined in poorly ventilated pens. It is, therefore necessary to provide some means of securing fresh air without creating drafts. Where the building is very large with numerous doors and windows, it is sometimes advisable to build one or two partitions from floor to ceiling. By opening muslin-screen windows on the side opposite to that from which the wind is blowing, fresh air can be admitted without causing drafts. In very cold sections or where lambs are to arrive in the winter months, specially arranged outlets of foul air and inlets of fresh air will be necessary.

Level and well-drained clay-surfaced floors are cheap and satisfactory, the only objection to them being that they do not exclude rats. For alleys and feed rooms concrete floors are required.

———o———

One day, many years ago, the telephone in the office of the chief of police rang. Chief Speers answered. The call was from a new policeman on the Union Avenue beat. He said:

"A mon has been robbed down here, and I've got one of thim!"

"Which one have you?" asked the chief.

The reply came back: "The mon that was robbed!"

———o———

REDUCE RATES TO SALT LAKE CITY

August 18th to 24th. Via Salt Lake Route on Certificate Plan.

Account Intermountain Christian Workers Institute Third Annual Meeting, reduced rates will be in effect from all stations on Salt Lake Route, on above dates, to Salt Lake City. Tickets will be good for return trip August 22nd to 31st.

See agents Salt Lake Route for tickets and particulars.

———o———

Send your orders for Butter Wrappers today to the Utah Farmer.

An Opportunity

Too Much Land!
Too Many Cows!
Too Little Time!
Too Little Help!

These are Conditions prompting the Sale of

Forty Head Registered Jersey Cows

Modern Barn, Modern Milk House, Complete Equipment and

Two Hundred Ninety Acres

of Land Adjoining the Limits of Ogden City.

An Ideal Dairy Farm. An Ideal Market.

For further information, apply to

Thomas B. Farr, Cashier Commercial National Bank, Smithfield, Utah.

Joseph R. Morrell, M. D., Eccles Building, Ogden, Utah.

David O. McKay, No. 676 21st., Ogden, Utah.

Fits Your Farm

Does All Farm Work Without Horses

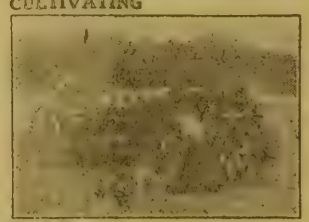
See for yourself how well the Moline Universal Two-Wheel Tractor FITS YOUR FARM. It *cultivates* as well as plows. It works on plowed ground without packing the soil. It is as easy to handle as a team of horses. It gets close into the fence corners, turns short and backs with tools attached. It is a real one-man tractor. You ride on the tool where you can see the work you are doing. You don't have to have someone run the tractor while you operate the farm implement, and finally, it DOES ALL FARM WORK WITHOUT HORSES.

Costs Less Than 4 Horses Does the Work of 7 Horses

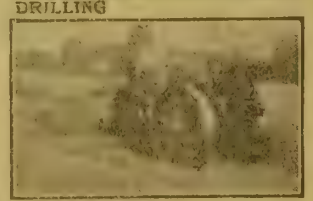
With all the advantages named above the Moline Universal Two-Wheel Tractor is also low in first cost and very inexpensive to operate. It costs you less than 4 good horses. When it comes to pulling it has the power of 5 horses and because it travels faster and never tires, it will actually do the work of 7 horses.

MOLINE ORIGINAL 2 WHEEL TRACTOR **UNIVERSAL TRACTOR**

CULTIVATING



DRILLING



HARVESTING

will do anything you can do with horses and do it quicker, easier, better and with less hired help. Because all its weight is on two wheels — it has no dead weight to carry. All its weight is traction weight. It throws all of its weight into the pull. The tool you hitch it to forms the rear wheels. This gives two big advantages. FIRST: It does away with almost a ton of needless weight—which tractors of the 3 and 4 wheel types require. SECOND: It enables the operator to ride the tool instead of the Tractor. In this way you can watch the work closely. You can turn short, get closer into fence corners than you can with a team and back with tools attached.

If you have an average farm of from 80 to 300 acres you will find this one-man, two-wheel, all-purpose tractor ideally fitted for your work. Don't buy any tractor until you have investigated the Moline Universal. Write for new Catalog Folder and read how this tractor is solving the hired help and power problems on other farms like yours. Write today.

MOLINE PLOW CO. Dept. 33 Moline, Ill.

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The Moline Line
Includes:
Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Reapers, Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons, also
STEPHENS SIX AUTOMOBILES

MOLINE PLOW CO., Dept. 33 Moline, Illinois

Gentlemen:—
I am interested in finding out how the Moline Universal Two-Wheel Tractor will fit my farm.

I work.....acres. The land is..... (level, rolling, hilly.)

The soil is.....

Name.....

P. O...... *State*.....

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 2-3 LEHI AND SALT LAKE CITY, UTAH AUGUST 11-18, 1917

The Small Farm Should Have A Silo

H. O. Porter.

The value of silage is now universally recognized, and no farm should be without one or more silos. The silo affords the easiest and cheapest method of supplying feed for most all classes of farm animals.

With the silo two to three times as many animals can be kept on the same land as there could be kept by pasturing, for one acre of corn in the silo is equal to at least two in the crib.

Silage keeps young stock thrifty and growing all winter. It produces beef more cheaply than does dry feed. It enables cows to produce milk more economically.

Silage is more conveniently handled than dry fodder. It occupies only about one-tenth as much storage space and costs about one-half as much to harvest. (The cost of filling the silo is from 50 cents to $1.50 per ton.)

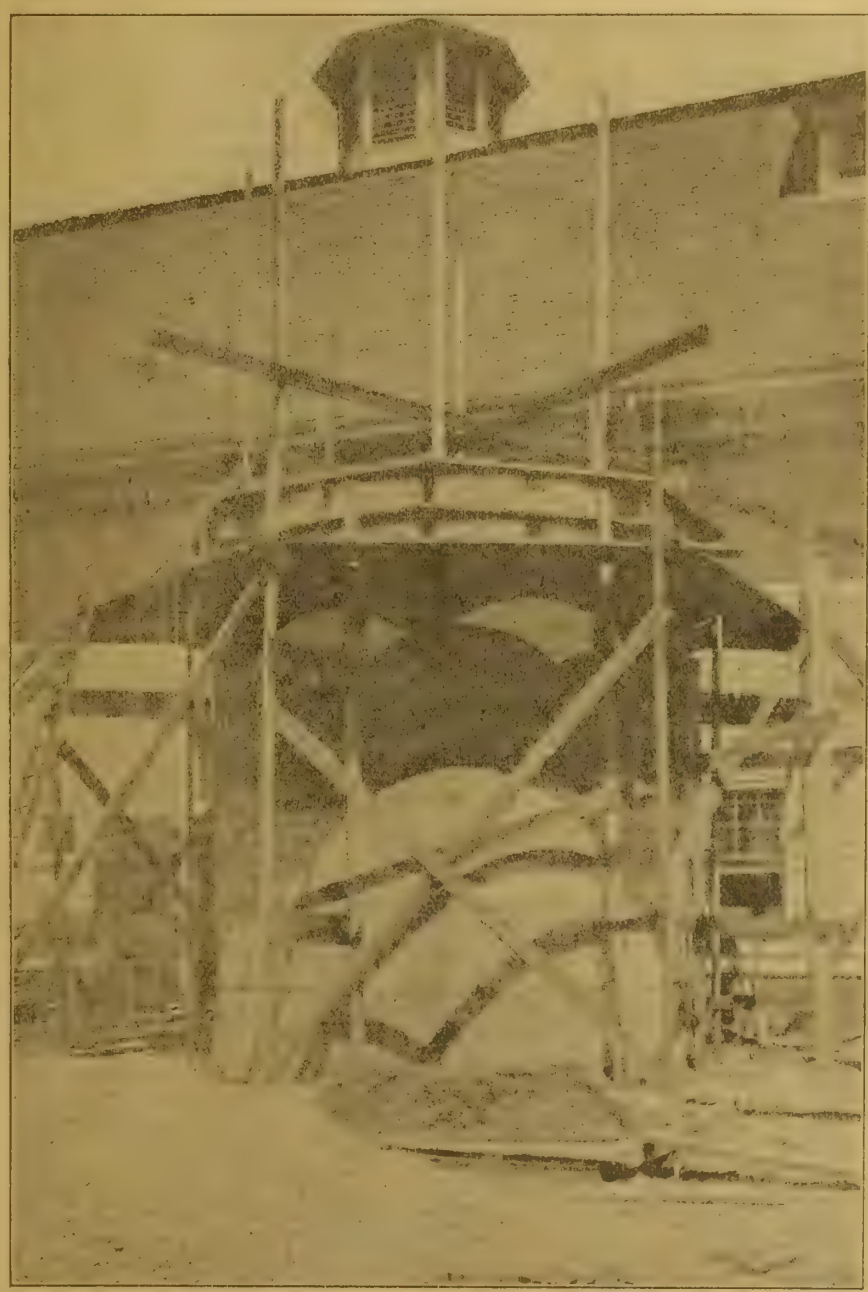
The silo prevents the waste of corn stalks, which contain about 40 per cent of the feed value of the entire plant.

There are no aggravating corn stalks in the manure or in the way of the plow when silage is fed. The silo will make palatable feed of stuff that would not otherwise be eaten. It enables the farmer to preserve feeds which mature at a rainy time when curing for hay would be almost impossible. Crops which are injured by drouth make fairly good feed if cut and put in the silo, which otherwise would be practically wasted. It is the most economical method of supplying feed for the stock during the hot, dry periods in summer when pasture is short.

A few years ago a great many silos were built too large in diameter for the number of animals fed to use enough off each day to prevent a great deal of waste. At least one inch should be removed each day in cold weather and more must be used if the weather is warm. A little later the small, tall silo was recommended which proved to be more of a success, and now it is hard to find a farm in some communities where there is not one or more silos.

The requisite for a modern silo are: Rigid, air-tight walls with a smooth surface and with a depth of at least twice the diameter. These are the essentials to remember.

Some people seem to think they cannot afford to build a silo unless they have a large herd of cattle, but with eight or more head of cattle the silo certainly will pay on the small farm where one wants to get the most feed or food from an acre of land.



Building a silo. This is partly done. Notice the scaffold, the pulley and rope for raising the concrete. A batch of concrete is ready to be put in the forms.

When we built our first silo we had only six or eight cows and very little pasture. It was made of common 2x4's 24 feet high and 10 feet in diameter. We filled it in September, using about 14 acres of corn, this being a dry year. We began feeding as soon as it was filled and fed it out by the first of April. Two years later we built another the same size.

In the early summer of 1912 a windstorm blew down our stave silos, so we took the best staves of the two and moved over to the other farm and built one out of them. Then we built a concrete block silo 12x30 feet and we expect to extend it 12 or 15 feet higher this summer. When complete it will hold a little over 100 tons. With only 25 acres of cultivatable land and no pasture we have to depend almost entirely upon the silo to furnish succulent feed for 25 head of dairy catttle. By filling it at intervals from June until October 15 it will furnish silage the entire year. Much has been said about silage not keeping well in concrete silos, but we have had no more loss from this one than from the best wooden stave silo.

What kind of a silo is best is a question often asked. My answer would be, the kind you like best or can afford to build, as any kind or make of silo is good, and you can't afford to be without one.

I like the concrete silo because it is permanent, it is substantial, no danger of blowing over, no hops to keep tight when empty, it keeps the silage perfectly, and it adds to the appearance of the farm buildings.

Concrete, stave or block silos have proven very good and many of them are in use. The cost of building a silo will depend upon the cost of material on your farm. If you build a monolithic silo the cost would depend on how far you have to haul the gravel and cost of cement at your town. The cost of a concrete stave silo varies a little according to the freight cost. Wooden silos when properly built may not cost so much at first but will they last so long? In the past most of the silos have been built of wood. It is not so much which kind of a silo you build as it is that you build a silo. There should be a silo on every farm.

Plan and Prepare Now to Increase Your Farm Products For 1918

SUGAR BEETS

CULTIVATION AND IRRIGATION OF THE SUGAR BEETS

By Clifford Austin, Provo, Utah.

Beet land should be plowed in the fall from ten to fourteen inches in depth, which gives the beet a better chance to grow longer and larger and makes it easier to send its roots down into the moisture. The land should be worked down as fine as possible in the spring to give the beets a good seed bed. The beets should be cultivated just as soon as one can see the rows or just before thinning time. There are three reasons for good cultivation. (1) It helps to retain the moisture, (2) It loosens the soil around the beet and makes them grow faster, (3) It kills a great many weeds.

The first cultivation should not be too deep as it will cover up many of the small beets. The second and third cultivation should be as deep as possible, the deeper the better, as it gives the beets a chance to send their roots out into the soil, which they could not do if the ground is not loosened up.

These cultivations should be given after the beets are thinned and started to grow well, one about two weeks after the other. After the beets have become a good size, they should not be cultivated too deep. As one is apt to cut off and injure some of the roots; this will retard their growth. They should be cultivated as soon as it is possible to get on the land after irrigation.

Two or three good hoeings during the summer would help a great deal in the destruction of weeds, and help maintain the moisture around the beet, which is very essential.

The proper use of irriagtion water is one of the most important factors in growing sugar beets. There are three important things one must consider. The time, the application and the quantity of water used. In some localities where there is little winter precipitation it is necessary to irrigate beets up. But it is more satisfactory to irrigate before the seed is planted. Beets should not be irrigated until they are absolutely in need of water.

The object in withholding the water as long as possible is to produce long roots since long roots are essential for a good tonnage.

Beets should never be irrigated by the flooding method, but should be watered in furrows between the rows. Flooding is likely to scald the beet and to form a crust over the surface of the ground, cutting off the air supply and retarding the growth of the beet.

I have in mind two farmers: one cultivated very often and irrigated twice during the summer. His average was eighteen tons per acre. The other irrigated about every ten days and cultivated two or three times during the summer. His average was ten tons per acre. The soil on both farms was the same.

Most farmers must learn to cultivate more and irrigate less.

ROTATION OF CROPS NECESSARY FOR SUCCESSFUL FARMING

The yield of sugar beets and the price that is received for them is the direct returns and the item of chief concern to the grower but there are collateral values that must not be overlooked.

The writer has studied other crops along with the beet crop in different districts and in many states and our more recent trips indicate very clearly that the increased yield of wheat this year on the irrigated farms of the beet growing districts will be directly traceable to the beet crop of last season.

Almost without exception, where an unusually fine wheat crop was about ready for the harvester, it was found to be following a crop of beets last year. Sometimes, alongside would be a wheat field following other crops but there was not the uniformly well filled heads, uniform straw,—not straw fallen, as was the case where wheat followed some other crops or where manure had been applid injudiciously, the stand was more uniform and the yield will show an average of 15% to 25% higher than wheat following other crops.

In one particular community, we find the farmers talking very enthusiastically about their wheat crop for next year. Some had planned to cut down the beet acreage and substitute wheat. It should be remembered that to follow the same fields with wheat next year is liable to bring disappointing results. The value of short rotations have been clearly brought out this season. Wheat following wheat, in most instances, spells disappointment.

Wheat is greatly needed in this war period and this season has emphasized the importance of keeping wheat in our rotation on the irrigated farms rather than to depend entirely upon the dry farms.

It is bad practice to not have crops so planned that the farm labor is distributed throughout the busy season and a proper variety of crops very greatly aids in solving the short labor problem. The farm chiefly devoted to alfalfa is just as lopsided as the farm that is chiefly devoted to sugar beets or to wheat or to potatoes. In practically every community, there are three or four crops that have demonstrated their value in a crop rotation and the farmer that ignores this rotation is inviting loss through decreased yields, insect pests, disease, lack of labor through limited season employment and a general decline in the physical condition of the soil. This last named condition is just as essential as is the maintenance of the elements of soil fertility. In fact, soil fertility and the physical condition of the soil must be considered as one problem as it is not easy to separate the essential factors and succeed in one direction if the other is ignored.

Sugar beets have other collateral values such as providing a valuable amount of feed through a proper use of the tops and crowns, beet pulp, and molasses which are available to most growers.

Let us suggest at this time that a more careful study be made, of the value of beets in crop rotation, comparing the wheat fields that follow beets and the wheat fields that follow other crops. Sharpen your pencil and figure the results.

HOLE IN GERMANY'S POCKET

"Germany's claim that she imports nothing, buys only of herself, and so is growing rich from the war, is a dreadful fallacy."

The speaker was Herbert C. Hoover, chairman of the American Food Board.

"Germany," he went on, "is like the young man who wisely thought he'd grow his own garden-stuff. This young man had been digging for about an hour when his spade turned up a quarter. Ten minutes later he found another quarter. Then he found a dime. Then he found a quarter again.

"'By gosh,' he said, 'I've struck a silver-mine,' and, straightening up, he felt something cold slide down his leg. Another quarter lay at his feet. He grasped the truth: There was a hole in his pocket."—Washington Star.

WELL QUALIFIED

A judge presiding over a court in Washington was administering the oath to a boy of tender years, and to him put the following question:

"Have you ever taken the oath; do you know how to swear, my boy?

Whereupon the lad responded: "Yes sir. I am your caddie at the Chevy Chase Club."—Puck.

Agricultural College of Utah

Logan, Utah

Agriculture—The food supply of the nation has become a question of prime importance. Upon the proper husbanding of it depends ultimately the power and the future of the nation. Science holds the keys. Trained agriculturists are needed to unlock the treasure vaults of the earth.

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These Courses of Instruction are Open to You at the Utah Agricultural College.

Regular entrance to Baccalaureate courses prescribe high school education, but

Those 18 years of age or over who have had no high school work are eligible to enter without examination any courses which they can profitably carry.

Fall term open September 10, 1917.

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VOLUME XIV. LEHI, UTAH, SATURDAY, AUGUST 11-18, 1917 No. 2-3

Will Share Its Profits With The Farmers

The Utah-Idaho Sugar Co. Offer a New Contract for 1918

Beet growers will be interested in the new plan of the Utah-Idaho Sugar Co., in which they will share with the manufacturers the profits that comes from the sale of sugar. At their regular monthly meeting the directors considered the question of contracts with the farmers for the beet supply of 1918.

Action on this important question was taken early, before the present harvest so that farmers can plan and prepare their land for next year crops.

With the present prices of wheat and other farm products a proper ajustment of crop rotation will be necessary. Just what proportion of the land would be prepared for sugar beets would depend upon the 1918 prices, so the sugar company felt that the present was the time to lay before the farmers a proposition which it was deemed would fully meet their wishes, and once and for all settle the agitation over beet prices which attends the opening of each contract season. The company was further impelled to take a step that marked a new departure in the relations between the beet grower and the manufacturer, for the reason that the authorities in Washington have redoubled their appeals for a greater supply of sugar for 1918 than ever before in the history of the sugar industry.

It is a new plan that the sugar company offer the farmers but one that they have been asking for—the shareing of profits.

The New Plan.

"The new plan, adopted by unanimous vote of the board briefly is that the sugar company will divide its profits with the farmers on the following basis: First, contracts for beets during 1918 will be made on the basis of $7.00 per ton as at the presents, the beets to contain 15 per cent sugar. This issures the farmer of a good profit, regardless of any other consideration, as the average cost of production is about $4.50 per ton of beets, leaving the growers a profit of $2.50 per ton on an average crop.

Second, the sugar company will retain a profit of one dollar per hundred pounds of sugar, and all other profits above that figure will be equally divided between the farmers and the company.

The farmers are to be allowed to name their own expert representative or representatives, to examine the sugar company's books to satisfy themselves as to the cost of production, operation and all other questions in which they may be interested and the sugar company will pay for the experts' expenses.

The new plan will work out in this manner: The farmer will deliver his beets as hitherto, and receive payment at $7 per ton as usual. At the end of the season's operations, the absolute cost of producing sugar, and the price for which it is sold, will be ascertained. If this cost, for instance, averages $4.50 per hundred, and the average net price received is $6.50 per hundred, the profit would be $2 per hundred; deducting $1 per hundred for the sugar company, $1 per hundred would remain, of which the farmers would receive 50 cents and the sugar company 50 cents, meaning that the farmer would receive at least $1.25 per ton additional (or $8.25) for his beets, based on each ton of beets yielding 250 pounds of sugar. If the cost is $4.50 per hundred and the selling price $7, the profit after deducting $1, would be $1.50 per ton or 75 cents to the company meaning an added $1.87½ per ton of beets or $8.87½ per ton, and so on up and down the scale, as cost and selling prices might vary."

Last year the farmers wanted a contract so that a division of the profits would be made, but conditions could not be worked out and the flat rate of $7.00 was accepted.

Since the announcement of the new plan was given out we have talked with a number of farmers and every one of them think that it is a very fair proposition on the part of the sugar company and for the beet grower. Several of the beet growers say they will increase their sugar beet acreage for 1918.

It will be to the interest of the growers to co-operate with the sugar company and work the factories to capacity, in so doing the cost of production will be reduced to a minimum, and in this way, the farmer will get more for his beets.

The larger the beet tonnage at any factory, the lower the cost of production, because the general overhead expenses are the same if production is small or large. Government and State officials interested in agricultural work were consulted before the plan was given out and we understand it has their endorsement as being fair and just in every way.

The principal of co-operation in this new plan and allowing both the growers and the manufacturers of sugar a fair profit, and then dividing equally must apply to all as a fair and reasonable way to do.

The sugar beet business has done much to help provide a cash market for the farmers products. The sugar manufacturers could not get along without the beets and farmers need this great industry to furnish a cash market for his crops. Each is indispensable to the other for the benefit of the community.

In many localities there are hundreds of acres of land that should be made more productive—they need to be drained and fertilized. We believe the sugar companies will co-operate with the farmers in furnishing the money to drain this land in order to increase the beet acreage. Right now is the time to start and plan for next years crops.

Proper preparation of the land for next year is very important if the maximum crop of beets is to be produced.

If you are going to plant wheat land into beets, thoroughly cut the stubble to pieces with a dish harrow at once, then water and plow it at the earliest possible moment. This will give it a partial summer fallow and will increase the tonnage possibly two or three tons per acre. By watering the ground in a few days of this hot weather, the weeds will start growing and any loose grain that may be on the ground, will grow, and all this can be plowed under which will help the ground and clean it at the same time.

In some sections it is not to late to plow under the second crop of alfalfa for the fertilizing and preparing of the ground for next years beet crop. There must be moisture and heat in order to decay the green alfalfa and roots where the nights are getting cold this will not work successfully. A rotation of crops is most important if you want to get the best results.

We feel sure that the new plan of the Utah-Idaho Sugar Co. in offering to share their profits with the farmer will help to increase their beet acreage next year. Because of the profit sharing plan the farmer will be more interested in the sugar industry.

Now is the time to conserve the crops you have produced in the "War gardens."

Save and Store the Food

Utah has now reached the most critical stage in the development of its food campaign. We must save what has been so bounteously produced. With a crop average ranking above any other state proportionately in the union, our responsibility is correspondingly greater.

Through the various means of drying, canning, preserving and storing we must save that portion of our harvest which is not capable of immediate sale in the fresh stage. Every town in Utah which has not already done so should at once consider the advisability of establishing municipal canners, evaporators and storage facilities to handle the surplus fruits and vegetables. Patronize the local canning and evaporating plants to their capacity. The housewives of the State are doing more than their share of the work. Cities, wards and counties should help.

There are county agricultural agents in most of the counties of the state. Call upon them for advice and assistance in the methods of construction and operation involved in drying, canning and storing.

It cannot be too strongly emphasized that it will require difficult and sustained endeavor to prevent a large portion of our crops being wasted. County and city leadership in the next few weeks means a vast saving in food, which, if conditions continue as at present, means a vast saving of life.

RIGHT NOW IS THE TIME TO ACT.

DAIRYING

MANAGEMENT OF NEW COWS

Cows form strong attachments for the farm where they were raised and it will frequently require several weeks for them to get acquainted with the new order of things and settle down to normal production. If the cow is purchased at a public sale the chances are that a large amount of milk has accumulated in her udder in order to give it a deceiving appearance. In such cases the first thing to do is to draw some milk from it. If there is a calf with the cow it may be allowed to nurse, but as it has probably not nursed for some time, it is well to limit the amount of milk it gets the first time. After looking after the cow's udder and feeding the calf, the next thing is to get the cow home with as little excitement as possible, especially if the weather is cold and stormy. The less exposure cows, especially newly calved cows, have the better. If one has a horse and wagon put the calf in a crate in the rear of the wagon where the cow can see it and she will be apt to follow and give the man who is leading her but little trouble. In leading her to your home do not hurry for cows should never be over-driven.

Directly after arriving home put her in a warm, comfortable stall, tie her calf where she can see it, and feed her a warm bran mash, and a feed of good hay, and after examning her udder to see that no milk is left in it leave her alone as much as possible. It is always better to put her in a stall away from the other cows until she becomes accustomed to her new surroundings. After which she may be put in the stall that she is intended to occupy permanently. When turning her out to exercise and drink, turn out a few of the peaceable members of the herd with her and persuade, rather than force her to go directly to her own stall when the cows come into the stable. After she has been out and in a few times she will know exactly where to go. If the cows are out to pasture when the new cow is brought to the farm it will be better to keep her in the barn the first two or three days until she becomes acquainted with her new surroundings. Every new cow has an individuality of her own and this individuality should be studied by her new owner in order that she may be properly fed and cared for. If she is nervous amid her new surroundings it is wise to treat her kindly until she gets thoroughly settled down. If one knows just how she has been fed up to the time she is purchased, and if the same rations are fed for a few days after he buys her, she will settle down all the more quickly. After that her rations may be changed gradually to conform to the system of feeding practiced on his farm. Attention to these little details and studying the peculiarities of the new cows means that more milk will be produced to her new home milk will be produced as soon as she becomes accustomed to her new home

After a week or ten days her grain ration may be increased one-half a pound every other day until she no longer responds to the increased rations profitably. Study her likes and dislikes and if she fails to produce a profitable flow of milk after feeding her good rations sell her with as little delay as possible. If she gives a satisfactory flow of milk and is otherwise fit to stay in the herd treat her accordingly. As a rule it is always better to buy a young cow, for the older the cow the shorter is the period of profitable production that is left to her.

Many times a cow that has developed undesirable habits may be broken of them by proper treatment when placed under new conditions and among new companions. Nothing but patience and kind treatment will cure a cow of kicking or stepping about while being milked, but many a cow is made a confirmed kicker by being handled roughly by a new owner and his hired help.—Montana Farmer.

GOOD RESULTS COME FROM PROPER BREEDING

E. H. Janett.

By carefully studying your animals and using only the best pure bred bulls good results will come to your dairy herd.

The farm and especially the dairy farm if it is to be made a success must be operated on the same basis as our factories. In fact the farm is a factory and every animal on it a machine placed there for the purpose of making a substantial profit over and above the cost of maintenance and labor. As in the manufacturers plant the machines on the farm should be put to a rigid test and if they fall below a certain standard they should be disposed of at once and replaced with those having greater efficiency.

The successful beef raiser is the man who has studied the conditions of the feed lot thoroughly. He is the man who feeds the animal best fitted for the economical manufacture of beef. The hogs which are a source of profit to their owners are those highly bred animals that are especially adapted for pork production. Likewise the dairy cow if she is to be a profit maker must be a special purpose animal bred for the specific purpose of converting the grains and grasses of the farm into the finished products of milk and butterfat at a minimum cost.

Why is it that the average production of the so-called dairy cow is so low and that two-thirds of the milk cows in the west are kept at a loss? The only answer is that they are the wrong kind of machine for the place they are supposed to fill. Of course, the present type of dairy cow cannot be abolished at once. It would be foolish, indeed, to advocate that all the cows milked on the average farm should be disposed of an others secured to take their places. This great change from unprofitable cows must take place gradually and in a manner that will involve the smallest expense.

The only logical method of securing better dairy cattle is through the purebred sire. The cow should be subjected to a fair test and all those producing a profit kept on the farm as the foundation for the future dairy herd. These cows should be bred to a purebred sire chosen from one of the milking breeds. When the first cross calves arrive they will have 50 per cent of the cow's blood and if he is a good individual the daughters should be greater producers than their mothers. The first generation should again be crossed with purebred blood of the same breed thus making the resulting calves 75 per cent purebred. By following this system of breeding and by careful selection the average herd can be built up at a remarkable rate.

ASCERTAINING THE QUALITIES OF A GOOD COW

By W. H. Underwood.

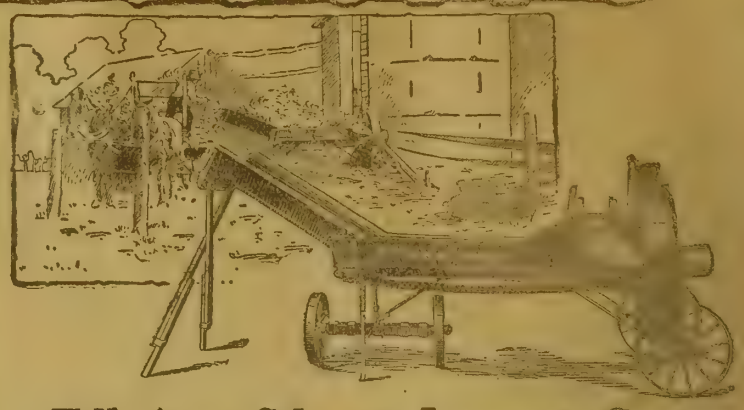
The regular use of the scales and the Babcock test is an indispensable part of the labor of the modern, progressive, successful dairyman. Still there are many occasions when it is desirable or necessary to form some indicate the capacity of a dairy cow. where the information given by the scales and Babcock test is lacking.

There are certain characteristics of form which more or less certainly indicate the capacity of a dairy cow. Many become so skilled in recognizing these characteristics that they are able to separate good from poor cows of a high degree. A knowledge of these characteristics is indispensable to a skillful dairyman.

It is generally recognized that a dairy cow should be wedge-shaped, that is, the skeleton of the hinder portion of the body should be distinctly more largely developed than those of the forward portions. She should stand from half an inch to an inch and a half higher at the hips than at the shoulders. The width as viewed from the front should be distinctly wider behind than before and the depth of the body as viewed from the side should be distinctly greater behind than before.

To be able to produce large quantities of milk the cows must also have vigorous powers of respiration and circulation. Since milk is formed by the blood, vigorous circulation is required to carry the blood in large quantities to the udder and particularly to the minute capillaries. Vigorous powers of respiration are necessary to purify the large amount of blood which must pass through the lungs. Vigor of respiration is indicated by a large, deep, full chest and by large, clean open air passages, particularly the nostrils and throat. Vigor of circulation is indicated by prominent exterior blood vessels and by a bright pink complexion of the thinner portions of the skin and visible mucous membranes.

To secrete large amounts of milk a cow must digest and assimilate large quantities of food. She must therefore have large powers of digestion, assimilation and secretion. Capacity to digest is indicated to a certain extent by the size of the digestive organs since a large part of the cow's food is bulky and she must have capacity to take in large amounts of food. Vigor of assimilation and secretion is seen in the



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International Ensilage Cutters fill silos at the lowest power cost. Every feature of these cutters, the knives and blowers on the same flywheel, the carefully machined bearings, the complete oiling system, the absence of all unnecessary gears and sprockets, the steady feed arrangements, the fine adjustments that can be made, all tend to make them easy running, and economical of power. A 4 to 6-H. P. Mogul kerosene engine will run a type F cutter up to its full capacity of 6 tons per hour, and the largest International cutter, a type A, requires only 25 Mogul kerosene H. P. to handle its heaviest loads.

When you buy an **International Ensilage Cutter,** of any size or type, you get a complete machine that will do the work it was built for at the lowest cost, with safety to the operator, and in a satisfactory manner. Our catalogues tell all about the many good features of these machines. A line to the address below will bring you full information promptly.

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Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

EXCURSION RATES TO SALT LAKE CITY — ACCOUNT NATIONAL WOOL GROWERS ASS'N. VIA SALT LAKE ROUTE

Excursion tickets will be on sale from all Utah stations August 27-28-29th to Salt Lake City, account National Wool Growers Association. Tickets will be good returning until September 1st. Ask Salt Lake Route agents for particulars.

Total resources of this bank have increased a quarter of a million dollars during the last few months.

They are now over $9,000,000. This increase means just that much greater ability to serve you.

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SALT LAKE CITY

abundance and healthy condition of the hair and the softness and pliability of the skin and the abundance of secretion from it.

More useful than any other outward characteristics of the cow, as indicating her capacity to secrete, is the size and condition of the udder. Naturally, a useful cow must have a large udder and from the aesthetic point of view the more regular in form it is the better. The actual size and capacity of the udder, howeer, may not be indicated by its apparent size. In some animals the udder is held so close to the walls of the abdomen and so great a part of it is hidden between the legs that it may appear smaller than an udder of the same or even smaller size that is more pendulous.

So, too, in ascertaining the quality of an udder its so-called fleshiness must be taken into consideration, that is, in some udders the connective and fatty tissue is so much more abundant that it occupies room that would otherwise be occupied by true milk secreting follicles. Such an udder will be tense and firm, especially when empty, and will have little secreting capacity in comparison with its size.

A so-called fleshy udder is approximately the same size when empty as when full. A udder in which the greater part of the tissue is made up of milk ducts and secreting follicles will shrink rapidly as the milk is drawn from it and when empty will be particularly loose, pliable and flabby.

In the cow, as in the bull, there are many so-called "milk signs" that are relied upon, more or less, implicitly by various people in ascertaining the qualities of cows. Foremost among these are the milk veins. These milk veins never, by any possibility, contain milk, but form a system of exterior veins on the lower part of the abdomen that serve to convey a part of the blood from the udder back toward the heart.

The milk veins vary in size, in length, in sinuousness and in simplicity or multiplicity of branches. In so much as their size indicates, to a certain extent, the amount of blood circulating in them they may be considered as useful signs. The larger the evins, naturally, the larger the amount of blood flowing through them. A cow with a large, elastic, tortuous and branching milk vein is likely to be a better cow than one less well developed in this respect. The milk veins cannot, however, be relied upon implicitly as indicating the capacity of an animal to produce.

SAVE THE CALVES?

"Save all the calves and grow them into beeves" is the message that is reported to have gone out from several of the agricultural colleges and experiment stations recently. There is, of course, a world shortage of meat as well as other foodstuffs, but is it wisdom to advocate the keeping of all calves until they are mature, even at such a time as this? For several years the leaders in agricultural thought have been instructing and encouraging farmers to select their breeding animals carefully—to grow only that type of beef animal, for instance, that will produce beef most economically. Some calves are of such type and conformation that they can not be turned into profitable slaughtering animals, even with the present high prices of meat, for feeds and labor are likewise high, and unless the calf is of a beefy type it may not pay to raise it for that purpose. If its parentage indicates that a calf should develop a good carcass it should be raised for beef; otherwise not. A more sensible thing to do to increase meat supplies would be to promote growing and feeding more hogs. They can be marketed in a few months; are more profitable in the Corn Belt than cattle, as consumers of corn, and furnish meat that can be more readily handled for army purposes as well as for domestic use. There will be a demand for all the food products the farmer can grow this season and likely for some time to come. And there will be profit also in the most of them. But the best and safest course to follow in increasing the food supply is that justified by past experience, practice and economy.

CALVING OF DAIRY COWS

By C. H. Eckles, Missouri Agricultural Experiment Station.

Many of the most thoughtful breeders are asking agricultural experiment stations if it is possible to follow any method of feeding and management of dairy heifers that will make it more certain that the heifers will be good producers. It is another application of the question as to the relative importance of heredity and environment. Does a good dairy cow or an inferior one derive her special treatment from birth to maturity? Is a good dairy cow born that way, or made what she is by her owner?

It is a well-known fact that there is considerable difference in practice among cattlemen in regard to the feeding and handling of dairy heifers. We find radically different views on some points. Some hold that a cow should be fresh at a very early age to insure the best development of the milking functions. Others take a directly opposite view and prefer a cow to be quite well matured and state that only in such animals are the milk-producing functions the most highly developed. Some who raise dairy cattle feed their calves only bulky feed and in rather scant quantities. Others feed largely with grain and grow them as rapidly as possible. Some hold that if a heifer of a dairy breed is allowed to get fat when young she develops a tendency to use her food for body fat all her life rather than to produce milk. Others hold that the dairy qualities of a cow are not influenced in any way by the method of feeding when young and that no harm comes from a heifer being fat. Some desire to develop the largest animals possible for the breed. Others prefer cows medium-sized or small for the breed.

There must be some general law or laws in regard to these points that can be found by experimental work. Apparently there are a number of questions along this line which cannot be answered definitely as a result of common observations or there would not be this wide difference of opinion. Having these facts in mind, the Missouri Agricultural Experiment Station in 1906 undertook an investigation for the purpose of determining, if possible, some of the principles upon which practical methods of raising dairy cows should be based. It was thought by raising dairy heifers in the University of Missouri herd under different conditions and keeping full records from birth until the cow had been in milk two years it would be possible to come to some more definite conclusion regarding the possible influence of the treatment when young upon the future usefulness of the animal for dairy purposes.

The general conclusion from the work of the Missouri Agricultural Experiment Station investigation is that it is possible to influence the rate of growth, size when mature, and type to some extent, by the liberality of the ration during the growing period, and the age at first calving. With in limits of variation, even far beyond the normal, the character of the ration with reference to amount of nutrients supplied does not exert any appreciable effect upon the making functions of the cow when mature.

THE BULL THAT PAYS

There is probably no factor associated with the cattle business that cuts more figure with profit or loss than this one item, the herd bull. It matters not whether you are breeding beef cattle or dairy cattle, whether pure-bred cattle or grade cattle, you cannot afford to be cheap or careless in providing the bull for your herd. The work of one generation of cattle means putting you forward or putting you back. It is a good idea for the owner of a herd of breeding cows to make a careful survey of the herd individually and note the deficiencies and objections in each animal, then measure up the choice cows with the least desirable ones and see if this discrepancy is not too much to attempt to correct in the breeding. Would it not be best to cull out a few tail-enders and replace them with better cows?

It takes three years to get the produce of one of these cows up to breeding age, and then you cannot hope to have a heifer that you like; the tendency of such produce is to be below the average. The herd bull must be a very good animal, of strong breeding character, with inherent good qualities, if his produce comes with uniform style and type. Study carefully in buying the herd bull. Preferably, take one that you see and know that his breeding is satisfactory. Some persons are prejudiced against a tried bull, a bull of age. This is no fault when he proves to you what his get are like.

The price is always what stands in the way of the buyer getting the best. If bulls all sold at so much per head, the same price, take your choice, I guarantee that the best bulls would all go out with the first applicants. If the price was at all reasonable. It is the difference in price of the bulls that keeps so many herds poor. The $100 bull is bought and the $200 bull is left. The bull buyer sees nothing but the $100 difference, and he tries to make himself think there is not much difference in quality. "Anyway, they are sired by the same bull, and the $100 bull probably will breed just as good calves as the $200 bull, and I have saved $100."

Remember it is individuality that you are striving for in your herd, and with this uniformity, a correctness of type that all breeders admire. You cannot get this in the bull unless you buy it and pay for it. The sooner you get such notions out of your head the safer will be the ground you stand on. Buy a little better bull than you intended to—a poor bull is dear at any price—then take good care of him, feed him well and grow him into a vigorous animal, and you will not regret it.

KEEP THE CALVES GROWING

There is little profit in keeping or feeding animals that have been stunted in the growing period. Dairy calves should be kept in thrifty condition from birth, for an early check in growth is rarely overcome later. Probably the most prevalent cause of stunting is common scours. This disease can be successfully combated if reasonable precautions are taken. It is brought on by use of dirty pails, overfeeding, feeding milk that is partly spoiled or sour, or feeding milk at different temperatures. Milk should be fed sweet at about blood temperature. The feed pail should be washed clean and scalded with hot water or steam to kill bacteria. Feed 10 pounds of milk for the first 100 pounds of body weight, 5 pounds for the second 100 pounds, and 2½ pounds for the third 100 pounds.

PREVENTING SPOILED SILAGE

Each year for three years after building his silo, one Ida county (Iowa) farmer opened it only to find the silage spoiled.

The agricultural engineering man from the state college called on him and looked over the silo. "It ought to make good silage," he said, after his inspection.

At the owner's request, the expert made arrangements to return at filling time, and watch the filling. He arrived just at the beginning of operations. Here he found the reason for the failures.

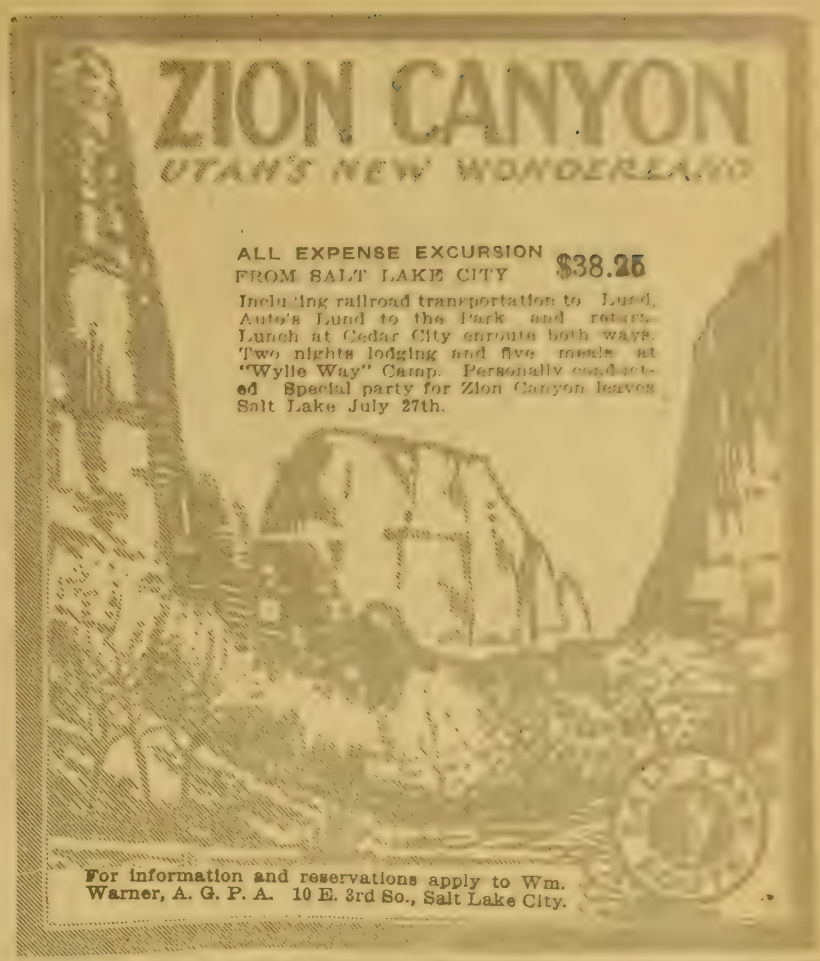
In the first place, only two men had been working inside. Two more were put to work, tramping and spreading the silage.

Next, the ensilage cutter which had been set to cut 1½-inch pieces, was changed to cut the stalks into lengths of about ½ inch, making it possible to pack the smaller pieces better, and avoid air spaces.

Although the corn was apparently somewhat dry, no water had been added. The expert suggested that a steady stream of water from an ordinary garden hose be kept running into the blower.

With these changes in effect, the silo was filled and, in spite of the soft corn of 1915, the silage kept well. Last winter, too, the feed was in perfect condition.—Deane G. Carter.

See that the cellar or pit is ready for storing winter vegetables; as, potatoes, carrots, and squash.



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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Mow the weeds and burn them. Do not let any go to seed. Weedy fence corners should not be found on any farms.

Are you ready to build your silo? Whether you build of wood, staves or cement—build a silo and help reduce the feed bill so we can produce more livestock.

Care and attention given any kind of livestock will pay and pay well. Animal life respond very quickly to proper care—they soon show the lack of it.

Order the extra parts for harvesting machinery now. Do not wait until the day you want to use them. Remember we have unusual condition now. You should not expect as prompt service from dealers. They are doing the very best they can to help.

Some farmers have a system of getting up in the very early morning and starting their work. During the heat of the day they rest and work again as long as the light will permit.

A break in the fence should be repaired at once. A half hour spent at the right time may save the loss of crops or damage by stray animals. It may prevent some of your own stock from injury.

In one of our small communities there are eighty families and thirty-three of them own and drive an automobile. They are in the dairy and livestock business, and we will wager that there were not half a dozen of them bought on the installment plan.

There never was a better time than right now for us to put in practice the slogan of "safety first." Lack of help may cause us to over work. Our desire to rush here or there may cause an accident. Too much to do will mean a neglect and serious results will follow. Safety first should be our aim and in the end we will be better off both physically and financially.

VALUE OF A MILK CHECK

Down in Monroe they have solved the divorce question and also family disagreements, according to a statement of one of their leading citizens in a meeting held for the farmers who visited them from Utah County last week.

They have a very successful co-operative creamery, in which practically every family of the town is interested. The unique plan of the Monroe people is that the women gets the milk check. These checks are large enough to take care of spending money for the wife.

If any of our other towns are experiencing any serious trouble, we suggest the Monroe plan to them—co-operative creamery, the wife to draw the milk check.

It has been very gratifying to learn of the large number of eggs that have been perserved in the homes of the state in response to the request for greater conservation and the sending out of Circular No. 25 from the Utah Experiment Station on "Preserving Eggs for the Home." Inquiries have reached the station asking if the eggs were spolied when the solution of water glass in which they were stored turns white or milky. This always happens after several months of storage, and later the mixture will be quite thick almost a white paste. The eggs are not injured in any way by this change. In taking the eggs out of the mixture it is well to wash off the water glass in cool fresh water before breaking the shell.

HOW TO ORDER REPAIRS.

Where to place the blame when repair parts are not delivered promptly is a debatable question.

An implement dealer explained to me a number of incidents that goes to show that there are two sides to this question. When asked how can the farmers help, his answer was prompt an quick—be more careful in giving descriptions and numbers of the parts. Make a drawing anything to give the details. Do not use a catalog 8 or 10 years old and expect to get the same results as if it was for 1917. Number may change, they may not, the thing is to be sure you are right. Order early to give the dealer or manufacturer a chance to get them back to you on time.

LOSS AT THRESHING TIME

The loss or waste of grain at threshing time is estimated at from one to ten per cent. This will amount to thousands of bushels when all of our acreage is considered.

As threshing has commenced every precaution should be taken to avoid waste of money, that more care and attention if possible be given to the threshing machine to see that all the wheat and straw is properly separated.

Care in handling the grain from the time it is cut until it reaches the threshing machine is important and proper storage afterwards to protect it from rats, mice and insects.

If our Government makes a minimum price of two dollars a bushel for wheat, there is every reason why waste should be avoided for the profit of the farmer and the feeding of our allies.

DRAINAGE CAN BE MADE PROFITABLE

With the increased prices that farmers are receiving for their products anything that will help to increase the production can be made profitable.

In different parts of the State considerable interest is being taken by land owners in the drainage of their land. Land that is now producing hardly enough to pay for itself can be made profitable when drained, in the production of cereals, beets and hay. Much land that is now water-logged was once our most productive land. It cannot and will not be productive unless properly drained.

Whether you have ten acres or can join with other farmers in a larger drainage district, now is the time to get busy and drain the land so that it will produce a crop next year.

ARE YOU KEEPING THE BROOD SOW.

Surely all this talk about raising more hogs will come home to those who have been selling their brood sows. There is profit in hogs and when we learn the game a little better this state is going to be a great hog country. Only this week a man who was born and raised in a state noted for its corn and hogs said, "Utah could produce hogs better than my native state and at a lower cost." Our alfalfa pastures and barley for fattening, along with other natural advantages, should make hog raising one of the great industries of the state.

THE PROBLEMS OF THE FARM.

Every farmer must be an earnest student of his own farm, for every farmer is a problem solver. Every farm is a problem of itself. Every farm will become more successful as all farmers learn to do something other than use their hands. We do not expect to see the time when a man will have to pass an examination that he is capable of managing a farm, but there is an economic law that will force him to give over to others who can manage successfully a farm

There are many problems, and it is a man's size job to cope with all of them. Production is only one of them. Marketing is the important one at present. Soil fertility, pests and their control, help, both labor and machinery, and so the list might be extended, enough to show, however, that the farmer must be an "all-around" man.

POTATO OUTLOOK

According to reports that are coming to our office, the potato production is going to be very materially reduced, as compared with previous reports. According to a bulletin just issued by the Ohio Experiment Station, potato blight may seriously menace the potato crop of that state this year. Weather conditions in Michigan have been cool and wet, and they look for an epidemic of "Late Blight," unless the farmers do some effective spraying to over come this dreaded disease.

Government officials have made a ruling that the Federal Banks can loan money on potatoes put in storage. This is the first year that this has ever been done. Until the Government passes the food bills, and we know definitely what is going to be, the market is more or less unsettled. With food products selling at the extremely high prices that are reported among the European nations, we should be able to get good fair prices for all we have to sell.

At the present time we have nothing definite to recommend but there seems to be every reason for the farmers to be in no hurry about making contracts or selling their potatoes, or any of the other farm products for that matter.

OUR WONDERFUL CROPS

From all reports we are able to secure there will be a wonderful harvest this year. Utah is very fortunate for the prospects we have. Our crops are so good that many seem to think it impossible that other sections are experiencing a shortage.

The State Council of Defense for Nebraska have just sent out a letter calling attention to the shortage of wheat and breadstuff and we quote two paragraphs from the letter:

"Nebraska's 1917 wheat crop will probably be about 10 per cent normal. Breadstuffs will be extremely scarce because of this shortage and the increased demand abroad."

In this letter they emphasize the importance of securing now seed wheat. Every farmer should make sure of enough seed of all kinds for 1918 planting and it should be done now.

Because of our large crops some may think there will be plenty. The best and surest way is to secure now the best seed possible for 1918.

Because of a shortage in other states more care should be given than usual to the harvesting and storage of our good crops.

IRRIGATION OF POTATOES

The results of some experiments at the Oregon Agricultural College conducted by W. L. Powers will be interesting. Climatic conditions may differ to those of our state but the study of irrigation is important.

The experiments have been conducted for ten years and an increase in the average yield has been made from 156 to 220 bushels. Here is a brief report:

Handling the Crop.

Good, solid varieties not too sensitive to little over-irrigtaion, such as Netted Gem, Rural New Yorker and Improved Burbank, are desirable. The seed should be planted five inches or so deep in rows 3 to 3½ feet apart and 12 to 14 inches apart in the rows. Crop rotation is important to provide legume sods from which the potato can take up for market the stored food materials.

Irrigation Requirements

Potato ground should have a good uniform moisture content at planting time, to be supplied by irrigation if not naturally present. Irrigation should be applied as late as possible without checking the vigorous growth of the vines. The first application is about the time of the first bloom, and the second, if needed, at the end of the blossoming period. Water applied while plants are in full bloom tends to produce many small, unmarketable tubers. The last irrigation should be 50 days or more before harvest to allow the potatoes to take up the usable soil moisture to be used or marketed, and to give maturity.

Irrigation Methods.

The water is always applied by the furrow system. The ground should be leveled to a uniform slope to get uniform distribution. The furrows are run rather deep between the rows, with a sled type of tools for loose sandy soils and pointed tool for heavy soils. The dry surface soil is crowded close to the rows to be pulled back over the wetted surface after irrigation. The water in 1 inch streams is turned into the furrows from a distributing head ditch, through opening in bank or lath tubes. When the stream has about reached the lower end of the furrow it is cut down a half, or enough to permit the water to run to the end of the furrow. A cross ditch is run along the lower end of the field to receive and distribute any surplus to prevent ponding. No flooding and little or no drainage occur.

Amount of Irrigtion.

The amount of irrigation is determined by the usable water capacity of the soil. The water is applied when the soil of the root zone is dried almost to the wilting point, which is indicated by the darkening of the vines to a deep green color, and should raise the soil to the excess point but no more. To irrigate the two feet of soil occupied by the roots and irrigation equal to a three-inch rainfall is a good average soaking—more on the heavier soils and less on the lighter. Two moderate irrigations are better than one heavy soaking, as potatoes do better with a moderate, fairly uniform moisture content. The entire amount per season on most Oregon soils is from the three to six inches of irrigation. We have frequently decreased the yield by putting on more.

Effects of Irrigation

Irrigation not only increased the yield but returned a better net profit on the crop. It gave a more favorable moisture condition and decreased the amount of water consumed by the plant per pound of dry matter produced by about one-fourth. A lower percentage of vines and a higher percentage of marketable potatoes with fewer culls were produced. With proper irrigation the moisture content of the potato has not been affected, and by cooking tests it has not decreased the palatability of the potato. It makes no difference whether the potato gets its moisture from rain or irrigation if the supply is uniform and if the potatoes are kept growing at a uniform rate and permitted to mature and dry out in the field.

HARVESTING HINTS

Hay, Grain, and Seed Bring Better Prices if Properly Harvested, Prepared, and Stored.

Careful handling often will get a high grade and a relatively high price for grain and hay which otherwise would grade low and sell low, say specialists of the United States Department of Agriculture.

It is worth while for producers to keep this fact in mind now that the harvest season for grain and hay is approaching in many sections. The supply of the best grades of grain and hay on the market is always light. This frequently may be attributed directly to poor handling and care. Quality always demands the best price, hence the greatest care should be exercised in harvesting and storing.

Practical Hay and Grain Hints.

Do not store damp grain or hay unless you have adequate facilities for frequent "turning" otherwise they are likely to go out of condition. Few farmers realize how small a percentage of moisture will cause otherwise good grain or hay to heat and deteriorate.

Never bale damp hay.

If your grain contains a large percentage of foreign material, clean it. It keeps better.

Feed low grades and screenings on the farm.

Do not mix varieties. In most cases it can be avoided. It nearly always causes the commodity you are selling to grade low.

Marketing and Storage Suggestions

Remember at all times that there is nearly always a better market for clean, dry, and unmixed varieties of grain or hay than for that which is damp, dirty, musty, moldy and off color.

Begin now to arrange for proper harvest and care of the coming corn crop. Remember deterioration of your crop this year because of careless handling and storage will mean an enormous loss both to you and the country.

Begin now to study your probable feed requirements for the coming year, and determine what quantity you will require and whether you will retain enough to meet your needs or purchase it.

Take Care of Next Year's Seed.

While it appears there will be plenty of good seed winter wheat, seed winter rye, and seed of other fall-sown crops if the available supply is properly distributed, everyone who is contemplating sowing an acreage of any of these crops this fall should provide for his seed supply as soon as possible. It will be necessary to ship seed wheat into those sections where the wheat winter-killed badly. In other sections which produced a good crop, the best of that crop should be conserved either on the farms or in country elevators to meet the local and distant demands for seed purposes. If this precaution is taken there will be no need of sowing wheat, procured at the last minute, which, though of commercial value for milling, feeding, or other industrial purposes, is unfit for use as seed.

He who saves for himself for sowing, or aids his neighbors or others in securing seed that he knows to be good in rendering the patriotic service of facilitating increased production.

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Remember—there's no obligation in sending for our offer and big FREE illustrated Columbia catalogs containing thousands of entertaining suggestions and full descriptions of every model of the genuine, world famous Columbia Grafonola. Write for them and our offer right away!

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61-3-5 Main St., Salt Lake, Utah.

GENTLEMEN:—

Please send me free and postpaid, sheet music, also big illustrated catalogs and full details of your free offer.

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THIS YEAR'S MODEL

The fussy old gentlemen asked the chance traveling companion: "Have you any children sir?"

"Yes, sir; a son."

"Does he smoke?"

"Ah, sir, he never so much as touched a cigaret."

"So much the better, sir; the use of tobacco is a poisonous habit. Does he frequent clubs?"

"He has never put his foot in one."

"Allow me to congratulate you. Does he never come home late?"

"Never. He goes to bed directly after dinner."

"A model young man, sir; a model young man. How old is he?"

"Just six months."—Philadephia Record.

When you answer an advertisement always mention the Utah Farmer.

HOME

ANOTHER RECIPE FOR SOAP

Any clean unsalted grease or tallow can be used to make soap, writes Evelyn G. Halliday of the Colorado Agricultural college at Fort Collins. If this fat is such that it would not be utilized for other purposes, the only item of expense is the lye, and this is small since ten pounds of soap can be made with twenty cents worth of lye. Directions for making such soap are found in each can of lye purchased, and are essentially as follows:

Weigh out the amount of fat required for the can of lye used, and prepare this fat by melting it and letting it cook slowly with water or raw potato until it ceases crackling. By doing this, much of the strong odor will be removed. Now strain the fat through fine muslin and let cool until it is no more than luke-warm. In the meantime place lye in an earthenware dish, preferably a pitcher, since it will be easy to pour lye solution from this, add the amount of water specified in directions and stir the mixture until all the lye is dissolved. Let this lye solution stand for a few minutes until just warm, then pour it slowly into the grease, stirring mixture meanwhile with an agate spoon or a stick. Continue the stirring until the mass is of the consistency of honey, then mold at once in agate pans, wooden or paste board boxes, lined with waxed paper. Cover soap and set it in a warm place for a day or so after which it can be cut in any desired shape with a fine wire or with twine.

WASTE NO FAT—SUGGESTIONS FOR ITS UTILIZATION

Every Bit of Fat Which Comes into the Kitchen May be Used.

Magdelene Hahn.

At this time when all kinds of fats cost so much, it behooves the thrifty housewife to utilize every bit that comes into the kitchen.

The fat from mutton or lamb may be used in making soap, or in making tallow that is good for chapped hands.

Goose grease is an old-time remedy for sore throats.

Chicken-fat, rendered, makes an excellent cooking fat. It is especially good for biscuits, cornbread, muffins, or spice cakes.

Beef fat or suet, is much cheaper than lard and can in most cases, be substituted for it.

Any fat from pork can be rendered and used in cooking. When trimming meat at home, save all fat and render it. If the meat is trimmed at the market, insist on having the trimmings delivered with the meat.

The unrendered rind that is cut from meat makes an excellent grease for griddles, skillets, or other pans. When cooking bacon, pour off the excess fat and save it. It is very good for browning potatoes or parsnips.

The cracklings that remain when fate is rendered may be used in soap, corn breads, spice cake or for chicken feed.

Any butter that is not fresh may be worked over with cold water and greatly improved.

Rancid olive oil can be freshened by heating with a few slices of potato.

Plenty of Fruit

There is more fruit this year than in years past. The cost is less. Every housewife should double her winter's supply of canned fruit. It will reduce the cost of living in her own home as well as in the homes of others.

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

should be used for table use and for preserving fruit. It is pure, sweet, white and of high quality.

May be had in 10, 25, 50 and 100 pound bags. Your dealer will supply you.

Made by

UTAH-IDAHO SUGAR CO.

ANOTHER WAY TO USE TOMATOES

Cans are costly, time is short, and garden stuff is abundant but perishable; then why not bottle tomato paste instead of canning all your crop of tomatoes. Tomato paste is a concentrated form, available for use in soups, sauces, and in combination with beans, macaroni and spaghetti. Every European knows tomato paste and you can buy it from the American grocer; but the housewife who has a tomato patch, can prepare paste at no expense but a little time. The advantage of this concentrated form when jars are scarce is clear—any odd bottles can be used for the paste, corked and sealed with sealing wax.

Directions for making:

1 quart thick strained tomato pulp.
1 slice onion.
4 tablespoonful of chopped sweet red peper pulp, or one teaspoonful of paprika.
½ teaspoonful of salt.
1 teaspoonful of sugar.
1 tablespoonful of mixed spices.

Cook spices tied in bag with tomato pulp in a pan over boiling water for about three hours, or until the paste is thick enough to hold the shape of a spoon when tested by dipping out a spoonful. Bottle hot in freshly scalded bottles, cork and seal. The sealing can be easily managed if the cork is forced down below the edge of the neck and the top surface sealed over with sealing wax or paraffin.

BOTTLE FRUIT JUICES NOW

Summer time is when everything seems to pile up at once. Here is a suggestion that may lighten the work in conserving of our fruits.

Nothing seems quite so hot as jelly making, and it will be found a relief to bottle fruit juices in summer to be made up into jellies in winter as needed, and when there is cash to spare for sugar. If you find yourself overstocked with fruit juice when fruit time rolls around again, you have lost nothing but a little labor.

There are several uses to which this fruit juice may be put. It makes delightful drinks or fruit punches, which when served with plain sponge cake make a delicate desert or refreshment for small gatherings.

Children will appreciate fruit syrups or "honeys. They are delicate in flavor. These syrups are made by cooking the juice with sugar until it is as thick as maple syrup. Then too the fruit juice may be used in winter sauces or added to dried fruits in making preserves.

If fruit is scarce, apples and pears too defective for preserving, or cores and peelings left over from preserving may be used for making fruit juice. Or the juice may be evaporated to a syrup without sugar, and used as sauce for breakfast cakes.

In preparing the juice for bottling, proceed as for jelly. When juice is extracted heat it almost to boiling and pour into a small-necked bottle. The bottle and cork should be taken from boiling water in which it has been for half an hour. Drain, pour in the hot juice, cork with sterile cork and coat with sealing wax or hot paraffin.

Juices extracted from berries or grapes will be found particularly good for drinks and sauces, while apples, pears and peaches make agreeably flavored syrups. Apples and pears with an individual flavor should be selected for this purpose.

Save The Fruit You Preserve

by double sealing the jars. After putting on the cap, just dip the whole top in Parowax. Then air can't get in to start fermentation.

Jellies cannot mould if Parowax is poured into the tops of the glasses.

Parowax is tasteless and odorless; guaranteed under the Pure Food and Drugs Act.

Sold by grocers and druggists everywhere in handy one pound packages.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Cheyenne Albuquerque Boise
Pueblo Salt Lake City Butte

Parowax

CANNED TOMATO SAUCE OR PUREE

Since tomatoes contain a very high percentage of water, it often is desirable to can only concentrated tomato products. This is true especially when cans or jars are difficult to obtain. A delicious concentrated tomato sauce may be made and canned as follows, says the United States Department of Agriculture. Small or broken tomatoes and large tomatoes unsuitable for canning whole, may be used in this recipe.

Cut the tomatoes into fairly small pieces and add the large sized onion chopped and one cup chopped sweet red pepper to one gallon tomatoes. Cook until tender. Put through a sieve and add a mixture of 1-3 salt and 2-3 sugar in a proportion of one teaspoonful to each quart of the mixture. Cook until the consistency of ketchup, stirring constantly. Pack hot into sterilized jars or bottles. Adjust rubber and cap—place the containers on a false bottom in a vessel of water sufficiently deep to reach almost to their tops and allow to remain at a boiling temperature for 25 minutes. Remove jars from the water bath and tighten the lids immediately.

THE PRESERVATION OF SWEET CIDER

May be Kept From Fermentation for Long Period by Pasteurizing.

Of the various methods used to preserve sweet cider, perhaps the best, from a dietetic standpoint, is that of pasteurizing. This is accomplished by pouring fresh cider into sterilized glass or stone receptacles, stoppering these with sterilized corks, then placing them in boilers or large kettles and surrounding them with cold water—enough water being used to cover cider completely. If breakage is to be avoided, raise cider containers off the bottom of the boilers or kettles by placing under them a wooden rack, wire netting, or inverted pie tins in which a few holes have been punched.

When everything is in readiness heat water until it boils, then remove vessel from the range, or place it on the back part, cover it with a heavy cloth, and leave for from one-half to one hour, depending on the size of the cider containers. At the end of that time, cool quickly, under running water if possible, and then set away in the coolest spot available.

Cider so treated was kept in the store room of the Home Economics department at the State Agricultural College from October 1 to June 1, and at the end of that period had lost none of its color or flavor, had not fermented, and was almost perfectly clear, due to the sedimentation of the organic impurities orginally present in suspension.—Evelyn G. Halliday, Colorado A. C.

HE DELIVERED IT

A boy walked into the office of the telegraph company at Chicago, saying his name was Missouri, and asking for a job. It happened that a messenger boy was urgently needed, and giving him a message that had to be delivered in a hurry, the manager said:

"Here is your chance, my boy These people have been kicking about undelivered messages. Now, don't come back till you have delivered it."

A few minutes later the telephone rang. On the other end of the wire was a building watchman, somewhat terrified.

"Have you got a boy they call Missouri?" he gasped.

"We did have ten minutes ago."

"Well," continued the watchman, "that Missouri fellow came over here and said he had to go to one of the offices. We don't allow anyone at that office at this hour, and I told him he couldn't go. He insisted and I had to pull my gun on him."

"But you didn't shoot?" cried the manager.

"No," came back the meek response, "but I want my gun back."

FARM CHEESE

One hundred pounds of whole milk will make from ten to eleven pounds of cheese, which is equivalent to about twenty pounds of beef. According to the United States Department of Agriculture, one pound of cheese is equal in food value to two pounds of beef. A similar comparison might be made with pork, since pork and beef are not widely different in food value, although pork has a little higher fuel value. Since hogs furnish the chief source of meat consumed on farms, a comparison of pork with cheese will not be amiss. Twenty pounds of pork, at 52 cents a pound would be worth $5. Now if 100 pounds of milk will produce cheese with about the same value as $5 worth of pork, the latter should be sold and more cheese used in its place.

In addition to other qualities, cheese does not require cooking before being served. It may, however, be grated and served in a variety of ways with cooked foods.

Pound for pound, cheese contains nearly twice as much protein as beef of average composition and more than twice as much fuel or energy value. Considering its high food value, cheese is, therefore, a more economical food than meats of any kind.

The making of cheese under farm conditions is not difficult. It requires very little time and no expensive equipment is necessary. The apparatus used can be largely supplied from the household utensils. Besides these a dairy thermometer and a few rennet tablets will be required. The rennet tablets can be purchased from any dairy supply house.

MAKE YOUR OWN SOAP

The high cost of living, still insidiously working and exacting millions upon millions of dollars for the benefit of market gamblers, has assumed a new line of attack on the pocketbooks of housewives. Now they ar expected to pay tribute to the soap manufacturers and others who control the materials used in making soap. If there is any way of beating the price boosters at their own game it is well worth trying.

For instance, make your own soap.

Again, utilize bits of soap.

Also, make your own cleaning and bleaching agents.

Within the last few weeks the price of laundry soap by the box has practically doubled, and it is still climbing. Usually there is not a marked saving in buying soap by the box when considered from the financial standpoint only. There is economy, however, in buying it in quantities and allowing it to dry. This makes it go much farther.

A good grade of laundry soap can be made in the home from drippings, rancid oils and fats that ordinarily are wasted. Home made laundry soap may be made by using seven pounds of solid fat and one pound of lye dissolved in 11 cups of water.

Clarify and strain the fat and allow to harden. The fat is warmed enough to melt it and the lye solution stirred in until the mixture becomes a creamy mass. It is then poured into molds to harden. This makes a firm soap for general kitchen use at a small cost.

All small pieces of soap should be saved and kept free from dirt and dust. When a sufficient number has accumulated it can be made into soap jelly or solution. This can be used for dishwashing, woodwork, soaking clothes, washing flannels—if made from neutral soap—and scrubbing.

One bar soap or its equivalnet in small pieces may be added to two or three quarts of water in the preparation of soap solution. Shave the soap and put into a sauce pan with cold water. Heat gradually for one hour until the soap is dissolved. A tablespoon of ammonia, turpentine, or kerosene may be added, if desired.

One bar soap or the equivalent in small pieces and one quart of water is recommended in the preparation of soap jelly.

Commercial washing powders and cleaning agents are wasteful and expensive. A good liquid cleaning and bleaching agent can be made in the home easily by the use of one pound sal soda dissolved in one quart of boiling water and one-fourth pound of chloride of lime added to one quart of cold water. Mix thoroughly. Let stand for several hours. Pour off the clear liquid. Bottle and keep in cool place.

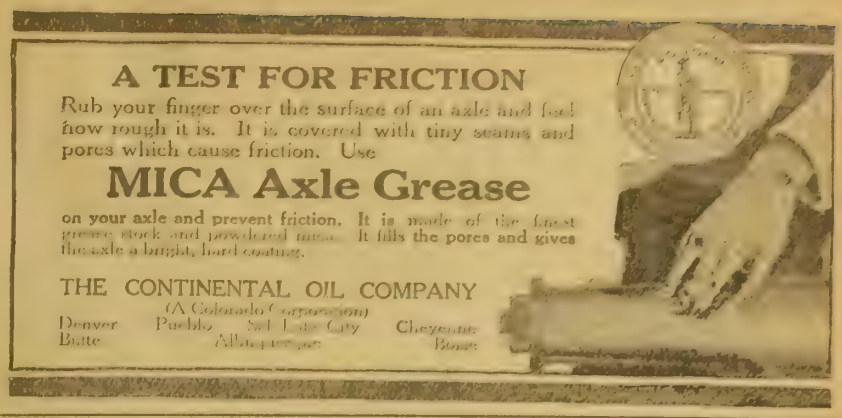
THE CONTROL OF HOUSE ANTS

Most of the common house ants of Idaho are spoken of as larger or small red ants, reddish brown, black or tiny yellowish ants. All these kinds or species of ants usually come from outdoors and must be killed in one of three ways: (1) by mechanical destruction, which is rather tedious and not always practical; (2) by poisoning, which takes the most time and may not always prove successful; (3) by fumigation with carbon bi-sulphide where the nest can be reached. This treatment is not always dependable if the nest runs under the cement walk, a house wall or a stump.

Mechanical measures consist of laying greasy bones or sugared sponges in the ant trails and when the ants have gathered in numbers, plunging the bone or sponge into hot water; or digging up their nests and widely scattering them among the chickens. Ant-proof cupboards, food safes, or the removing of attractive food from the reach of the ants will usually cause the ants to stop work in the house.

Where the nest is not easily found, poison sweets may be set along the trails so that the ants will carry the poison to the hidden nest and feed it to the laying queen and brood before they are themselves destroyed by the poison. This method will in time completely do away with the ants since they are attracted to the bait. Quite an effective poison is a syrup made by using 3 grams of sodium arsenite (soluble) in a spoonful of water, added to 2 lbs. of sugar dissolved in ¾ pint of hot water. The poison syrup may be soaked on bits of sponge and placed along the ant trails, or set sponges inside old tin cans so dogs can't lap them.

Where the trail of ants is easily followed to a nest in the soil, carbon bi-sulphide may be applied, preferably towards dusk when most of the workers are at home. With a stick make three holes from three directions on the edge of the nest towards the center. As quickly as the stick is withdrawn each time, pour in an ounce of the carbon bi-sulphide and immediately close with damp earth so that neither ants nor gas can come out. One or more wet sacks laid over the nest will help to hold the fumes.—A. C. Burrill, Entomologist.



Summer Excursions Bulletin

Via

UNION PACIFIC SYSTEM
O.S.L.R.R.
ROUTE

East

August 15, 22, 29.
September 5, 12.

West

Daily to September 30th.

North

August 11, 18 and 25;
September 15 and 29.

See Any O. S. L. Agent for further details or write,

D. S. Spencer, Gen. Pass. Agent,
Salt Lake City, Utah.

MY GUIDE

"It shall be my aim to respect my country, my profession and myself. To be honest and fair with my fellow men, as I expect them to be honest and square with me. To be a loyal citizen of the U. S. A. To speak of it with praise and to act always as a trustworthy custodian of its good name. To be a man whose name carries weight with it wherever it goes.

"To base my expectation of reward on a solid foundation of service rendered; to be willing to pay the price of success in honest effort; to look upon my work as an apportunity to be seized with joy and made the most of, and not a painful drudgery to be reluctantly endured.

"To remember that success lies within myself, and my own brain, my own ambition, my own courage and determination; to expect difficulties and force my way through them; to turn hard experience into capital for future struggles.

"To believe in my proposition, heart and soul; to carry an air of optimism in the presence of those I meet; to dispel ill-temper with cheerfulness; kill doubt with a strong conviction and reduce active friction with an agreeable personality.

To make a study of my business; to know my profession in every detail; to mix brains with my efforts and use system and method in my work; to find time to do every needful thing by never letting time find me doing nothing; to hoard days as a miser hoards dollars; to make every hour bring me dividends, increased knowledge or healthful recreation.

"To keep my fortune unmortgaged with debts; to save as well as earn; to cut off my expensive amusements until I can afford them; to steer clear of dissipation, and to guard my health and body and peace of mind as a most precious stock in trade.

"Finally, to take a good grip on the joys of life, to play the game like a man; to fight against nothing so hard as against my own weaknesses, and endeavor to grow in strength a gentleman—A Christian.

"'So I may be courteous to men; faithful to friends, true to my God; a fragrance in the path I trod.'"—Bunceton Eagle.

NEED NOT THROW AWAY OLD PARAFFIN; CLEAN AND REUSE

Paraffin that has become unclean through usage in canning and preserving, may be cleaned and reused. Don't throw it away because dirt and trash have become mixed with it. Many times paraffin can be cleaned with a brush in cold water. If this does not remove all the dirt, heat the paraffin to boiling and strain it through two or three thicknesses of cheesecloth placed over a funnel. Or a thin layer of absorbent cotton over one thickness of cheesecloth may be used as the strainer. One straining should be sufficient ordinarily but if the paraffin still is unclean heat and strain again. Any paraffin lodging in the strainer may be recovered by heating the cloth and pouring off the hot liquid to another strainer.

DOING HIS BIT

Governor Hock of Kansas used to be fond of telling this story to rural audiences:

One time a village shoemaker put up a blackboard in his shop and asked his customers to write their names upon it and opposite tell what they were doing for humanity.

A lawyer wrote, "I plead for all."

A doctor wrote, "I perscribe for all."

A merchant wrote, "I purvey for all."

A preacher wrote, "I pray for all."

An old farmer walked up, chalked down his name, scratched his head awhile and then wrote, "I pay for all."

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BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."
Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.
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Use any Injector, but Cutter's simplest and strongest.
Prices:
10 dose pkge. Single pills $1.00
50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
50 dose pkge. Double Pills 6.00
Cutter's Pill Injector.... 1.50
Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
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The Cutter Laboratory of Illinois, Chicago
Eastern Agent

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam

Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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Government Crop Report

A summary of the August crop report for the State of Utah and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture, is as follows:

Winter Wheat

Utah.—August 1 forecast 4,680,000 bushels; production last year (December estimate) 5,000,000 bushels.

United States.—August 1 forecast 417,000,000 bushels; production last year (December estimate) 481,744,000 bushels.

Spring Wheat.

Utah.—August 1 forecast, 2,350,000 bushels; production last year (December estimate) 1,900,000 bushels.

United States.—August 1 forecast 236,000,000 bushels; production last year (December estimate) 158,142,000 bushels.

Oats.

Utah.—August 1 forecast 4,840,000 bushels; production last year (December estimate) 4,480,000 bushels.

United States.—August 1 forecast 1,460,000,000 bushels; production last year (December estimate) 1,251,992,000 bushels.

Barley.

Utah.—August 1 forecast, 1,260,000 bushels; production last year (December estimate) 1,224,000 bushels.

United States.—August 1 forecast, 203,000,000 bushels; production last year (December estimate) 180,927,000 bushels.

Potatoes.

Utah.—August 1 forecast, 3,890,000 bushels; production last year (December estimate) 3,600,000 bushels.

United States.—August 1 forecast, 467,000,000 bushels; production last year (December estimate) 285,437,000 bushels.

All Hay.

Utah.—August 1 forecast, 1,395,000 tons; production last year (December estimate), 947,000 tons.

United States.—August 1 forecast, 100,000,000 tons; production last year (December estimate), 109,786,000 tons.

Apple (Agricultural Crop).

Utah.—August 1 forecast 282,000 barrels of 3 bushels; production last year (December estimate) 33,000 barrels.

United States.—August 1 forecast 62,600,000 barrels of 3 bushels; production last year (December estimate) 67,415,000 barrels.

Sugar Beets.

Utah.—August 1 condition 94%; compared with the ten-year average of 93%.

United States.—August 1 condition 90.3%; compared with the ten-year average of 89.3%.

Prices.

The first price given below is the average on August 1 this year, and the second, the average August 1 last year.

Utah.—Wheat, 205 and 92 cents per bushel, Corn, 194 and 91 cents. Oats, 84 and 55 cents. Potatoes, 195 and 135 cents. Hay, $11.70 and $13.00 per ton. Eggs, 30 and 22 cents per dozen.

United States.—Wheat, 228.9 and 107.1 cents per bushel. Corn, 196.6 and 79.4 cents. Oats, 73.7 and 40.1 cents. Potatoes, 170.8 and 95.4 cents. Hay, $13.42 and $10.68 per ton. Cotton, 24.3 and 12.6 cents per pound. Eggs, 29.8 and 20.7 cents per dozen.

CROP SUMMARY.

Ranges and stock continue in excellent condition. The second crop of alfalfa is growing nicely. Wild hay is being cut and a heavy yield is reported. Dry land grain is being harvested. The prospects have been greatly reduced by the dry weather. Irrigated grain, which is heavy, was badly lodged by the July storms. The labor of harvesting will be greatly increased. Grasshoppers are causing serious damage to oats and alfalfa in some small areas. Fruit, generally, has made seasonable progress and promises good yields. Hot weather injured peas and beans to some extent but other vegetables are very promising. Sugar beets are doing well though some of the late beets have been unfavorably affected by the hot dry weather, and tardy thinning, due to scarcity of labor.—Miner M. Justin, Field Agent for Utah.

WEATHER SUMMARY.

The dry and hot weather which began about the middle of June continued in the greater part of the State without interruption until the last few days of July. This six weeks drought, coming early in the development of the crops because of the backward spring, was very severe on dry land crops, especially small grains, largely reducing the promised yield by failure of the heads to fill properly. Where crops were supplied with sufficient moisture they progressed rapidly under the influence of high temperatures, and are now at pratcically normal stage for the season. The average temperature for 72 stations was 74 degrees, which is nearly 3 degrees above normal, and the warmest July of record except 1901.

Showers became more general after the 20th of the month, especially in southern counties, and were heavy and well distributed throughout the State during the last five days of the month, accompanied by a marked decrease in temperature. These showers caused some local damage by flooding or by lodging of hay and grain but were of immense benefit to ranges and to crops in general, except grain, for which they were too late. The average precipitation for 122 stations was 1.28 inches, which is 0.28 inch above normal.—J. Cecil Alter, Meteorologist.

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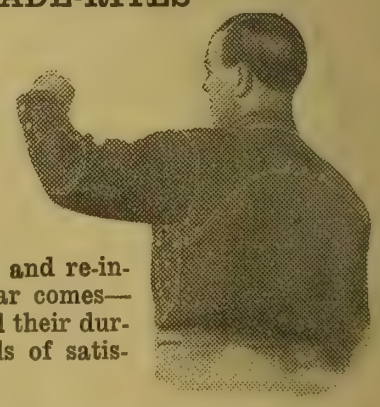
They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.
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Ogden, Utah.

UTAH'S WATER RIGHTS COMMISSION

By Prof. O. W. Israelsen, in charge of Irrigation and Drainage, Utah Agricultural College.

Many Utah irrigators who followed carefully the work of the last Legislature have expressed interest and satisfaction in House Bill Number 128, providing for a water rights commission. The satisfaction thus expressed is no doubt representative of the feeling throughout the greater part of Utah which is briefly, a somewhat righteous indignation with respect to present methods of determining existing water rights, and to their protection—or rather to their lack of protection—by the State. Utah irrigators are becoming tired of having to expend nearly as much money in the protection of their water rights as in the management of their irrigation systems, a condition which is asserted by some leading irrigation managers to be an actual fact. Moreover most irrigators realize that Utah, the pioneer irrigation state in Western America, for many years led other states in constructive water right legislation, but that of recent years it has fallen very much behind the progress of its sister states. Therefore, it is not surprising to find that they welcome the enactment of a law creating a water right commission, the duties of which are briefly,

1. To make a careful and complete investigation of the conditions existing in Utah with respect to water rights.

2. To make similar but less extensive investigation in other states and countries.

3. To make a report of their investigations to the thirteenth legislature, recommending such changes in the present irrigation laws as the results of their investigations indicate advisable, and

4. To provide in detail a bill governing the appropriation, adjudication, and administration of water rights within the state of Utah.

The members of the water rights commission are familiar with the various phases of irrigation problems in this state and they represent three somewhat distinct phases of irrigation development. The legal phase is represented by Attorney Mathonihah Thomas, Chairman of the Commission; the engineering phase by Mr. W. D. Beers, former State Engineer, now secretary of the commission and the businessman's aspect, by Mr. W. R. Wallace who has had several years practical experience in determining water rights. The commission is, very properly, anxious to have the hearty support of the irrigators of Utah and particularly that of the incorporated irrigation companies, in order to make possible a very thorough investigation of conditions in this State, the results of which will further make it possible to recommend laws which will be of mutual advantage to the irrigation company, the irrigator and to the public. Many of the surrounding states are apparently making very rapid progress in connection with irrigation legislation. But Utah has peculiarities which necessitate a very careful study in order to safely and effectively apply the principles and provisions of the laws of other states in this State. Because of these facts, irrigation engineers, lawyers and practical irrigators throughout the entire State will watch very carefully the work of the Water Rights Commission, hoping that real advancement may come as a result of its labors during the next year and one-half.

—o—

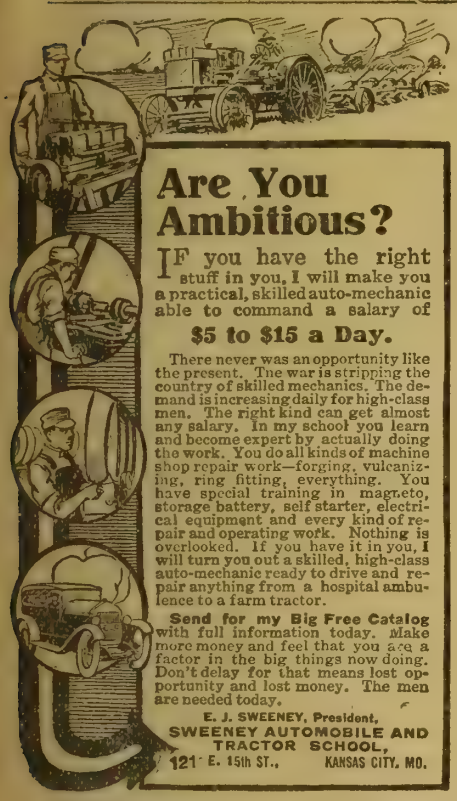
TO CLEAN HAT RIBBONS AND FEATHERS

Ribbons.—Ribbons may be cleaned by sponging with denatured alcohol. Good ribbons may be washed in soap and water. Always press between cloths or paper.

Feathers.—White or colored feathers may be washed in a thin paste of gasoline and flour, or gasoline and plaster of paris. To one pint of gasoline add two tablespoons of flour or plaster of paris. Clean the feather by putting it in the paste and rubbing it from the stem to the tips of the flues. Do not rub the flues back and forth but move the fingers always in the same direction. When the feather is clean, draw it through the tightly closed hand to squeeze out the gasoline. Shake a few minutes; then finish drying in cornstarch. Spread the cornstarch on a piece of tissue paper and rub the feather lightly in the starch until dry. Shake the starch out and the feather will be recurled. Make a suds of ivory soap and warm water. Let the feather soak in this an hour or two. Then wash by drawing through hand. When clean rinse the feather first in clear water and then in wood alcohol. Care should be taken in handling the wood alcohol, because it is poisonous. After squeezing out the alcohol dry the feather in cornstarch. Recurl, using a silver knife.

Cleaning Black or Dark Colored Feathers.—Black or dark feathers may be cleaned by washing in wood alcohol. Shake the feather until dry.

—Department of Domestic Arts, Utah Agricultural College.



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Has the hurry built right into it. Simple as A B C. Free from needless parts. Smooth running—easy on the engine that runs it. Engine absolutely dependable, thoroughly tested for all conditions of field work. Plunger operates on the power which comes through a long lever working against the sharp grip behind the plunger head. Result, each stroke is powerful, with no back kick. Many exclusive features. A big money maker for the man who uses one. J. N. Inman & Sons, (Haybalers), Independence, Mo., say: "Bales 90 80-lb. bales in 55 minutes from windrow, and 70 70-lb. bales in 50 minutes from stack. Have made big money." Hundreds have had the same experience.

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LIVE STOCK

THRIFT IN LIVESTOCK

By thrift in livestock we refer to that condition of health and vigor which enables the animal to do the work or produce the results that the stockman is looking for at the least expense. Probably not one person in 10 is in absolute perfect physical condition from one week's end to the other. Among domestic animals a state of perfect health is not very rare. This is the result of artificial conditions under which the modern farm animal is bred, fed and cared for—the unnatural demands made of it—the forced pressure under which it lives.

But the fact that a condition of ideal perfection is unattainable, must not deter us from aiming to reach that condition as nearly as possible, because the more nearly we reach that condition the greater the profits, and profits is the real end and aim of stock keeping.

If the boiler of your engine springs a leak; if the gearing of your feed mill breaks; if the bowl of your cream separator needs rebalancing; if an arm of your windmill breaks, you do not think of trying to continue their use until after the damage is repaired, and yet many otherwise good farmers seem to expect their livestock to make money for them when they are entirely "out of condition."

We may regard the dairy cow as a machine for the production of milk and butter; the steer and pig as machines for the manufacture of beef and pork; the sheep a machine for making mutton and wool; the horse as an engine for the generation of power; the brood animal as a machine for reproducing her kind, and we may be sure that just as in any other piece of machinery, none of them can do the work acquired if there is anything radically wrong with their mechanism.

It is not the animal that is suffering from a malignant disease that works the greatest damage to the farmer's profits, for such an animal is usually killed or cured in short order and gotten out of the way. It is the unthrifty stock—the stock off feed—the stock out of condition, or the stock lacking in vigor and vitality, but which is allowed to drag on throughout the entire season, "eating no returns, that causes the farmer his heavier losses.

And the worst feature of it is, the loss of hardly realized—or at least the source of the loss is seldom suspected.

An old German proverb says, "The eye of the master fattens his cattle,"—the idea being that the watchful care of an experienced mind is necessary to attain the best results, because only by means of such vigilance can real thrift be maintained.

But the eye of the master cannot be everywhere at all times, and the wise master, be he ever so quick to detect off-condition, will not wait until the mischief is done, but will, so far as is practical, surround his animals by conditions that do most to promote their thrift.

MILK AS A HOG FEED

Skimmed milk and buttermilk are among the first feds to consider for the production of both breeding animals and those for the pork barrel. Milk is a balanced ration in itself, having a high content of bone and tissue-forming constituents. As a means of promoting vigor and growth, and also as a supplement to grains, milk is one of the cheapest feeds that a hog man can use.

Skimmed milk and buttermilk have about the same values when fed to fattening hogs.

Skimmed milk should bed fed in connection with a grain ration. When this is done, and the proportion of skimmed milk and grain are what they should be, it appears to require less digestible food substance for a pound of growth than when grain is fed alone, and when milk is fed in large quantities. In other words, dairy products are not efficient in themselves in producing growth in hogs, but in the proper combination they cause a saving of the grain products necessary to secure a good ration of grain.

There is no doubt but what corn is good and generally the cheapest feed that can be used in fattening hogs. It is deficient, however, in both protein and mineral requirements. Our experiment stations have proven that skimmed milk or buttermilk are among the best supplements for corn in fattening hogs. The amount of milk to use should be governed by the age and condition of the hogs and the supply of milk. Young pigs or those that are thin should be fed approximately ten gallons of milk to one bushel of corn. As they grow older and fatter, the proportion of milk should be reduced to six or seven gallons for every bushel of corn. Under ordinary conditions, exclusive of the dairy section, such a ration is not practicable. If hogs are to be fattened in a dry lot and fed either skimmed or buttermilk the following results can be expected.

When feeding one pound of corn equal with 1.2 lbs. of milk, 327 lbs. of milk will save 100 lbs. of grain; and feeding from 2.5 lbs. of milk to one of grain 446 lbs. of milk will save 100 lbs. of grain; feeding one lb. of corn to 3.7 lbs. of milk, 576 lbs. of milk will save 100 lbs. of grain; and feeding one lb. of grain to 7.1 lbs. of milk, 975 lbs. of milk will save 100 lbs. of grain. The average of all is 475 lbs. of milk will save 100 lbs. of grain.

These estimates place a rather high value on milk as a feed for swine. When pigs have the run of a good pasture, the milk fed with corn will not be so valuable.

A few years ago, the Indiana Experiment Station ran an experiment, using skim milk and buttermilk as supplements for fattening hogs. The feeds used in the experiment were shelled corn, corn meal, skim milk and buttermilk, middlings, tankage, linseed oil meal, soybean meal and rape. Five pigs weighing 68 lbs. each were kept on a ration of shelled corn and milk for 90 days. During this time they made an average daily gain of 1.22 lbs. per head, and required 2.53 lbs. of shelled corn for each pound of gain. Another lot on shelled corn and rape pasture made an average daily gain of .81 lbs. per head and required 3.97 lbs. of corn for each pound of gain. Those receiving the milk made an average daily gain of 1.57 lbs. per head, and required 3.08 lbs. of shelled corn in addition to make one pound of gain.

SHEEP-TICK CONTROL

Tick-Infested Sheep Do Not Thrive—Two Dippings Necessary to Kill All Ticks.

There is some danger, according to agricultural authorities, that the sheep tick may become a source of considerable loss to farmers and stockmen in those localities in which the dippings practiced for some years in order to eliminate sheep scab has been largely discontinued. Dipping for scab has helped to control the sheep tick in those localities, which consequently have been comparatively free from this pest for a number of years. Now, however, it appears that sheep ticks are becoming a nuisance in the areas where systematic dipping was formerly carried on, and they are likely to cause a great deal of damage if steps are not taken to control them.

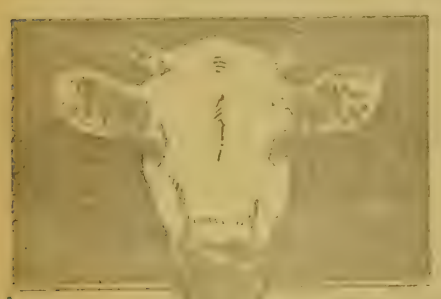
The sheep tick is a wingless parasitic fly which spends its entire life on the sheep. I obtains its food by puncturing the skin and feeding on the blood and lymph of the animal. The irritation thus caused, especially in the case of lambs, is great, and the constant drain of blood may in time become serious. Infested sheep are so restless that they do not feed well and are in general less thrifty than tick-free flocks. These conditions hamper the growth of wool and in general lower the market alue of the sheep. From a purely economic point of view, therefore, dipping is a profitable practice.

Two dippings are regarded as necessary on account of the life habits of the tick. The first dipping will destroy all the mature ticks on the animal, but it can not be depended on to destroy those in the pupal stage, in which they are protected by a hard shell. In this shell the tick remains from 19 to 24 hours. A second dipping, therefore, 24 days after the first will find these insects in an unprotected state, having emerged from the pupal shell in the interval between the dippings.

There are a number of solutions which are effective in destroying sheep ticks. Among these coal-tar-creosote, cresol, and nicotine dips may be purchased ready prepared. The lime-sulphur-arsenic solution can be made at home, but it is difficult to prepare and its poisonous qualities necessitate special precautions in its use. Complete details in regard to the various kinds of dips and the most effective methods of administering them are contained in a new publication of the United States Department of Agriculture, Farmers' Bulletin 798, The Sheep Tick.

The cost of dipping varies considerably, depending upon the cost of labor, fuel, and material. In the sheep growing sections of the West, however, it may be estimated at from 2 to 3½ cents a head for each dipping. Where only a few sheep are kept, a portable galvanized-iron vat may be used or a canvas dipping bag. Where large flocks are cared for, however, or where a farmer is in the sheep business permanently, it is best to provide proper facilities for the work, and a permanent dipping vat is the only practical solution.

Think ahead of winter needs and save like an Indian Squaw for the long winter. Nobody knows just yet how hard a job you will have on your hands, but this is a certainty: nothing saved will come amiss.



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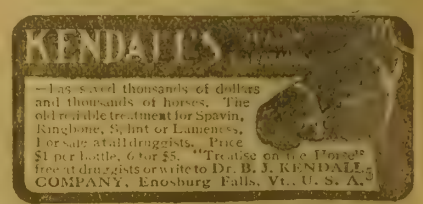

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Lehi, Utah

WATCH THE HERD BULL

From the New Zealand Dairyman.

The above significant admonition means even more than the majority of bull owners and bull handlers appreciate at first thought. The bull is the most dangerous animal on the farm or range, and has recorded to his credit more fatalities than all other sources of animal injury. Safe handling is important. Quietness and gentleness in the herd bull are features that all bull owners delight in mentioning when speaking of the all around usefulness and desirability of their animals.

There are, however, so many instances of sudden viciousness developed in the quiet bull, who for years had been regarded as perfectly safe, gentle, easily handled by man or boy, that the only safe plan is to treat all bulls with the greatest of caution and suspicion of danger. It seems that the accidents resulting from the vicious attacks of the bull are mostly upon children or old persons not capable of putting up a vigorous remonstrance at the first indication of revolt. No one should be assigned the care of a bull who is not an active, elert, prompt handler, and has means to combat any sudden tendency of the animal to become unruly. Prompt punishment, even if no more than a slight rap over the nose or face with a strap or whip, has changed the attitude of the bull from one of vicious promptings to submission and quiet deportment.

The reports of fatilities from this source of injury are not an infrequent thing. In the newspapers these notices are so frequent as to suggest that some system of caution should be urged upon the owners of such animals as to secure greater safety in their handling. Bulls are too frequently turned out among the farm herd and pastured with the milk cows that are each morning and evening brought into the barnyard or cowyard to be milked. Children are liable to injury at any moment where these animals of vicious inclinations are at liberty. The nose ring is at all times a necessity, and leading a bull without sufficent protection fully to control him from this sensitive organ is a risk that no one should take with an animal that so frequently develops the spirit of killing his best friend—his caretaker.

CONSERVATION OF BREEDING STOCK

James Withycombe, governor of Oregon, recently wrote to the president of the United States as follows: In my opinion it would be extremely advisable to issue an organized appeal to the farmers of the country urging them to keep their female breeding stock, and to withhold from sale their veal calves and young marketable animals. I think that such acion, especially if it could come in the form of a president's proclamation, perhaps would have a markedly beneficial effect and would at least direct the attention of the nation to a field of common sense conservation which will, if properly acted upon, mean countless millions of dollars saved to the country during the next decade, and a wise safeguarding and increasing of its male production possibilities.

Such conservation is especially important because it will not be the foodstuff problems of our own country alone which we must meet during the coming few years; Europe's stock of producing animals—hogs, cows and sheep, as well as horses—will be depleted to a point whence it cannot build up without assistance from this side of the Altantic. In short, we will have unprecedented demands for breeding stocks at home and abroad, and it becomes a world duty for us to equip ourselves to meet the inevitable calls for help.

It also should be possible to enlist in such a movement the co-operation of packers and wholesale purchasers and distributors of meat. In fact, should the gravity of the general situation justify such action legislation might well be enacted definitely forbidding the sacrifice of breeding stock, and the sale of animals below a certain age or weight, and establishing a thorough-going federal supervision during the Progress of the war.

I venture to offer these suggestions because the subject seems to me, and to practical students of the food production problems involved, to merit the official attention of our highest authorities, although I realize that such steps already may be planned.

UTAH DUROC POSSIBILITIES And Opportunities of the West.

By Edwin Brickert.

Utah the land of the golden west! Utah the home of the possibilities! Not boasting in the least, the writer has been in nearly every state in the Union, Mexico and Canada, and as he has always been a Duroc breeder or enthuslast, he has in his travels contsantly kept his eye scanned for the advantages and possibilities of his favorite breed, and he feels that he can truthfully, conscientiously, and with no exaggeration in the least, say that nowhere are the possibilities as great for the Duroc and her breeder and promoter as in this state. When I left the corn belt and came here where corn is hardly a profitable crop, I at first thought that profitable hog raising would be next to impossible, but when I beheld the abundance with which barley and wheat are produced and tested and found their superior feeding qualities over corn, I rejoiced more than ever that I was in this land of opportunities.

I have christened my surrounding country the "Land of Opportunities" for many reasons. First, the country is new, the land is new, an the majority of the people are new (ignorant of the value of purebred livestock. Therefore I call it an opportunity when a breeder that knows the business can leave a land of strife and constant competition and come to one where he is the only one, has it all his way, the people take what he says as gospel and he sells them his pigs as fast as they are born, and many of mine are sold that are not yet born. True enough we do not realize the prices that our eastern friends do, but we have two advantages over them. First, we have no sale expenses to break into our column, as all the big prices of the east are obtained through auction sales which are very expensive. Second, we produce our pigs so much cheaper. In this high, dry, altitude we do not need the excessive shelter that our friends of cold damp Missouri or Michigan must have. However some sows have raised large successful litters here with no shelter whatever the entire winter. In fact, I do not approve of this and while I am fanatic on the subject of housing and do more myself than is necessary, yet my lumber bills here are in no comparison with those I had in the east.

Then the feed. Our grain is as high or higher than it is in the east today, yet we raise so much more per acre and raise it so much easier than the central state farmer that we have cheaper feed per acre than our eastern neighbor. As we supply our moisture by means of irrigation, we never suffer from either a wet season or a drouth. We can regulate this to suit our taste and needs. We will never appreciate irrigation to its fullest extent until we live in the east, farm, and wait patiently for a rain to come and save our crops, or wait just as patiently for the rain to stop long enough that we may harvest our crops. In the east we spend our money for commercial fertilizer, manure spreaders, and try to learn the most skillful method of producing the maximum crop and supplying to our soil that which we need. But how different here. Our Utah farmers never heard of commercial fertilizer; many of them have their manure hauled out and thrown away; they farm in a slipshod manner that if we imitated them in the east we would raise nothing; yet they raise crops far superior to those of the east. And it is true that each year that the land is farmed here it is better, and the crops are larger. Then you may say that this must stop sometime; the crops will have to decrease and the land depreciate in time.

Land is cheap with us; water is plentiful in most places and more water is being produced all the time. Yes, land is still cheaper as there are thousands of acres waiting for the homesteader; land that will go ahead and raise a good crop the first year. No trees to cut and clear, just hitch up to the plow and say, "Getup."

The hog business in our state is new. There are not many registered in the state, but thanks to Providence and good luck most of the few that are, are Durocs. Utah owes most of their thanks for their good Durocs to a few good enterprising breeders who seeing the need of something better have imported in good hogs, and at very reasonable prices they have been sold to the neighbors, who are gradually, (some of them) waking up to the fact that they must progress a little or the world will entirely leave them behind.

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COMFORTABLE HOGS MAKE BEST GAINS

L. A. Weaver.

Farm animals must be comfortable in order that they do as well as possible. This is especially true of swine, since no farm animal suffers as much from extremes of heat and cold as the hog. Most men prefer to feed hogs in the spring and fall, for they say the hogs gain more at these times on the same feeds, than during summer and winter. This is perhaps in a large measure true only because they are more comfortable.

Some of the things which may be done to make fattening hogs comfortable:

1. Provide adequate shade. If the hog lot does not contain plenty of natural shade then artificial shade should be supplied. Hog cots, made so as to have at least one removable side, would be god to use at this time, or shade may be made by setting four ordinary fence posts so that they may be covered with planks or canvas.

2. Provide plenty of pure drinking water. This may be cheaply and satisfactorily done with a barrel waterer if an adequate supply cannot be had otherwise. Two or three pounds of water is stored in the animal body for every pound of muscle added, hence the necessity and economy of furnishing plenty of water to drink. Most feeders realize the importance of supplying plenty of drinking water, but it oftentimes is an easy thing to neglect. Some think if they are feeding slop that enough water is supplied. The water in the slop of course helps to supply the water requirement, but the hogs should have access to additional water.

3. Keep pools or wallows clean. Clean pools or wallows keep the hogs comfortable, permitting rapid and economic gains. This does not mean, however, that any kind of a wallow is good, for water which is stagnant and filthy may keep the hogs cool but the evil results from unsanitary conditions may more than overbalance the good derived from the protection from heat.

4. Keep hogs free from lice, by dipping, spraying or by putting hog dip in wallows.

5. Keep sleeping quarters free from dust, which irritates bronchial tubes, lungs, and other organs. This may be done by spraying with crude oil.

coughing and wheezing.

The foregoing measures are not usually expensive, but they are essential for maximum gains.

ASSISTING NATURE

"Our young rubber trees aren't

Louisville Courier-Journal.

Getting The Farm Work Done

From "Hoard's Dairyman"

This is the title of Circular 76 issued by the Agricultural Extension Service of the Wisconsin College of Agriculture. It embodies the thought and experience of a Wisconsin farmer whose name is not given but it is a most valuable and practical piece of suggestion all the way through. This farmer has 160 acres of land and by his wise forethought and planning finds it profitable to keep two hired men the year through. He says:

Every paper I take up has something in it about the great need for more food and I guess there is something to it, for we must feed a lot of people in Europe as well as our own growing population.

Naturally enough I feel the need of having more to sell at the prices which conditions seem to promise. I have been thinking several cold days this spring, as I rode the gang plow behind four big horses, plowing sod for corn, what I could do to help out.

One of my neighbors said one day, "Whats the use of plowing in such cold weather? We are going to have a late spring and there will be lots of time to plow."

Keeps Ahead of Work.

But I just told him to remember how cold it was last spring until long about corn planting time, and how it turned off warm and he still had to plow his big sod field before he could plant it. I asked him if he remembered how the horses on the gang plow lathered and puffed and had to rest part of the time because the sod had grown tough and the weather was warm, and the horses hadn't been hardened up by continuous work.

I made that mitsake once, too, but you bet I won't do it again if keeping the plow going whenever the ground is fit to plow will prevent it. Those cold days were great for plowing sod and hardening up the horses for the summer's work.

Busy in Fair Weather.

I have been trying for several years to work out a plan that will help in getting the work done. The great thing is to get everything done at the right time and to keep the odd jobs out of the way of the field work. The plan which has been helpful to me may be useful to others who haven't a plan as good or better, and if anyone has a better one I want to know about it for I'll adopt it at once. I believe every man who reads this can improve the plan and I wish he would.

Uncertainty of the weather and the shortness of the season in which to do a lot of things make farm management difficult. This plan is one for keeping pace with the seasons and making the most of good weather.

Field Work Comes First.

Rule 1. Field work must have all the time the weather and soil conditions will permit us to give it. This is the work which determines the amount of food we can grow. Nothing, except necessary work like feeding and milking, should be allowed to take us from the field work and it should be planned where possible to get the milking done and keep the horses working ten hours a day. The best farmer is the one who gets the other work out of the way and keeps the teams moving whenever the land is in condition for field work.

Wet-Land Work Fills In.

Rule 2. There is a lot of work that I call wet-land work; in this class falls the cutting of weeds and brush in the fence rows, the repairing of fences, the cleaning up of the wood lot, the repairing of buildings, the laying of concrete walks, the digging of trenches for laying water pipes from the well to the house and to the barn, and a score of other tasks which should be jotted down in a note book as they are thought of, and done when field work cannot be done. The rule is: "Plan no wet-land work when there is work in the field which can be done."

Jobs for Rainy Days.

Rule 3. There is a great variety of work which we can do under shelter and which we should do on rainy days. Shelling seed corn, mending the harness, and repairing tools are typical examples. If these matters are not cared for in rainy weather, they are in danger of stopping field work just when the time of men and teams is worth the most. It is necessary to have some means of thinking of these tasks when the rainy days arrive or we will let these golden opportunities slip by unimproved.

One farmer I know keeps his notebook in his pocket to jot down the tasks which can be performed on a rainy day. This enables him to plan quickly the work for a rainy day. In planning rainy day work, do first the jobs which are in danger of getting in the way of the next dry weather work. The rule is to leave no rainy day work to be done when it is not raining, for in this climate our porfits are limited by the amount of outdoor work we get done.

Work With Nature.

We farmers work with nature and must keep pace with her if we are to expect good crops. I have often thought of my work as "rush work" and "get-out-of-the-way work." My problem is to make all the odd jobs which can be done most any time of year if I can get at it, keep out of the way of the field work and the regular work in the dairy.

Rush Work Calls for Long Days.

Rule 4. Feeding and milking dairy cows, sowing oats, planting and cultivating corn, and harvesting oats are examples of work which suffer if not done at the right time. If we neglect our cows we shall soon have no milking to do. If we delay sowing oats until the warm, dry days of late spring, we will have a light harvest, and if we put off cultivating corn for one week after it is large enough to cultivate, the fields will be weedy and the crop poor. This class of work is rush work on my farm, because the profits depend upon doing as much of it as possible, and doing it well. In rush seasons we put in long days, expecting to ease up on rainy days or when the rush is over. At these rush times we follow the rule "do nothing today which can as well be put off until tomorrow."

Doing Get-out-of-the-way Work.

Rule 5. Work which we can do at any time within a wide latitude requires our very special attention, because the time comes when this work cannot be put off longer and it may stop the rush work. For example, seed corn may be tested and shelled any time after it is thoroughly cured, but if the work is neglected until the fields are ready to plant, then that most profitable work in the corn field may be delayed. This may be called "get-out-of-the-way work."

It takes more planning, more thinking, and more force of character to do this work in seasons when there is no rush work than it does to concentrate on rush work, for the season calls us to the rush work, while it is only by using our heads that we can get the other sort of work out of the way in advance.

The rule I try to follow when there is no rush work to be done is found in the old phrase: "Put off nothing until tomorrow which can be done today." We must apply this rule methodically and with industry if we are going to get ahead very fast. My note book in which I jot down the odd jobs which should be done has proved helpful to me.

These rules have been working themselves out in my mind during many years of experience. They have been useful to me. If they help you I shall be well paid for the trouble of writing them out.

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63 acres, nice home and outbuildings, good orchard, alfalfa, grain and other crops. This property can also be had on ten years' time, small payment down. If you are looking for a good farm, in a good locality, where you get good social conditions, schools—in fact, a place to make a home, either one of these farms will appeal to you.

In Cache valley we have one farm containing 160 acres, sixty acres of irrigated land, and 100 acres of pasture land. We are holding the irrigated land at $100 per acre and the pasture land at $10 per acre. This land is right under the canal, near a good town and railroad station. We are selling this land 10 per cent down, ten years on the balance.

We also have in the same locality several other nice farms to sell. We have one farm containing 69 acres, 8-room house, large barn, granary, wagon sheds and other outbuildings; a fine spring of water piped to the house; right on the Yellowstone highway; right near schools, church, railroad station. In fact, this is a beautiful place; large shade trees and lawn around the house. We can sell you this farm for $130 per acre. Ten per cent down and ten years on the balance.

On 14th South we have some acre tracts at $450 per acre; small payment down and long time to pay balance.

Just off from State street, on 16th So., we have three-room house and one acre of land for $1200. If you are looking for a nice little home, near the city, where you can raise chickens and garden, this is one of the most attractive places we have had for a long time.

We exchange farms for city property.

KIMBALL & RICHARDS
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district at a good buy. Ed. Pearson, Route A., Delta, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918. Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest,

H. A. PINEGAR
Wellington Utah

Your Chance to Make Some Money

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

Our Proposition

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. Albertson
604 Dooly Building
SALT LAKE CITY UTAH

FOR SALE OR EXCHANGE

Southwestern Idaho highly improved irrigated income property with no incumbrance. Splendid community, near good town. Good water right. Price right and terms easy. Will consider an exchange for developed or undeveloped irrigated land in eastern Idaho or Utah where sugar beets are grown, also water logged land where drainage is available, if price is right.

Farm Owner, care of
UTAH FARMER
Lehi, Utah.

WYOMING RANCH BARGAIN

287 acres in Wyoming, all good bottom land, plenty of willows for shelter, 12 cattle, good young team, machinery and implements, 16 miles from railroad. Price $10,500, will consider trade in northern Utah.

FEDERAL LAND CO.
Ogden Utah

HOMESTEADS

For the best homesteads in Utah, write

GEORGE A. COLE
Monticello, Utah.

Order——Now

Stover Silo Fillers

Built for Heavy Work
—and Lots of it—

Do The Work Quicker---More Satisfactorily

because of the efficient design—big capacity, many convenient features that make the work easier inside and outside the silo, and the clean **SHEAR** cut. Get our descriptive circular free.

Call, write or phone our nearest branch.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Don't——Wait

BOARS FOR SALE

BALLAMOAR FARMS

BERKSHIRE JERSEYS

A few choice boar pigs. These are regular Ballamoar Farm's quality and pigs from this farm have made good as many Utah farmers know and buy only the best. Write for prices.

Caine Livestock Co.

RICHMOND UTAH

$40.50 Los Angeles and Return

Tickets on Sale Daily

June 15th to Sept. 30th

Diverse Routes Via Rail and Steamer, Including San Francisco

Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.

Stopovers at All Points. No Validation Fee.

Final Limit October 31, 1917.

SALT LAKE ROUTE

For Reservations and Routings, see Local Agent, or Address

WM. WARNER, A. G. P. A., Salt Lake City, Utah.

Send in your order for Butter Wrappers TODAY. Get the best.

NEED OF EXPERIENCED FARM HANDS

Garland, Utah.

Utah Farmer:

A few tracts of land, tho small in area, have been planted to corn this season in the Bear River Valley, and the farmers are pleased to notice the rapid growth and the great amount of fodder that can be produced per acre. Many tracts will yield from 15 to 20 tons per acre. These are mostly experiments and will be used in a small way to feed cattle and sheep by cutting into small pieces with ensilage cutter and gas engine. By another season many more acres will be planted and a number of silos built, thus increasing the feeding capacity of our soils and making available more acres for the production of other crops.

We are proud of our courageous farm boys volunteering to join the army and navy, but one draw back is now facing those farmers who remain at home. We have increased our farm planting so that larger crops will be produced, but harvesting is confronting us with a shortage of farm labor. A number of pretending farm laborers are applying for work, but their services are not that of the trained farm hand, and unless the season is exceptionally long many acres of the late crops will not be harvested. If the farmers lose part of their crops this fall less acres will be planted next season and the consequence will be a smaller harvest, smaller loaves and less of them. Unless our farm boys are left at home and the war continues for three years, some of our brave farm boys will be hungry in the trenches. Forty eight hours without food and a barrel of ammunition, has not as much effective force as a knapsack full of hardtack and half a barrel of ammunition. Train the inexperienced farm hand to be a solider. It takes three years at least to train a new man on the farm. Some of our threshing machines won't run for want of help.—John P. Holmgren.

HOW TO PREVENT MOLD IN CHEESE

Ft. Duchesne, Utah.

Utah Farmer:

Gentlemen:—Last summer I followed the instructions found in your paper for making cheese. The recipe was called "Making cheese in the home with five gallons of milk." The result was very satisfactory except for mold. After a cheese had been cut for about two weeks, mold appeared all through the cheese to such an extent that there was quite a loss. Could you suggest a remedy?

Very respectfully,
Mrs. Geo. E. Young.

Answered by G. E. Frevert U. S. Department of Agriculture.

The difficulty with the cheese was probably that it had been cut open and allowed to become infected with mould. Most any cheese is liable to become mouldy after it has been cut, especially if it is held in a place where mould spores are numerous. I would suggest that when a cheese is cut, the newly cut surface of the part of the cheese which is to be kept, be coated with hot paraffine, or butter immediately after it has been cut. This prevent the cheese from drying out and will also tend to keep the cold from getting into the cheese. I take it that this cheese was probably rather open in texture due possibly to insufficient pressing. A cheese with an open texture is more liable to be infected with mould than a cheese with close texture.

I believe that by following these suggestions the trouble with mould can be practically eliminated. It should be borne in mind, however, that after cheese is kept in a place where mould spores are quite numerous the chances of eliminating mould are smaller than where the cheese is kept in a room with fairly good ventilation and freedom from mould.

When you answer an advertisement always mention the Utah Farmer.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Durocs."

FOR SALE

One pair of Belgain Mares, four years old and weighs fourteen hundred pounds each. Inquire of

D. G. CALDER
R. D. 1, Box 131 Provo, Utah

ALFALFA SEED

Good grade, free from weeds. Price 11½ cents per pound. In lots of 1000 pounds or more, 5% discount. Samples on request. Sow in August and September for best results.

MARCUS SKEEM
Oasis Utah

Wanted to hear from owner of good farm for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.

FRANK M. DRIGGS, Ogden, Utah.
Phone 108 Ogd n, or 8-J Huntsville, Ut.

40 HEAD HEIFERS

ALL HIGH GRADE HOLSTEINS AND HERD BULL FOR SALE

Coming two and threes, mostly threes. First and second calves. 18 cows now milking. All bred to pure bred bull. Prices $65.00 each head including bull. Selected animals will cost more.

O. L. KITTINGER
Lehi Utah

HOLSTEIN CATTLE
Purebred Registered
Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 279, Brattleboro, Vt.

EAR TAGS PERFECT

Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

Gather beans and peas before they shatter out, dry for ten minutes in warm oven to insure against getting wormy, and store safely. These beans may not be used as seed in the spring.

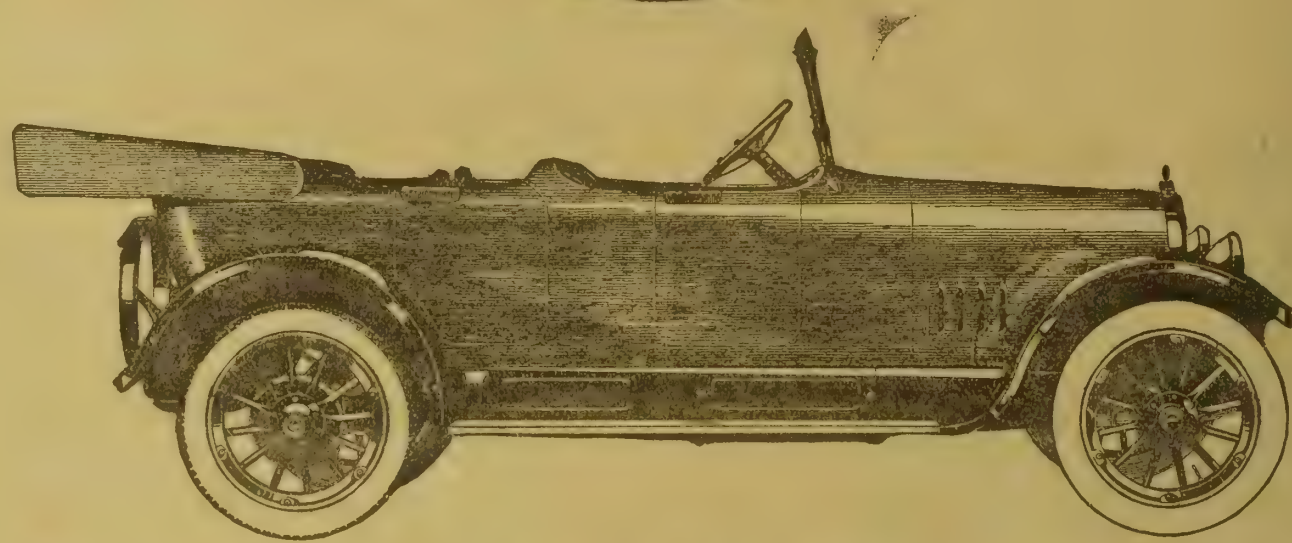
Seven Passenger

$1295

f. o. b. Toledo—Subject to change without notice

Willys SIX

L Head Type of High Power



A New Wonderfully Balanced Six

Sturdy Light Weight—Abundant Power

This announces a brand new development in Sixes.

Here it is at last!

A popular priced *Light* Six with *weight and power in scientific balance.*

Think what that means.

Economy and durability in combination with six cylinder advantages at last an accomplished fact.

Don't ask any more why you can't get a durable light weight six with real six cylinder performance.

You can—it's this new Willys Six.

By scientific designing with the aid of our great experience in building Sixes, we have produced a *lighter car* without sacrificing sturdiness.

Its forty-five horsepower motor combined with its light weight, makes it a wonderful performer.

Quick as a flash on the getaway; speedy; surprisingly economical, yet with worlds of power and the sturdiness to support it.

Think what this means figured
—in greater gasoline economy
—in additional tire mileage
—in an easier car to handle.

Now let the Willys-Overland dealer demonstrate the wonderful performance of the New Willys Six—we want you to sense what this new balance between power and weight means in an economical, durable light Six.

We want you to know, too what a wonder the New Willys Six is from the standpoint of easy riding and easy handling.

Also we want you to know what a beatiful car it is—long, sweeping graceful lines—one of the year's most advanced models—a perfect beauty.

And the price!—$1295 complete!

It's the Six you've longed for—go in and see it now—before our dealers are loaded with orders for more Willys Sixes than they can get.

Motor 3½-inch x 5¼-inch
45 horsepower
4½-inch tires
120 inch wheelbase
7-passenger capacity
Finished in olive green

Catalog on request. Please address Dept. 1150

Willys-Overland Inc., Toledo, Ohio

Willys-Knight and Overland Motor Cars and Light Commercial Cars

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 4. LEHI AND SALT LAKE CITY, UTAH AUGUST 25, 1917

Pointers For The Conservation of Food Products

J. C. Hogenson, State Leader Boys and Girls Club Work.

Getting Your Garden Out Of The Ground.

The best rule as to when to pick your fresh vegetables for immediate use is to examine them daily as they approach the proper stage for eating. The fast-grown vegetable is usually the best vegetable to eat, but it is also the one which passes its prime most quickly.

When Beans are Ripe. Open a pod, see how well the beans inside are developed and compare the appearance of the pod you have opened with the others on the vine. When you find some that seem, on opening, to have developed enough, pick others of the same general appearance. With beans, as with most other vegetables, be discriminating when you start picking, and pick only the largest at first.

When a Beet is Ready. A beet is considered ready for marketing when the bulb has grown to a size of from an inch and a half to two inches in diameter. Beets larger than this are apt to be tough and fibrous. In the home garden beets may be picked when even smaller than this. Pull the whole beet. Discard only dead leaves, for beet tops make excellent greens.

Be Careful in Picking Corn. The time to pick sweet corn is when its sugar content is highest. This is when the kernel is fully developed but is still in the dough or milky state. By pulling back part of the husk without removing the ear from the stalk, you can examine the kernels and then judge other ears in comparison with the outside appearance of the one you have examined.

Picking Your Peas. The pea is highly perishable, quickly losing flavor and tenderness after picking, and also so if left on the vine too long. The pea must be watched even more closely than the bean and the corn. It will particularly be found that some pods will be ready for picking while others on the same vine are a week behind in their development.

When Eggplant is Ready..... The eggplant is ready for use as soon as it has attained its form and is well developed and colored.

Don't Let Cucumbers Get Ripe. Cucumbers must be eaten when very green. They must also be eaten soon after they are picked, if their slices are to be found crisp and of good flavor. Most cucumbers commonly grown in America reach a size of from six to eight inches long, and about an inch and a half in diameter. When yours reach this size pick them.

When to Pick Radishes. Radishes are picked about as soon as they are large enough to furnish one or two bites, rather than when they mature. The big radish is not nearly so good to eat as the half-grown one. Always clear out the largest first, so as to give the very small ones room to grow.

How to Gather Spinach. In gathering spinach take the whole plant, root and all. It is best to pick the larger plants first. This will leave more space for the smaller plants to grow in, and those which have been held back by their neighbors will then rapidly pick up.

When to Pick the Tomato. In the home garden tomatoes may be allowed to ripen on the vine, though tomatoes which are to be sent to market are picked green. The ripe tomato has a full, deep-red color, but is also firm. Do not delay picking until the fruit has become soft and mushy. For canning, the riper the tomato can be successfully handled the better will be the finished product.

How You Can Help the Onion. When your onion plants are well on their way to maturity you can force the growth of the bulb by preventing the continuous growth of the tops. This is often done by rolling an empty barrel along the rows, crushing the tops. When the tops are

(Continued on page 12)

Our fruit crop this year will be one of the largest ever harvested.

Higher Prices Are Predicted For Cattle, Sheep and Hogs. Are You Going to Help Increase the Supply?

SUGAR BEETS

INFESTED BEET FIELDS

(Written for the Utah Farmer)

Every beet grower should go over his beet field and examine the spots, if there are any, where the beets are not doing well.

Perhaps it is an alkali spot where a little drainage would help. A releveling that will take not more than a day or two with a team and fresno may greatly help in leveling off the high spots and filling the low ones and thus save a lot of time in irrigating and make infinitely better use of irrigation water and thereby eliminate pools where the water accumulates and scalds the beets and other crops and also cause the high spots to properly share the irrigation flow.

In some districts the nematode is getting a bad start and the nematode is hard to get rid of. Then there is the root aphis, too, that is cutting down the yield. In a few instances, we find that the aphis is attacking corn that followed infested beet fields. Wheat is a good crop to put in after both the nematode and the aphis. Wheat is a good price, too, and the very best fields of wheat to be found anywhere are the fields where beets were previous grown. Then there is root rot that is bothering some fields. Rotation is about the only remedy for that, too. Leaf spot or Cercospora may infest a new field and it does not always mean that beets on the same field the following year will be bothered with leaf spot. A very good remedy is to gather the tops and crowns at harvest time and silo them. The fermentation seems to destroy the bacteria. Then, too, deep fall plowing will aid to hold the leaf spot in check.

Perhaps only one side of the beet field will be found to be infested. Make a record of the portion that is infested and prepare to have relief. It is extremely fortunate that a sensible rotation will correct or at least hold in check most of these troubles. Rotation is absolutely essential for the purpose of maintaining the fertility of the soil.

There is no better time than right now to prepare a definite acreage for beets for next year. If you put in corn this season, following an old pasture or an alfalfa field start as soon as the crop is off. Don't wait till you get too busy to fall plow that corn field. Then you have a splendid start for next years' beet crop. Plow deep. If possible spread some manure before plowing.

The field that is in potatoes this year will also be a good place for beets next year. Get that field also plowed this fall. Fall plowing is not only the best practice for the beet grower but it is a great relief against the rush of urgent spring work. It takes much less work in the spring to prepare land that was fall plowed.

Enlarge your beet acreage by draining and otherwise reclaming that water-logged part of the field. Get the drains in this fall and turn on the water and wash out the mineral as much as possible before winter. Then plow. In February are early March, sow sweet clover. See that the seed is inoculated and scarrified.

Mow the first growth early in June; it will make splendid hay and then plow the second growth under. Even though it would cut as much as two tons of hay per acre, plow it under next fall. Turn it under eariler than you commonly plow in the fall. Heat and moisture are necessary to decay that green growth. If the plowing is delayed too late, the weather may get cold early and thus check the decay of that organic matter. It ought to be well rotted before winter comes on. That decaying organic matter will generate a gas that will also aid in liberating other elements of plant food and if beets are put on the following spring, a maximum crop may safely be expected. Sweet clover and sugar beets are two of our very best pioneer crops in reclaiming alkali soil.

In some districts, the sugar beet acreage can be doubled by making intelligent plans for drainage. It will be worth while to go out over your beet field right now and get acquainted with conditions.

Don't wait till harvest time for it is not always easy, then, to determine just what was wrong and what it was that caused the beet yield to be light in spots. It is unsafe to conclude that you will quit beets for a year or two. Beets are a good cash crop and the crop is needed in your rotation. If you are unwilling to practice a sensible rotation, it will be necessary to conclude that you are satisfied with three or four tons of hay per acre when you ought to have six tons. Alfalfa ought to be plowed at intervals. Reseed some of the worn land and prepare for a big crop on that infested alfalfa field. Instead of mowing the third cutting, it will be a mighty good investment to turn that third growth under. Of course, forage will be high again this winter but the third growth will be a better investment for you to plow under, if it is turned under early and allowed to rot before cold weather. Be sure that there is plenty of moisture to hasten the decay of the vegetable matter. Take a few hours off and study the fields right now.

THE PROPER SIZE OF THE IRRIGATION STREAM

Intelligent irrigators realize that economy in the application of irrigation water to light soils is dependent very largely on the size of the stream which is used and upon the area of land to which it is applied at one time. There is tremendous need for improvement of our Utah practice in the adjustment of the size of irrigation streams to the poracity of the soil which is irrigated. Recent observations in the Southern part of the State brings this phase of irrigation work very forcibly to mind.

Experimental results recently published in Bulletin No. 3 of the California State Engineering Department indicate very strikingly the effect of the size of stream on the quantity of water which was required to cover typical light, porus soils in California. These experiments indicate that when the size of stream applied to one-acre tract was equivalent to a little less than 5 cubic feet per second or about 2250 gallons per minute nearly 3 acre-feet of water was required to cover the one acre. When the effective size of irrigation stream was increased about four times, or in other words when the same stream was applied to a piece of land of only one-fourth the area, very much less than one-fourth of the proportionate quantity of water was required, the entire tract of land being covered by an average of seven-tenths of a foot, or seven-tenths acre-feet per acre. Irrigators can ill afford to ignore this very important phase of irrigation practice. They should attempt to study their various soils with care in order that they may obtain a proper balance between the size of stream used and the width and particularly the length of land to which it is applied. The efficiency of applying a given stream to large or small tracts may easily be judged by the quantity of water which is required to cover the land in one irrigation. In case much over 7 or 8 inches depth is required at one time it is quite safe to conclude that some of the water is being lost by deep percolotion and that such practice is not economical.—Professor O. W. Israelson, Utah Agricultural College.

SILLY CUSTOM

"Did her father give the bride away?"

"No. He said that would be a silly custom when he knew very well that in a few weeks they'd both be back living at his expense."—Detroit Free Press.

Agricultural College of Utah

Logan, Utah

Agriculture—The food supply of the nation has become a question of prime importance. Upon the proper husbanding of it depends ultimately the power and the future of the nation. Science holds the keys. Trained agriculturists are needed to unlock the treasure vaults of the earth.

Home Economics—Parallel in importance to the production of food is its conservation and economical use. Ignorance in the home of the Nation will defeat our armies abroad. Trained women are needed to teach and practice the principles of scientific home economy.

Agricultural Engineering and Mechanic Arts—Positions for men trained in Mechanical Arts far exceed in number the available men to fill them. The graduates of the College in these lines have long since been placed in responsible and lucrative positions. **What the Great War is now destroying must some day be rebuilt and reconstructed.**

Commerce and Business Administration—We are living in a nation that is primarily indusrial. We are living also in a commercial age—an age of Trade and of Finance. Men cannot be found to supply the demand for $5,000 and $10,000 positions. The call is for men who know the principles of business efficiency.

General Science—Mastery of the fundamental sciences, (chemistry, physics, bacteriology, biology, mathematics, public health) and of the arts (music, literature, art, etc.) are essential to progress.

Military Science and Tactics—The Utah Agricultural College now constitutes a unit of the Reserve Officers' Training Corps, the purpose of which is to train those who desire it, for commissioned officers in the United States Army.

These Courses of Instruction are Open to You at the Utah Agricultural College.

Regular entrance to Baccalaureate courses prescribe high school education, but

Those 18 years of age or over who have had no high school work are eligible to enter without examination any courses which they can profitably carry.

Fall term open September 10, 1917.

Write for catalog and illustrated circular.

Address: The President, Utah Agricultural College, Logan, Utah.

ESTABLISHED 1904.

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, AUGUST 25, 1917 No. 4

Beet Top Silage

An average acre of beet tops and crowns can be made to yield from four to six tons of silage, if properly handled, equal to the very best corn silage. Such is the conclusion of James W. Jones the federal government expert on sugar beets, after a detail study of the subject in Colorado and elsewhere in the beet growing districts where siloing the tops and crowns have been practised.

It does not require an expensive silo. The natural earth silo has been successfully used. The plan is very simple and does not involve a dollar of cash outlay.

Select a well drained location handy to the winter feed yards. Plow and excavate a trench, eight or ten feet wide, four to five feet in depth and the length will be determined by the amount of tops and crowns available. The excavating may be done any time now before the beet harvest starts. Spread six or eight inches of straw in the bottom of the excavation and around the sides; then draw in the beet tops and crowns and spread another layer of straw about six or eight inches deep; take the team off the wagon and hitch to the field roller and drive the roller over the straw and tops several times to pack and exclude the air. Let a boy ride a horse around the edge of the silo and pack the edges where the roller can not reach.

Repeat the operation every two days, or for that matter, every day, during the beet harvest period. It is important to not allow the tops to wither and dry too much before they are hauled into the silo. The moisture is needed and the straw will take up any excess moisture. The straw also serves as a binder and prevents undue evaporation of moisture while the silo is being filled. The straw which comes in contact with the earth will mould but only a thin layer will spoil and may be readily flaked off when the silage is being fed out during the winter.

Both ends of the excavation should have a moderate slope so the wagon load of tops may be driven in at one end and out at the other and it also makes it convenient to roll the contents down with the field roller. Where no field roller is available for packing and firming the straw and tops, the firming may be done by tamping with the feet and by riding a horse repeatedly over the contents. Layer after layer of tops with crowns and straw may be placed, day by day as the beet harvest progresses. If desired, a few layers may be put on even after the excavation is filled.

Then cover with earth, eight or ten inches thick. The last layer before putting on the earth should be straw as a thin layer next to the earth in the bottom, on the sides and on top will mould and must be thrown away and therefore it is best to use straw next to the earth. The earth will weight the contents down and also exclude the air. Do not leave a ventilator, any where. The silage needs a tight seal just as the concrete or stave silo is calculated to be sealed over the top. Do not add water. If the tops are gathered without too much delay, there will be sufficient moisture in the tops and crowns. It is best to sprinkle some salt over each layer of tops. The silage is more palatable.

Dig a trench around the finished silo so that surface water will not bother. It requires from four to six weeks to properly ferment and develop good silage.

When ready to feed, remove the earth off about thirty inches across one end. Strip the layer of straw away and discard and then, with a hay knife, cut down across the silo, much after the way hay is cut in the stack If a large number of stock are to be fed, the cut should be wider than thirty inches. There will be little or no more spoiling than occurs when feeding from any silo.

Care should be used in gathering the tops from the field that dirt is not also gathered as dirt will damage the silage.

The fermentation appears to largely correct the cathartic salts contained in the beet crowns which, ordinarily, more or less "scour" cattle and other stock.

In one feed lot where beet top silage was the principal ration, along with alfalfa hay, the steers made an average gain of better than two pounds per day last winter and this included the shrinkage on the steers as they came into the feed lot and also the shrinkage on outgoing shipments.

There is no arbitrary size for the excavation. Make it large or small, estimating the size according to the amount of tops to put into it.

All kinds of stock eat the silage. The feeding value compares with good corn silage.

Yes, it takes time at a busy season but the feeding value of the tops and crowns is very much greater than when fed in the usual way. Of course, any standard silo may be used but the earth silo is available to every one and without a cash outlay.

This expensive water distributing system at the Utah Experiment Station has indirectly paid for itself many times over by making it possible to determine the most economical methods of applying water to our crops. Both the individual farmers and the state at large prospers because of such knowledge.

Prepare Storage For Crops

Dr. R. J. Evans.

This year's overproduction of crops, coupled with a shortage of freight cars will cause a glutting of the market, considerable loss, and the forcing of low prices to the farmer, unless some measure of protection is taken immediately. If we would protect ourselves and the Nation's food supply and transportation, we must provide adequate storage facilities to hold our crops until the country needs and can handle them.

Utilize rainy days and any other spare time in doing this work from now until the last crop is harvested. Provide for grain and hay first and for root crops and potatoes later. Every farmer should make farming a real business from the turning of the first furrow till the crop or final stock product is marketed. Frequently the saving due to proper storage or the holding of a crop until the surplus is moved is sufficient to pay for the storage building in one year.

Grain bins should be proof against mice, rats, and sparrows. Where your old bins cannot be economically made proof against these pests use poisoned baits or traps.

A shortage pit or cellar for potatoes and other root crops should be built on high dry ground, well drained. It should be sufficiently deep and well covered to protect against frost, well ventilat- ventilated, and clean. Old pits should be thoroughly renovated and disinfected. They should have no bad odor. For the storage of large crops of potatoes, it is well to make the pit large enough to drive the wagon right into one end and out of the other, unloading and reloading into and from bins on each side. Potato seed should be stored in crates where they will be kept free of mixture.

The loss through poor storage amounts to an enormous sum each year in the United States. Last year some Utah farmers lost fully one half of the stored potato crop. Bins of oats and barley could be seen covered with six inches of empty hulls left by mice and rats.

To waste a crop produced is far worse than not to have produced it as it has taken fertility, water, and human effort to produce it. Let us one and all do our part to avoid waste.

DAIRYING

CHEESE MAKING ON THE FARM

Linwood, Utah.

Western Dairy Division,
Salt Lake City, Utah.

Dear Sirs:

In the Utah Farmer of July 21, I see that you would advise in cheese making. I would like information on ranch cheese making on a small scale.

Thanking you in advance for advise you may give.

Respectfully,
(Signed) Mrs. Kate Stevens.

Answered by J. E. Dorman, In Charge of Western Dairy Investigation.

I have your letter of August 4th requesting information concerning the manufacture of cheese on the farm and in small quantities. You do not state what kind of cheese you wish to make, but under the conditions usually found on the farm the following varieties of cheese can be made successfully, cottage cheese and Jack cheese. Cottage cheese is usually made from skimmed milk or a mixture of skim milk and butermilk and Jack cheese from partially skimmed milk.

The public generally does not realize the food value of cottage cheese and in these times of high prices, many households could effect a considerable saving by substituting cottage cheese for meat for at least one meal a day. According to the specialists of the U. S. Department of Agriculture cottage cheese is one of the important meat substitutes. It contains a larger percentage of protein (the chief material for body building than most meats and furnishes this material at a lower cost. In every pound of cottage cheese there is about one-fifht of a pound of protein, nearly all of which is digestible. Meats, on the other hand, usually contain less protein and besides have a certain waste, such as bone and other inedible material. A pound of cottage cheese daily would supply all the protein required by the ordinary adult engaged in a sedentary occupation.

The following table shows that cottage chese is much cheaper than most meats in furnishing protein for the diet.

For supplying protein, one pound of cottage cheese equals:

1.27 pounds of sirloin steak.
1.09 pounds round steak.
1.37 pounds choice rib beef.
1.52 pounds fowl.
1.46 pounds fresh ham.
1.44 pounds smoked ham.
1.58 pound loin pork chop.
1.31 pounds hind leg of lamb.
1.37 pound breast of veal.

In addition to protein, energy for performing body work must be furnished by food. As a source of energy also, cottage cheese is cheaper than most meats at present prices. The following table shows the comparison when energy is considered.

On the basis of energy supplied, one pound of cottage cheese equals:

8 1-3 ounces sirloin steak.
11¼ ounces round steak.
11¼ ounces chuch rib beef.
10¾ ounces fowl.
5½ ounces fresh ham.
5 ounces smoked ham.
6 ounces loin pork chop.
7 1-3 ounces hind leg of lamb.
12¾ ounces breast of veal.

Direction For Making

Cottage Cheese. This cheese can be made from skim milk which might otherwise go to waste. After removing the cream for coffee, the skim milk that is not needed for puddings, gravies, etc., can easily be made into cottage cheese. If the milk is sweet it should be placed in a pan and allowed to remain in a clean, warm place at a temperature of about 75 degrees until it clabbors. The clabbered milk should have a clean, sour flavor. Ordinarily this will take about 48 hours, but when it is desirable to hasten the process, a small quantity of clean-flavored soured milk may be mixed with the sweet milk. As soon as the milk has thickened to the consistency of thin jelly, it should be cut into pieces the size of a walnut, after which the curd should be stirred thoroughly with spoon.

Place the pan of broken curd in a kettle of hot water so as to raise the temperature to 100 degrees F. Cook at that temperature for about 20 minutes, during which time stir vigorously with a spoon for one minute at five-minute intervals. At the conclusion of the heating, pour the curd and whey into a small cheescloth bag (a clean salt bag will do nicely) and hang the bag on a fruit strainer rack to drain. After five to ten minutes, work the curd toward the center with a spoon. Raising and lowering the ends of the bag helps to make the whey drain faster. To complete the draining, tie the ends of the bag together and hang it up. Since there is some danger that the curd will become too dry, draining should stop when the whey ceases to flow in a steady stream. The curd is then emptied from the bag and worked with spoon or butter paddle until it becomes fine in grain, smooth, and of the consistency of mashed potatoes. Sour or sweet cream may be added also, to increase the smoothness, palatability, and flavor. Then it is sealed according to taste, about one-quarter ounce to a pound of curd.

Jack Cheese. The cheese is made every morning from nights and mornings milk. The mixed milk should not test higher than .16% acidity and should have a clean flavor. Standardize the milk to 3.1 or 3.2% fat. Heat the milk to 86 degrees F. and add ½ to 1% commercial starter (clabbered milk). Add sufficient rennet (about 6 oz. per 1000 pounds milk) to curdle the milk ready for cutting in 25 minutes. (Dilute the rennet about forty times its volume with cold water before adding). The time for cutting is determined by the same method as for Cheddar, testing the curd for firmness. The curd is also cut in the same manner as for Cheddar. After cutting, the curd should be allowed to stand a few minutes before stirring, then stir gently with the hands. Stir the curd sufficiently during the cooking process to prevent matting. The heat should be applied ten minutes after cutting and the temperature raised to about 110 to 112 degrees F. in 35 minutes or at the rate of about 3½ degrees in five minutes. It will take about 35 to 45 minutes to firm the curd after it reaches the maximum temperature, but the only method for determing the time for dipping should be the firmness of the curd. The curd should be slightly rubbery but not so firm as curd for Cheddar cheese. The whey is removed and the curd stirred sufficiently to remove the excess whey. (Too much stirring injures the curd; do not handle it roughly.) Salt is added while the curd is warm at the rate of 3 pounds per 100 pounds milk and after it is thoroughly mixed and dissolved the curd is ready to press.

Molding the cheese. The press cloths used for molding the cheese are made of heavy sheeting and are about 34 inches square. The cloths are laid out evenly, one over the other, and are spread over the top of a large open pail. Push the center down to the bottom of the pail, leaving the edges hanging over the sides. Sufficient curd (about 7 pounds) to make a six pound cheese is weighed out and poured into the top press cloth. The four corners of the cloth are caught up with the left hand while with the right hand the curd is formed round and the cloth straightened. The cloth is now taken up tightly over the curd with the left hand, while the cheese is given a rolling motion on the table, with the right hand, pressing at the same time to expel the whey. This twists the press cloth tightly over the curd, where it is tied with a string. The excess cloth is spread out evenly over the top of the cheese and it is then ready for the press.

Pressing. The cheese are pressed between two wooden planks, 12 inches x 1½ inches surfaced; the length will depend upon the number of cheese pressed or the size of the room. The first board should be laid with a slight slant to permit the whey to drain off readily. The cheese are then placed in the center of the board about one inch apart after which another board is placed on top. If necessary the cheese can be placed four or five layers deep if a board is placed between layers. Best results can be gotten by placing the boards and cheese in an ordinary upright cheese press. Another method is to brace the first board, near a wall, about three feet from the floor; then level with the top board a lever (2x4, 5 feet long) is fastened to the wall with the top a hinge which will allow it to be raised or lowered. These levers, one every four feet, are laid over the top board and a weight (about 100 pounds is fastened to the other end. This acts as automatic press. The cheese are left in the press about fifteen hours after which they are removed, the press cloths taken off, and the cheese laid on the shelves. If the press cloth sticks to the cheese, pulling out pieces of cheese when removed, this is a sign that the surface gets too dry while in the press. Water thrown on the cheese occasionally or the room kept moist will prevent this. In about two days after removing from the press the cheese should be dipped in hot (200 to 220 degrees F.) paraffine and held there for ten seconds. This will prevent shrinkage and give the cheese a neater appearance.

Half Skim Jack Cheese.. Milk used for half skim Jack cheese should test 1.8 to 2% fat. The nights milk may be skimmed and the skim milk mixed with an equal amount of mornings whole milk. The rate of rennet extract should be decreased sufficiently to curdle the milk ready for cutting in about 45 minutes. The cooking temperature should be lower; about 104 to 106 degrees F. and the whey should be removed when the curd is about

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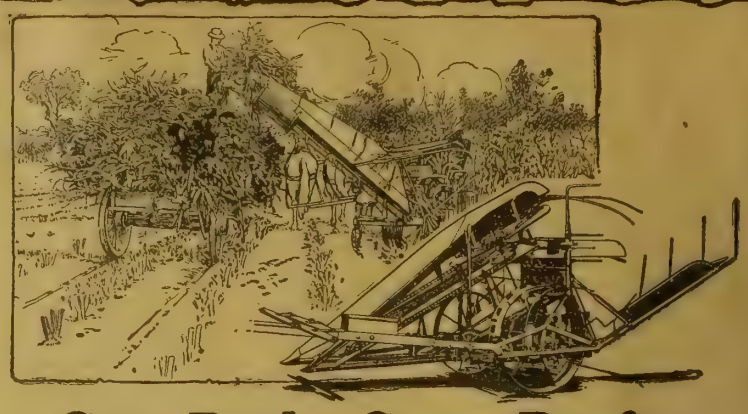

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Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

the same firmness as for full cream Jack. The cheese should not be paraffined as they are usually dried for grating purposes.

Several other varieties of cheese can be made on the farm, though it requires some special training and experience that is difficult to acquire anywhere except in a factory. Learning to make cheese by mail is difficult and has not proven very successful. Practical work in a cheese factory is necessary in order to make cheese of the Cheddar type.

SUN FLOWERS FOR SILAGE

The Western Dairy Division at Salt Lake City received a question about the use of sun flowers for silage and feeding of it to dairy cows and answered it as follows:

We have no information on this subject except that concerning sunflowers used for silage and fed to dairy cows.

Sunflowers silage has been tried out in a limited way at one of the State Experiment Stations here in the Northwest, and I have reports that several silos in different sections of the West will be filled with sunflower silage this fall. The report we have was furnished by one of our field men, and is as follows:

"The sunflowers used for silage were Mammoth Russian. Several smaller varieties have been grown but this large variety is considered the best for silage. They were drilled in rows twenty inches apart and irrigated. They were planted about the middle of May but can be planted earlier. Fifteen pounds of seed were used per acre. In case this crop is grown under dry farming conditions the seed should be planted in rows thirty to thirty-six inches apart. The yield last year was thirty to forty tons per acre."

In testing out the value of sunflower silage, the report states that a part of the herd was fed on corn silage and a part on sunflower silage. The cows receiving the sunflower silage kept up their flow of milk as well as those fed on corn silage. Some of the big Holstein cows took as much as ninty pounds per day. No unfavorable results could be noticed in the flavor of the milk. While this experiment has not gone for enough to reach any definite conclusions it, indicates that sunflowers may be considered a good crop for the silo in some localities in the Northwest.

Has O. K. of the West

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Salt Lake City, Utah.

REPORT OF THE WELLSVILLE COW TESTING ASSOCIATION FOR JULY 1917

By LeRoy W. Hillam.

Hot weather and flies caused a slight drop in the average production of the Wellsville Cow Testing Association for the month of July. During this period 419 cows were tested with an average of 748 pounds of milk and 29.8 pounds of fat per cow for the whole association. This is practically 3 pounds of butter fat per cow lower than last month's average. Of these 419 cows 70 are on the "Honor Roll" each having produced over 40 pounds of butter fat for the month. Nineteen of this number produced over 50 pounds of fat, while two produced over 60 pounds. Ninety three cows produced over 1000 pounds of milk.

The high cow for this month is Rosie, a grade Holstein owned by John Stuart. She produced 1628 pounds of milk testing 4% producing 65.1 pounds of butter fat. This is the second month this cow has lead the association out of the three months in which she has been fresh. Second place goes to John Darley's grade Jersey Blooch, she produced 1398 pounds of milk testing 4.4% making 61.5 pounds of fat. Ronnie II, a grade Jersey, also owned by Mr. John Darley is third with a production of 1166 pounds of 5% milk producing 58.3 pounds of fat.

Twenty three herds with a total of 211 cows out of the 46 herds on test averaged over 30 pounds of butter fat per cow. The high herd average for the month again goes to John Darley's 21 grade Jerseys. These cows averaged 1071 pounds of milk and 48.2 pounds of butter fat per cow. This is the sixth month straight that Mr. Darley's cows have lead the association. Second Herd for the month is LeRoy Green's mixed herd of four cows whose average production was 40.9 pounds of butter fat per cow. Third place goes to Mr. John Brenchley's eight grade Holsteins and Jerseys which averaged 38.7 pounds of butterfat per cow. The average production for the lowest herd this month was 11.4 pounds of butter fat per cow. This is 37.8 pounds of butter fat less per cow than the average of the highest herd for the month. This means a profit of $18.90 per cow in favor of each animal in the highest herd. From these figures one can readily see that good cows are the only kind conductive to high net returns.

Six more 'Boarders" were disposed of as Beef and a few more are being threatened with the butcher's ax if they do not improve their production.

The Association is now on its last month of its year's runnning and a reorganization for the second year of testing is now being carried on by Mr. Hillam, tester for the Association. Persons wishing to enter the Association for the second year of running kindly see Mr. Hillam and make arrangements at their earliest opportunity.

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Be your own weighmaster. A dependable, all-purpose scale on your farm makes and saves you many a dollar which otherwise you would lose without knowing why or where.

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Sold under a positive 10-year guarantee of accuracy. Solid steel frame locked at corners, solid steel joists, knife edge bearings protected against frost and clogging, and other distinctive features in design and construction make the McDonald trouble-proof, repair-proof and permanently reliable. Many of them in use over 20 years are giving satisfactory service today.

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PROTECT THE CROPS.

Much Is Lost Each Year From Disastrous Fires.

Many of the fields of grain throughout the state will be in danger of destruction by fire as the harvest approaches unless measures are taken to safeguard them. Especially is this true of the dry-farm crops where the june grass ripens early.

In the past much has been lost each year by disastrous fires in grain fields. Sometimes the stubble gets ablaze and before control can be had valuable stacks of grain are destroyed by the destructive blaze.

In many localities the june grass itself is a menacing factor in favor of fires for it is readily set ablaze with the spark of the locomotive, the stub of a cigarette, the falling of a match, or the embers of the camp fire. A careless smoker in the harvest field is a constant menace and should be cautioned to extreme care that there be no destructive fires resulting from his carelessness. Those in charge of camp fires during harvest or threshing, should be made to feel a keen responsibility and see to it that no smoldering embers are left for the wind to carry into the stubble. Where june grass skirts the field of ripening grain, the farmer should plow a few furrows next to the grain to lessen the danger by fire from that source. Then, too, he should plow around the stacks a strip wide enough to check any blaze that might get into the field. Stacks should be placed at a safe distance from the railroads.

In districts where much is at stake and fires are easily started it would be well for the farmers to provide a regular watchman to guard against any enemy incendiary who might be lurking about to destroy. It would be easy for such an enemy to do a great deal of damage without being detected where farmers manifest a heedlessness to this danger. On the other hand, much loss might be avoided by using vigilance and placing every safeguard against the dangers of fire.

The railroads can do their share and do much to prevent fires near their rights of way in the farming districts, by working in co-operation with the farmers, advising on means of protection, and making conditions less liable to fires.—J. W. Paxman Dry Farm Specialist, Extension Division, Utah Agricultural College.

THE POWER OF A SMILE

By F. H. Sweet.

"There's a face for you," said one man to another, as they were crossing the city hall square. "Isn't it grand! You seldom see faces like that nowadays. They are getting rather rare."

"Yes," agreed his companion, "but one must live correctly to have such a face. A man's mode of life will show in his face, no matter how hard he may try to conceal it."

A reporter was walking behind the two men and overheard the conversation. He boarded an elevated train at Park place, and happened to take a seat near the man whose face had attracted favorable attention.

On the opposite side sat two women and a little girl. The child suddenly and apparently without cause began to cry quietly to herself. The younger woman, who was evidently the child's mother, tried to comfort her, but to no purpose. The child continued to cry, and the big tears rolled down her cheeks until the handkerchief borrowed from her mother was wet. Once as the little one looked up she caught the eye of the man sitting opposite, and evidently saw something in his face which attracted her. Her blue eyes opened wide and a smile spread over her face, leaving the big tear-drops and a little redness about the eyes as the only evidence of the sorrow which had convulsed her a moment before. The man smiled, too, and the child glided off her seat, and crossing the aisle, climbed up into his arms and settled herself comfortably on his knee. The mother sat dumfounded for a moment, and cast searching glances at the man in front of her, who, understanding the situation perfectly, said reassuringly:

"It's all right, madam."

When the train stopped at Fourteenth street they all got out, the two women walking on ahead and the little girl, clasping the man's hand, was chatting away perfectly happy and contented. The face of the world had changed for her at the presence of the man's smile, and the tears of a moment before were entirely forgotten. The bell sounded twice, the gates closed with a bang, and the train wheeled its way to the upper part of the street, leaving the reporter staring at his knees.

"Fifty-eighth street! all out!" called the guard.

The reporter sprang to his feet and found that he had been carried a mile or more beyond his station, thinking of a child's instinct and a man's smile.

FORGIVING PARENT

War-Bride (who had eloped)—"Oh, Jack! Here's a telegram from papa.

Bridegroom (eagerly)—"What does he say?"

War-Bride—"Do not come home and all will be well.—London Opinion.

THE UTAH FARMER
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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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Cheese can be made on the farm. Read the story of how to do it in this issue.

Profit by your own experiences, for it is a good school if we can only learn to do or not to do again, the things we learn.

PRICES ADVANCE.

Several of our implement dealers tell us they have had notice of an advance on farm implements and machinery. Prices have gone up as much as 35 per cent. O ur readers will recall that we have advised them about this advance, and suggested they order all the machinery they expect to use this fall and spring. This is part of the service we are trying to give our readers, keeping them advised on such important subjects.

It may not be too late to secure some of the machinery or implements you need at old prices. If you can do it—right now is the time to act.

PRICES ON FARM PRODUCTS

As we go to press with this issue, there has been nothing done yet, of a definite nature, as to what price the government will make on wheat and other important farm products.

The government will buy all the wheat but at what price? There is a wide difference in the price of wheat right now. In Utah County, we are told, millers are only offering $1.80 while in Cache Valley the farmers are getting $2.40.

It is a big problem and a new one for the government to fix prices on farm products. It will take time, and during this wait, farmers are wondering what to do.

PRODUCE MORE HONEY

A very small per cent of our farms have any bees on them. There is profit in a few colonies of bees to gather the honey from the flowers of the clovers, cereals, fruits, trees and weeds on your farm.

We have another reason why bees should be found on more of our farms, it is being emphasized at the present time, the economy of these bees and the food they would save, they would gather the nectar of the flowers and plants that would otherwise be wasted. Honey is a valuable food product and should be used in every home.

Why not have a few colonies of bees and gather this healthful food from your farm that is going to waste at the present time?

PREVENT FIRES

At this time of the year when everything is so dry, every percaution possible should be taken to prevent fires. Playing with matches is often the cause of a serious loss. Smoking and the careless dropping of matches has proved to be the cause of serious loss in many places.

In a moment or two's time the savings of a year or two may go up in smoke, if the barn and hay, implements or possibly livestock are destroyed by fire.

Some sections are experiencing an unusual number of fires and it should serve as a warning to others that the greatest care be taken to prevent fires on the farm. Some preventive measures should be taken, such as providing a barrel of water that could be used on a moment's notice should a fire occur.

DRAINAGE WILL HELP

There is so much land that needs draining and the results of drainage are so successful that we are surprised at the many thousands of acres that need it and still are not drained. In nearly every section of the state, there is more or less land that needs to be drained. These waterloggd acres would help to increase the food products, if they were put into shape. Drainage projects have been tried out in so many districts and proved successful, that one takes no chances on the benefits to come from drained land. Often the crop of the following year will pay for the cost of draining the land. If this is true, and it can be proved on many farms, why do we hesitate to have our land drained?

Our government will help in the general survey of the land, and money can be secured if necessary for cost of material and labor.

It is a good business proposition, and at the same time a patriotic duty to increase production

If you are interested in this kind of work we can help you. Ask us any question you want to about drainage. We want to help.

LET IT BE A CAREFUL HARVEST

Every farmer should plan now to see that there is no waste in the harvest that is now going on. The people of the world need every bit of food stuff we will be able to supply them. An another important reason, it will be profitable and it is a good practice to see that there is no waste at harvest time. The increased acreage means increased production.

Storing should be provided for. We have suggested in our columns a number of times methods of building cellars for storing potatoes and the right kind of storage for other crops. Big warehouse concerns have proffered the use of some of their space sufficient to store several hundred car loads, and if necessary they will advance money on the same. If you are not in a position to store or properly market your crops, we suggest that you get in touch with the county agricultural agent.

The important thing to remember is that nothing should go to waste. All the surplus should be cared for in some way.

WHY ARE WEEDS SO TOUGH

Why are weeds such fighters, while our cultivated crops are so tender and easily destroyed? This is a question that one often asked himself when trying to keep down the weeds on his farm. Did you ever think that the weed has only to preserve itself? It only has to produce seed enough for next year planting. Many of them seem to produce an abundance of seed. Their only work is to keep agrowing.

The cultivated plants are grown so they will produce a surplus of fruit or seed for the help of mankind. Wild fruit trees need no sprayng but the cultivated kinds are given the best of attention and care in order to produce a good crop.

Weeds seem to have a toughness given them by nature and this is why we have to fight them, while at the same time we are increasing our protection and care for the cultivated crops.

OUR BIG FRUIT CROP.

This year Utah will harvest one of the largest fruit crops we have produced in years. The big problem is to take care of this big crop without any waste or, just as small a waste as possible.

Drying, canning and preserving will help more this year than ever before, because of the interest that has been awakened by the need of every pound possible for our own use and to help feed the people of the world. Many articles have been published in the Utah Farmer, offering suggestions as to how the canning, drying and conserving of our fruit could best be done. The peach crop will soon be on, and plans are now under way to market it. Some have contracted their crop, others are taking a chance on the market. Good prices are being offered.

Don't wait until the last day before picking to secure your basket and know that cars will be ready to haul it away. Labor will be needed, arrange now so you will be sure of the necessary help.

MACHINERY PREPAREDNESS

A number of times we have suggested that any one who was likely to need farm machinery or implements of any kind for use this summer or fall, should place their orders early. Prices are advancing all the time and in preparedness you would have the advantage of old prices. Of more importance than the price is the question of securing what you want, when you need it. Often the price of the implements is lost in the time or crops wasted, waiting for the part or the machinery necessary to do the work.

This matter is of more importance than some seem to realize, and for this reason we are repeating our suggestion. Dealers can not get what they want and manufacturers can not make the machinery because they can not secure the material necessary.

We want to go a little farther and recommend that you look ahead to next spring's work and if you can buy at old prices any machinery you know that you will need, the investment will be a good one.

Labor will be more scarce next year than this and machinery preparedness is a serious question for every farmer. Lack of it may be a loss or a great annoyance.

Buy now what machinery or extra parts you need.

NEXT YEAR'S CROPS.

From indications the question of food products will be as serious next year as it is now.

When the call from our Government came to increase our food production for 1917, there was but a short time to prepare. Now we have plenty time to look ahead and plan for next year. Consumption is rapidly overtaking production and we have very little, if any, surplus to draw from, and as a result there must be an increased production for the next year or two in order that hundreds will not go hungry.

Our leaders at Washington seem to realize the situation for they have guaranteed to the farmer a minimum price of $2.00 a bushel for wheat for 1918 crop. This was done with the idea of inducing the farmers to grow every bushel of wheat possible. Wheat is not the only crop that must be produced. Our general rotation should be considered because the problem before us is not for one year, it is for several years to come, and the best results will come only when proper rotation is carried out.

Plans should be made so that we can produce the greatest crop possible. Every rod of ground should be utilized, and in all of this planning a careful study should be made, so that each acre of land is planted to the kind of crop it will produce the best.

Each farm is a study of itself, and every farmer must do some thinking and planning if his farm is to produce a maximum crop for 1918.

STORING POTATOES IN "DUG-OUTS"

(Written for the Utah Farmer)

There will be a big increase in the production of potatoes this year. Unless definite plans are made and a co-operative movement carried out, there will be some potatoes spoil this fall. Not so much for want of a market, but because they cannot all be handled at digging. Railroad facilities are now taxed, what will it be at harvest time?

Another thing that we must remember and that is we should not try to dump all our crop onto the market at digging time. Part of our crop must be stored away and sold during the winter and spring.

What about seed for next year this must be stored away and so we see the necessity of proper and abundant storage room.

This question of how to hold potatoes after harvest time is to many growers a serious problem. Potatoes are kept over winter in three ways: In pits covered with straw and earth, in cellars under buildings, and in storage cellars or "dug-outs." The first method is cheaper to begin with but inefficient and in the end the most expensive. Potatoes stored in pits are hard to get at unless left there until settled weather in spring, but the greatest difficulty with pitted potatoes is that the grower never knows whether they are heating, keeping well or freezing during the winter. Last winter one man lost enough potatoes from freezing in one pit to pay for the construction of a modern cellar that would hold 10,000 sacks of potatoes. The loss in the state from this cause was many thousands of dollars.

Cellars under buildings have several objections. The capacity is limited, the space, is unhandy to get at, temperature and humidity are difficult to control, and ventilation is usually poor.

The potato storage dug-out is unquestionably the simplest and most efficient way of storing potatoes. The dug-out is not an invention but rather the result of growth or development from the older system of pitting potatoes. It is the result of almost 50 years' experience in storing potatoes in the West, and, as now constructed, is typically a Western institution.

In spite of the high cost of labor and materials, many potato growers are contemplating the building of dug-outs this summer. A careful study of the subject shows that a properly constructed dug-out is the most efficient and cheapest storage space on the farm, both for winter and summer use and for other things as well as potatoes. Mistakes in construction of the dug-out are expensive and hard to remedy, hence it is wise to make a careful working plan before starting the work.

The following suggestions, though brief, are points of vital importance that have been taken from the experience of the most successful potato growers of the West:

Locate the cellar on level land or through a knoll. Never set into a hillside. Select a well drained location.

Excavate the sufficient depth so as to have soil for covering top and ends. Three feet will usually be sufficient.

Side walls are usually required, either of posts or stone.

Make provision for light in cellar by sufficiently large ventilating shafts. Make vestibule long enough to leave no sloping driveway outside.

A large cellar should have a driveway through it with doors at each end.

A good roof and double doors, well fitted, are indispensible.

The best roof is made of soil and straw, not because of cheapness, but on account of their superior insulating qualities.

Water-proofing over the soil is desirable if the expense is warranted.

Rafters should be sound poles, four inches in diameter at small end, or 2x12 sawed stuff, and set 15 inch centers.

Purlins should be not less than 4x 12—6x12 is better.

Posts should be eight inches at top and not more than ten feet between centers. A 36-foot cellar should have two rows of posts. A wider cellar should have four rows of posts. Be sure of good foundation for posts and walls.

Slat bottoms are desirable for the bins.

The cost of a good potato cellar should be between 20 to 30c per 100 pounds of potatoes.

Each square foot of floor space in cellar will carry 200 pounds of potatoes piled four feet deep.

A well constructed cellar should last ten years without much repairing, then by recovering it can again be made as good as new.

USE CHEAPER FEEDS; SAVE GRAIN

Corn fodder, straw, and other roughages, when fed with concentrates, make good rations.

"It is time to quit shoveling grain indiscriminately into livestock. Good livestock farmng demands it and the need of more food requires it. Feeding grain to meat animals with a lavish hand is responisble for one of the greatest feed losses on the farms of this country. Hay, fodder, silage, and pasture are the cheapest feeds and will carry animals along with a minimum of grain. Keep the frames of the young animals developing on these cheap feeds. Withhold the full grain ration until the finishing period arrives. Breeding cattle may be wintered on the cheaper feeds."

A tremendous waste of feeding stuffs ocurs annually on American farms, according to figures presented in Farmers Bulletin No. 873. In 1914 about 120 million tons of straw were produced in the United States. Of this amount 55 per cent was fed to livestock, 15 per cent was burned, 8 per cent sold, and 22 per cent plowed under or otherwise disposed of. Corn stover produced in the United States is estimated at 245,253,000 tons, of which 81½ per cent is fed to cattle and other stock. No figures were obtained to show the percentage that is is wasted in the feeding, but at least 35 per cent of the total amount produced represents actual waste.

This waste of corn stover can be checked, it is said, through use of better methods of feeding fodder and stover and it can be almost entirely stopped through the use of silos. Straw and stover are best utilized for feed when accompanied by concentrates, such as cotton-seed meal. If the large amounts of cotton-seed meal ordinarily used for fertilizer in the South were, instead, fed to livestock and the manure used for fertilizer, the value of the meal would be increased from 50 to 85 per cent.

Practical experience as well as experimental work has taught that straw and stover can be used very economically in the rations of almost all kinds of livestock. They can be used in the fattening ration of all farm animals except hogs and should compose the larger part of all wintering or keeping rations of cattle, sheep, and horses. Breeding herds of beef cattle or dry dairy cows can be successfully kept on rations composed largely of these roughages. Flocks of breeding ewes do well on such feeds when some grain is added. Horses doing very light work or no work at all need little grain if given a plentiful allowance of clean, light straw or stover. Under certain conditions, of course, grain should be added to the ration, but now it should be conserved as largely as possible for human consumption. The bulletin mentioned suggests various rations which are made up principally of these waste feeds.

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The Drainage of Irrigated Farms

R. A. Hart, Senior Drainage Engineer.

Types of Drains.

There are two general types of drains in use in the irrigated section —the open ditch and the covered drain. Since this discussion deals only with the individual farmer's problem, no consideration will be given to the large open canals used for outlets in community or district systems. The open ditch, as its name implies, is merely a waterway cut into the soil so that it will receive the underdrainage from adjacent land. The covered drain consists essentially of an underground conduit for the collection and transportation of subsurface water. It is superior to the open ditch. The only reason for using the latter is strictly one of economy, and a decision as to the type to be used should be made only after all factors having a bearing on the subject are considered carefully.

The open ditch itself takes up considerable space, and the material removed in building it usually is of such a quality that it is not wise to spread it over the surface of the adjacent land, so additional space is lost. Moreover, it is not safe to irrigate land close to such a channel, as there is danger of the water breaking into the ditch, which consequent injury to it and the land. Even a very small ditch may require that a strip of land several rods in width shall be rendered useless for agricultural purposes, so that an effective drainage system may reduce materially the available acreage of a farm. To keep an open ditch open, the sides must be made sloping, not steeper than one horizontal to one vertical, and to prevent the growth of vegetation and the accumulation of mud, etc., in the channel from obstructing it the bottom width should be not less than 4 feet, except in gravel or stiff clay, where it may be 3 feet, so it becomes necessary to excavate much more material than in trenching for covered drains. But in spite of careful design, construction, and operation open ditches are sure to require a great deal of maintenance and repair, and the expense for these often amounts to more in the long run than the extra cost of covered drains.

Open ditches are unsightly and provide harborage for obnoxious weeds and breeding places for injurious and disagreeable insects. Their presence is a constant source of danger to farm animals. They cut up the farm nto inconvenient and irregular shapes and require the installation of farm bridges and flumes in order to facilitate communication between the various parts of the farm and for the conveyance of irrigation water and waste water from tract to tract. Covered drains, on the other hand, are not subject to these objections. They take up no valuable space, and if properly installed require little or no maintenance. The only way in which difficulty can occur, in connection with vegetation, the possblty of water roots chokng the drains, andthis can not occur if lines are kept away from water-loving trees, and if such plants as the sugar beet are not grown directly over the drains.

In order to decide between types of drains, it is proper to add to the estimated cost of open ditches a sum sufficient to pay at current interest rates, a return large enough to pay the annual maintenance, which often is 10 per cent of the first cost, and compare this total with the first cost of covered drains. For instance, assuming that the first cost of the open ditch would be 50 cents per foot and of the covered drain $1.25 per foot, if the maintenance cost is 5 cents per foot per year for the open ditch and the interest rate is 5 per cent, it will be necessary to add $1 per foot to the actual cost to pay for the maintenance. This makes the cost of the latter $1.50 per foot as against $1.25 for the former. When the maintenance cost is considered, the covered drain often will be found actually cheaper than the open ditch and when the desirability of the two is considered there is no comparison.

The most suitable material for use in a covered drain is clay tile. It should be hard burned but not brittle. The 2-foot length is the most satisfactory. The tile should be straight and truly cylindrical in shape. The walls should be smooth and free from serious cracks and blisters. The ends should be free from rough edges and irregularities. The tile should be uniform in size and thickness for any given diameter. The walls should have fairly uniform thickness at both ends and at various point of the circumference. They should be very impervious and have a low porosity. The material from which the tile is made should be free from foreign ingredients, particularly cinders and free lime.

Pole drains, brush drains, mole drains, rock drains, and cobble drains are almost useless in irrigated soils and never should be installed. Lumber box drains have been used to some extent as a substitute for clay tile but their use is a doubtful economy. Cement tile is not generally recommended for the drainage of alkali lands as it is subject to rapid deteriration unless it be made of a very dense mixture that will not permit the penetration of water containing alkali in solution.

Sizes of Drains.

The spacing of drains in the irrigated section usually is much greater than in humid sections and, frequently, a single line of drain may effect the reclamation of a considerable acreage. From this it will be concluded that larger drains will be required in the drainage of irrigated lands. It has been found that they need not be proportionately large, however, since the amount of water which it is necessary to take care of is smaller for a given acreage. In the arid section, there is likely to be a continuous discharge of drainage water throughout the year, and frequently the discharge is very uniform at all times. However, there are certain maximum flows, usually during the period of greatest irrigation application, and it is necessary to provide a drainage capacity that will take care of such flows.

If only the required capacity of the drain were considered, it would be found feasible to do a great deal of drainage with 4-inch and 5-inch tile, but experience has shown that the use of tile smaller than 5 inch is not satisfactory, while 5 inch should be used only for short branch lines or at the upper ends of branch lines. The following table is offered for purposes of comparing the carrying capacity of tile lines of different sizes, on the assumption that all are laid on the same grade.

Relative carrying capacities of tile of different sizes.

One—	Will carry the discharge of—
6-inch tile	Two 5-inch tiles.
7-inch tile	One 6-inch and one 5-inch tile.
8-inch tile	Two 6-inch tiles.
10-inch tile	One 8-inch and one 7-inch tile.
12-inch tile	One 10-inch, one 8-inch, and one 5-inch tile; or three 8-inch tiles; or seven 6-inch tiles; or twelve 5-inch tiles.

As a rule, tile larger than 12-inch in diameter is not used in individual farm drainage.

The size of tile required depends on the amount of water to be carried and on the slope of the drain. The latter can be decided upon when the survey of the land is made and the fall to the outlet is measured. The former is not so easy to determine. It depends on the location of the tract, the nature of the soil, the slope of the ground both on the tract and above it; on the quantity of water used in irrigation and on the method of irrigating, both on the tract and on higher land; on the rainfall and evaporation; on the seepage from reservoirs, canals, and ditches; and on many other factors. Indeed, the determination of the required capacity of a drainage system is the most difficult problem confronting drainage engineers, and demands their best efforts. Intricate measurements and calculations must be made

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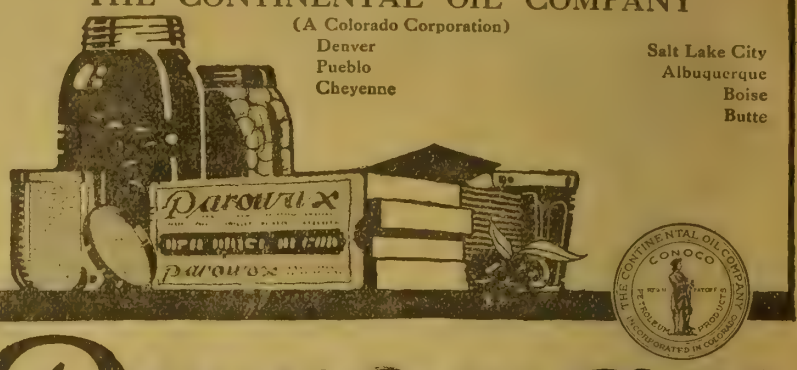

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in each instance. It is therefore impossible to give definite instructions in regard to this important matter. It is possible, however, to give a general idea of required sizes based on a wide experience under a great variety of conditions. The following table is intended to apply to fairly uniform land not located at the foot of steeper slopes or benches, nor in pockets or depressions, nor in flat river bottoms where it will receive surface run-off from higher land, nor where it will receive water from deep sources by pressure. The assumed slope of the tile is 2 feet per thousand feet.

Sizes of tile required to drain given areas having different types of soil.

Area of tract (in acres).	Size of tile required. Clay with sand stratum.	Sand.	Gravel.
320	10-inch		
160	8-inch	12-inch	
80	7-inch	10-inch	12 inch.
40	6-inch	8-inch	10-inch.
20	5-inch	7-inch	8-inch.
10	5-inch	6-inch	8-inch.

If the soil be compact clay, a given size of tile will drain larger areas than indicated. If the subsoil be joint clay, the "sand" table should be used. If the drain be located at the foot of a bench or in a gravel pocket, none of the above bases will apply. A better basis for design in such cases is the length of a given size of tile which it is safe to use. A slope of 2 feet per 1,000 feet is assumed, as before. The following table will give a rough idea:

Sizes of tile required for drains of different lengths.

	Maximum length. Sand stratum.	Gravel
	Feet	Feet
12-inch	5,580	1,250
10-inch	3,350	750
8-inch	1,790	400
7-inch	1,250	280
6-inch	800	180
5-inch	450	100

For greater slopes smaller tile is required, and for flatter slopes larger tile is necessary, the variation in capacity being as the square root of the slope. If lumber boxes are used, the openings should be about the square of the tile diameter.

For open ditches the bottom width should be 4 feet and the side slopes should be at least 1 to 1. Thus for a depth of 6 feet the top width would be 16 feet or more, and for a depth of 8 feet the top width would be 20 feet or more.

In the installation of a drainage system it should be borne in mind that the improvement is permanent, and that after the tile is once covered up it is more expensive to uncover and relay it with larger tile than to install a new drain, so it is false economy to cut down on the size of tile. It is much better to err on the side of too great capacity than too small.

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BEWARE OF THE TUMBLING MUSTARD

By F. S. Harris Director, Utah Agricultural Experiment Station.

All weeds are bad, but some are worse. Among the latter class is the Tumbling Mustard (Sisymbrium altissimum), known in some places as umbrella weed and throughout the Northwest commonly called Jim Hill mustard. It received the last name because it spread along the lines of the Great Northern Railroad which was built by the late James J. Hill.

This weed was brought to America from Europe about 1887, but it has only been in Utah a very few years. During this time it has been busy and has now become probably the worst pest in dry-farm grain. It is not a difficult weed to kill if attacked at the right time, but unless drastic measures are taken it spreads everywhere. Each of its long pods contains about 120 seeds and a single plant has born as many as 1,500,000 seeds. These are scattered broadcast as the dry plant rolls across the field like a ball.

The flowers are of a pale yellow color about one-third of an inch in diameter and are not nearly so conspicuous as the flowers of the common mustard. The plant blooms in June and July and the seeds are ripe in August.

The Tumbling Mustard has all the bad characters of the mustard family. When abundant, it seriously interferes with cutting and elevating grain by the self binder and greatly increases the amount of twine required. The seeds give an abjectionable flavor to ground grain, and farm stock, with the exception of sheep, refuse to eat grain when this mustard seed is present in quantity.

Harrowing spring grain, as recommended for other mustards, is effective; if this is done the pest will give little trouble. Discing in the fall immediately after harvest and clean cultivation before seeding in the spring are recommended. Screenings containing the seed should be destroyed. Plants about the edges of the fields, along roadsides and canals should not be allowed to mature. New and reasonably clean fields may be kept clean by hand pulling.

It is hoped that Utah Farmers will recognize the danger of this pest before it covers every acre of land. Already it is cutting down the yield of grain very much. Let us see that its hold does not become any stronger.

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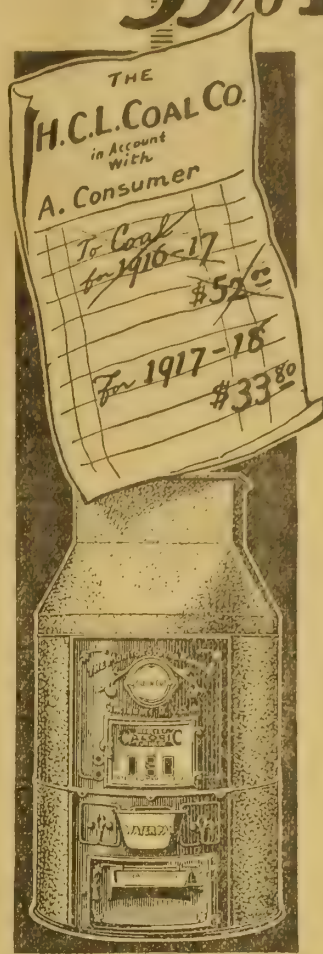

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THE FARMER'S WORKSHOP

The statement that "man is a tool-using animal" appeals peculiarly to the farmer, especially in this mechanical age when labor-saving devices, special machines and high-pressure implements keep step with the demand for efficiency.

Every farm should have a well-equipped work-shop with a bench, forge, vises and tools for working in wood and iron. At this season when outside work is slack, the shop can be made the center of much profitable industry, not only in making necessary repairs, but in the creation of new things of use and beauty for the farmstead and the home.

The farmer of the future must be a mechanic because machinery assumes an increasing importance in farming operations. This is illustrated in reviewing the history of the traction engine—the failures are invariably due to lack of skill in operating the steel horse, or inability to make repairs. The farmer is distinctly handicapped who must run for the blacksmith every time a part breaks or something goes wrong.

Mechanical power can be used with profit in the farm work-shop for the turning of lathes, sawing, drilling, grinding tools, etc.

"Quality first" is a good rule in buying anything, but it applies with extra force in buying tools A poor tool is nothing but an aggravation. For example you can buy a hammer for ten cents that will look very much like one that costs seventy-five cents. The cheap thing flies off the handle, its face becomes dented and its claw loses its grip on a nail-head at the critical moment—tending to produce more profanity than profit. High-grade tools last a lifetime, give satisfaction and are the cheapest in the long run.

In addition to the tools and machinery of the workshop, there should be a shelf or cupboard for paints—either ready-mixed for immediate use, or a supply of white lead, linseed oil, turpentine and dry colors for the home-made article. Cans of paint should be kept covered with air-tight lids. Brushes can be kept soft in a can of turpentine. The liberal use of paint on buildings and implements betokens a thrifty nature, for paint is comparatively cheap and prolongs the life of wood and iron.

A stove in the work-shop makes a comfortable place to spend a winter day tinkering with some of the many things that constantly spring up for attention. It makes a mighty good place for the boys to congregate for fun and work when they can't get out of doors in bad weather, and provides the means of a fascinating occupation that will fit them for success as the mechanical farmers of the future.

The farm work-shop will pay for its cost in a few years by saving steps and loss of tools. Instead of leaving wenches, hatch ts, etc., where they were last used, or tossing things into odd corners, the central shop makes "a palce for everything" in the way of a tool. The satisfaction of finding it when you want it repays the timely effort of "keeping everything in its place."

CLEANING FUR.

Fur may be cleaned by brushing thoroughly with very hot bran. Use a stiff brush. Have the fur stretched firmly to the ironing board. After brushing, shake the fur to remove the bran. This not only cleans the fur but also makes it glossy.—Department of Domestic Arts, Utah Agricultural College.

IMPORTANT

Skinner—"What are you doing about the rationing?"

Podmore — "Oh, when meal-time comes I tighten my belt."

Skinner—"From the outside or the inside?"—Punch.

LIVE STOCK

PREVENTION AND CURE OF SORE SHOULDER AND NECKS OF HORSES

W. Harding.

Sores on the necks and shoulders of horses are always a source of trouble and annoyance in farming operations resulting, of course, in a loss in efficiency in that line. We have been very successful in curing sores by washing the shoulders of the horses immediately after the collar is removed, with a strong salt water solution which will have a tendency to toughen them and take out any soreness. A liberal application will remove swelling.

When bunches form on the necks and shoulders, if they are not immediately removed the skin will soon peel and the sore be very hard to heal. These bunches may be taken down by a little spirits of camphor applied very lightly to prevent blistering. We have also used some gall cures with a certain degree of success, especially "Security," from which we have obtained very good results. It is important, however, to keep the sores clean with an antiseptic of some kind. We use peroxide. The sores are then also washed with salt water when the teams are unharnessed in the evening, and a gall cure applied when harnessing. Don't at any time, allow dirt to gather with the gall cure, which will only cling to the collar and increase the sizes of the sores.

Our observation has been, that the principal means in the prevention of sores, is to obtain collars that are well fitted to the horses. A horse that is idle for a short time will fill in at the neck even if it does not increase much in weight and the same collar that was used on the horse formerly will be tight after a lapse of idleness. A collar that is too short will cause a sore to form on the top of the neck, and one that is too long will make the points of the shoulders sore; and a collar is either too wide or too narrow will cause sores on the side of the neck. Even a well-fitted collar will cause soreness, if the collar itself and necks of the horses are not kept free from dirt.

Much trouble along this line can be saved if, before harnessing, the shoulders and necks are rubbed freely, which will tend to remove any slight swellings or soreness. Also on stopping the team, the collars should be raised and the necks and shoulders of the team rubbed with the hand and aired, which will keep them smooth.

CARE OF THE HOG DURING THE SUMMER MONTHS

Some Timely Suggestions Worth Reading.

As the hot, sultry days of July and August drag themselves by, the importance of sanitation in the hog lot is most forcibly impressed on the hog man. You know that with the human family these three months are the most trying ones of the year to maintain healthful and sanitary conditions and the same thing applies to swine. Pasture commences to become dry and short, small streams, springs and water pools dry up, and the hog is very susceptible to the scorching rays of old Sol.

Now the first and most important consideration for the hog during these months is plenty of cool shade, and fresh, cool water. The best natural shade of course is the familiar grove or woods but in the absence of good shade trees, artificial shades can be constructed that serve the purpose well. Nothing beats a low shed, open on all sides and covered with straw, fodder, grass or chaff and a shade of this kind is inexpensive. A modern farrowing house, with windows at the top and sides open, and cement floor that is kept cool by sprinkling with water, also affords excellent shade, and can be kept scrupulously clean and sanitary. When the hogs come into this building during the heat of the day, just throw a few buckets of water around here and there, and watch them enjoy it. Then about twice a week, sprinkle the floor and hogs with a good solution of germicide dip, and you will keep the premises sweet and clean, eliminate disease germs, and help keep down the lice.

Cement wallows are fine in the summer time, and a little dip or crude oil added to the water keeps the pool from becoming stagnant and sounds the death knell for lice. If you have only one wallow of this kind, make a practice of putting every hog on the place through it at least once a week. Mud wallows can also be made beneficial by the use of a little dip or crude oil.

Now the hog will consume an abundance of water, and he likes it cool and clean. So many practical watering devices are within reach of every hog raiser, that it is not necessary to dwell on them here. The worms can be exterminated with any good worm powder or santonin preparation, and these three months are the ideal ones to thoroughly rid the herd of both internal and external parasites. Keep the feed troughs clean and disinfect them at least once a week, and if they are where the sun can get to them every day so much the better. Above all things keep down the dust on the feeding floors and grounds and sleeping quarters, as dust is one of the hog's wrost enemies, and many of his ills an be tracted to dusty sleeping or feeding places. If you are feeding on the ground during the dry months, either keep changing the place or keep the dust down with water, and this also applies to cement floors. Let the hog sleep out in the open, as this is the best place for him during the summer months. Remember that all you need to do to raise hogs successfully during the summer months is to keep them cool and healthy, give them plenty of feed and water, and use good, common sense.—Swine World.

ARE YOU PREPARED

Are you prepared to take advantage of the profits that can be made out of the hog business during the next year and the years to come? Are you in a position to reap the reward that is due you as a raiser of good hogs?

Many hog raisers have lost out on profits simply because they have not been prepared. From a number of sections, particularly the North and Northwest, come reports to the effect that a very high percentage of the young pigs farrowed last spring were lost. From many farms the reports indicate that losses have ranged from 30 to 50 per cent. This loss is terrific and aggregates hundreds of thousands of dollars. This year's loss is perhaps greater than ordinary, but similar reports come from the hog farms every spring.

Hogmen Haven't Been Prepared

It is true that this last spring was perhaps the worst hog men have experienced for years. The weather was cold, snows were deep and conditions were most unfavorable for the saving

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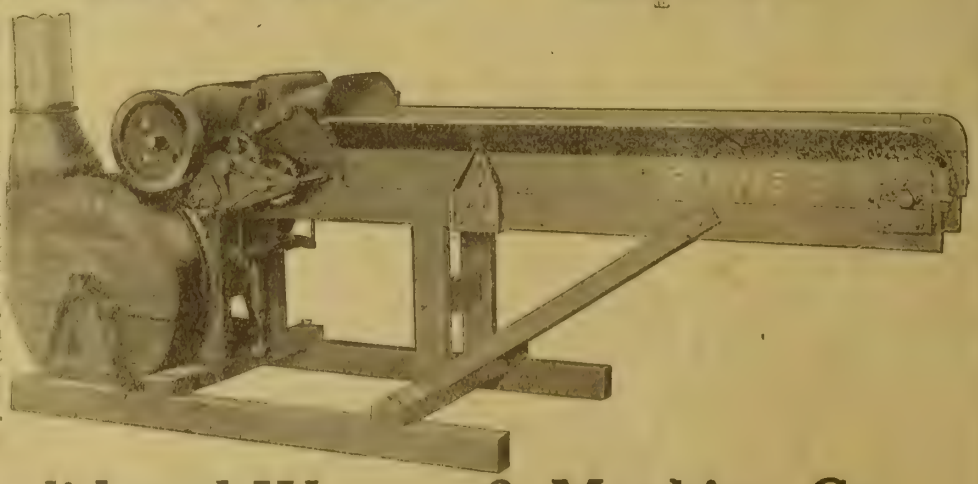

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Don't Wait

of young pigs. But we don't believe the entire blame can be laid to the weather man. A great big cause for these heavy pig losses has been the lack of preparedness on the part of hog men and the lack of personal attention for the old sow and her brood of young ones. If left to "root hog or die" the old sow will ordinarily come through in good shape, where other livestock will perish. But she demands some care and attention under extraordinary contitions and will reward her owner handsomely every time he gives her a pleasant look.

Are you going to allow another year to go round and face the same conditions? Will you wait until next July and look back over the past year's work and see a record of more than fifty per cent loss of the pigs farrowed? Are you going to neglect your hogs and your hog business and let history repeat itself, or are you going to get busy in the hog pens?

If you have been wise, you will have a good number of sows to farrow late this summer, or early in the fall. If you are wise now, you will give every one of these sows your best attention and see that the great majority of her pigs are saved, when farrowing time comes.

You should Have Plenty Breeding Stock.

The intelligent hog raiser, who can see into the future, readily recognizes what a rosy outlook there is for hog production. He sees the world's meat supply diminishing and the world's demand increasing very rapidly. Thus he can see the continued high prices of meat foods of all kinds. This insures high prices for meat producing livestock. It means from twelve to twenty cents per pound for hogs for a good long time to come.

Get On the Job.

We suggest that the "slacker" hog raiser get on the job. We say, prepare now and profit in the future. We say, do not put off till tomorrow what you can do today. We say, keep a good supply of breeding animals, and buy more if you haven't enough to run your hog plant at capacity.

Better Facilities.

Better hog houses and more of them are needed to produce "More and Better hogs." First class hog houses are better paying investments than first class horse barns and cattle sheds. But the average hog man has never appreciated this fact. It is nothing short of a crime for a hog man to tie up several hundreds of dollars in good animals and let them "root hog or die."

Before another farrowing time comes around, let's figure these things out and take action. Let's figure out how many good houses we need to take care of those brood sows and their litters which will come this fall and next winter. Let's build those houses as soon as possible and make them as good, as convenient, as practical and as up to date as possible. Let's place these houses on a well-drained sight where the lots will be free of mud if possible and where they will be most convenient for the caretaker and feeder. Provide early for the right kind of good pastures and arrange fencing and gates most advantageously. Have your feed bins overhauled for the feeds when they come on. Provide the necessary feeding troughs, feed wagons, oilers, waterers and other contrivances that make hog raising pleasant and profitable. And last, but not least, provide for the right kind of help and enough of it to take care of those sows and litters. Prepare to stay on the job yourself, or have some one who KNOWS represent you in person.

Hog raisers should practice preparedness and do it early. When war comes be ready with guns and amunition. Get in every possible shot that will tell when the final results (profits) are checked up. Get wise and get ready and make a cleaning. Prepare for the hog business and get ready for capacity production during these two years when everything will be ripe for the hog man.

Get "More and Better Hogs" and be sure you do YOUR part.—Duroc Bulletin.

MORE LIVESTOCK WILL HELP.

It is a fact, as shown in this country and in Europe, that no section has ever maintained its wealth in agricultural products for any considerable length of time without animal husbandry as the main industry or to supplement general farming. True, when a section of the country is first brought into cultivation the soil, being virgin and very fertile, may produce in abundance and it would appear that fertility is inexhaustible. But experience teaches that crops, when they are sold and removed from the farm, soon reduce the humus and fertility constituents so that the land no longer produces profitably.

Animal husbandry is necessary for permanent fertility. It is essential to general farming in that it reduces waste, obviates the necessity of marketing such bulky products as hay, fodder, grain, etc. It distributes labor, in many instances providing work for men and teams when crops do not demand attention.

The problem of feeding the people is the greatest with which we are confronted. We have advanced so fast in city population and industries other than farming that food production has not kept pace. Without an abundance of food no people can make great progress, nor can they remain in peace and contentment. Our farms are now required to supply the people with meat as well as bread. Ranches have been converted into farms in many sections. The sudden transition from ranching has diminished the supply of livestock faster than the small farms can meet the deficit. This means that if our section of the country is to maintain its standing plans must be provided for raising more anmals on small farms.

Land owners must assist to raise more animals. This can be done by securing breeding stock, providing, pastures, buildings, etc., erecting cross-fences so diversified crops may be grown. This will make it possible for the fertility of the farm to be maintained.

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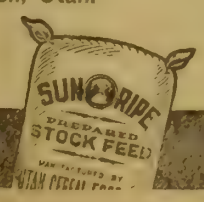

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THE POINT OF VIEW

After the reception, Mr. Jones asked his wife:

"Did you see the pleased expression on Mrs. Blank's face when I told her she didn't look any older than her daughter?"

"No," his wiser half returned. "I was looking at the daughter's expression."

Pointers For The Conservation of Food Products

(Continued from page 1)

practically dead, then pull the bulb by hand and spread out in a dry, well-ventilated place to cure.

Early Cabbage Won't Keep Long. The home gardener may take his cabbage as soon as the head is large enough for eating, or he may wait for the fully matured product. Early cabbage will not keep long, so it should be picked only as it can be used.

THE VEGETABLE PIT

Begin Now to Think of Storing Your Garden for Winter.

In order to stretch the garden through the winter you can either put its products into cans or store them in a vegetable pit or cellar. An available supply of practically fresh vegetables all the year round is a possibility if you have some simple storage facilities. There are only a few vital essentials to be observed in storing foodstuffs, and these have to do with temperature, moisture and ventilation.

A storage pit or cellar must be warm enough to prevent freezing but cold enough to prevent drying or shriveling but not so wet as to promote decay.

Homemade Pit on 6 by 10 Feet of Land.

The simplest outdoor storage pit can be made with a spade by anyone on a plot of land six by ten feet. A layer of straw is placed on the ground level and the vegetables—potatoes, turnips, beets, cabbages—are carefully piled on this in a long ridged pile. Over that layer of three or four inches of straw is carefully matted and then a top of earth ten to twelve inches thick is packed down tight. The mound should not be covered with earth completely the first day, but should be allowed to sweat and then dry out for a few days. Meanwhile protect the mound from rain.

As the weather grows colder place more soil on the mound and provide deep drains around the pit until there is no danger of moisture soaking through into the bottom of the pile of vegetables. Where freezing is severe and additional covering of straw or leaves may be necessary to protect the roots in the coldest weather. When a supply is needed for use open the pit carefully at one end and remove the roots through a small opening and then restore the soil over this to prevent freezing.

A Cellar Storeroom.

Very likely the man with limited garden space and a large cellar under his residence will prefer to utilize some of this space for storage. In furnace-heated houses the cellars are too warm and dry for the storage of vegetables. The odors from these products may be objectionable in the house. It is necessary to build a separate tight compartment and provide outside ventilation. The foresighted architect could easily include such a storage room in any house at very little additional cost for building, and some day we will see this idea as carefully worked out as the arrangement of the pantry in our present plans.

To construct such a storage room requires an outside cellar window for ventilation and a double-walled inclosure that will keep out the furnace heat. The wall is of frame construction, consisting merely of two-by-four studding, on both sides of which are placed a layer of building paper and then a layer of one-inch tongue-and-groove sheathing boards. It must be carefully put together so that there will be no cracks where the partition joints the walls of the cellar.

Cost of a Cellar Room.

The entire room should be ceiled overhead with tongue-and-groove ceiling. If there is a cement floor in the cellar additional cement should be placed around the exterior of this wall to bind it securely to the floor. Double doors with tight weatherstrips upon them are necessary.

Bins may be provided or not according as the potatoes and other vegetables are purchased in loose bulk or in crates. An excellent plan in a cellar of this sort is to have potatoes, onions and fruits put in slatted crates which can be piled in tiers against the walls with spaces between for ventilation. Turnips and carrots may be kept in bins or boxes with damp sand or earth among them. When stored in this manner the roots can be easily examined to discover decay.

A cellar room of this kind should not cost more than forty to fifty dollars for construction and often repays the entire cost of building in the savings on a season's vegetables and fruit, provided they are purchased at harvest time, when they are always much cheaper than when purchased in small lots through the winter.

Kinds of Vegetables and Fruits to Store

Selection of vegetables for storage is as important as the facilities for keeping them. If these crops are to be preserved perfectly they must be in perfect condition when they go into storage, free from bruises, rot or other disease. Only perfectly sound, undamaged specimens should be retained. Use the others at once.

Fruits such as apples and pears can be preserved better if they are placed in storage before they are fully ripe. On the other hand, potatoes should be mature and dry. Do not attempt to wash the vegetables before placing them in storage, but let them dry in the sun and shake the loose dirt from them. Sweet potatoes require a warm, dry atmosphere and can be kept in and attic near a chimney, where the temperature will not fall below the freezing point. Squash and pumpkins are of a similar nature. If placed in storage room at all they should be kept in slatted crates near the top of the room, where there is the least moisture.

Onions should be thoroughly cured and put in slatted crates. Parsnips, salsify and horse-radish may be left over winter in the open ground where they grew, as freezing does not injure them. Or they may be packed in moist sand and stored in a cool cellar. Cabbages should be pulled up with the roots and leaves all attached.

THE NEW CONTAINERS

That Have Many Uses.

The necessities of war require that American women get less of their foods in tin cans this year. There is a shortage of tin, and much of the steel used in making cans is more needed for other purposes. There are not enough tin cans available this year to meet the demand, consequently something else must be used.

Glass will not do entirley, as the price has risen so as to limit the extent to which glass jars can be substituted for cans.

Your Government believes, and has so arranged, that containers made of paper and coated with paraffin must be used extensively in place of both tin and glass. These paper or fiber containers have been proved sanitary and are claimed to be air-tight and leakage proof.

The price of the fiber containers depends upon the size, the quality of the paper-pulp material, the number of treatments with paraffin and the amount of printed matter on the outside. The commoner types may be obtained at $1.25 to 1.5 cents for the half-pint size, 1.25 to 1.6 cents for the pint size, and 1.5 to 1.65 cents for the quart size. They may or may not be coated with paraffin, which is chemically inert and is sometimes leaked into the paper material.

Some of these containers are claimed to be air-tight, proof against leakage, and protected from contamination by the paraffin. Some containers appear to be more nearly air tight than others of the same style, probably because of better-fitting covers.

These containers are light in weight, pack readily for shipment, are easily opened and are used but once. A great many types and sizes are already being made. For instance, there is the cylindrical shape used for oysters, mincemeat, deveiled meats and preserves; there is the oblong shape with a small hole at one end, holding milk or cream; there is the round flat box in which many of us are already receiving our butter. The box which takes the place of the glass milk bottle is shaped like a megaphone. Besides the shapes mentioned here there are many others, each with its particular use.

It is expected their extensive use will help the situation greatly. The co-operation of housewives in accepting their use for the purpose for which they are suited is asked by the United States Government.

Two most important uses of these containers directly in the home are:

1. For dried vegetables, instead of glass jars or tin cans. They are light, take up little space, will keep out the moisture and are impervious to the attacks of insects from the out side.

2. For fruit jellies, jams and sirups. Fiber containers can be secured with covers that can be put on and sealed hermetically at home with melted paraffin. They are cheaper than glass jars and tin cans at present prices.

But these containers will be even more generally used by the merchants from whom you buy your foods. The retailer is being urged to buy in bulk and distribute to you in small packages, using these containers. This will save glass, tin and freight. These containers are recommended for the distribution of milk, cream, buttermilk, horseradish, relishes, pickles, ice cream, oysters, sirups, marshmallow creams, dried fruits, preserves, jellies, mincemeat, deviled meats, vinegar, mustard, soda water, salads, sauerkraut, olives.

Cooked beans, macaroni and spaghetti in tin cans will soon virtually disappear from the market, as it

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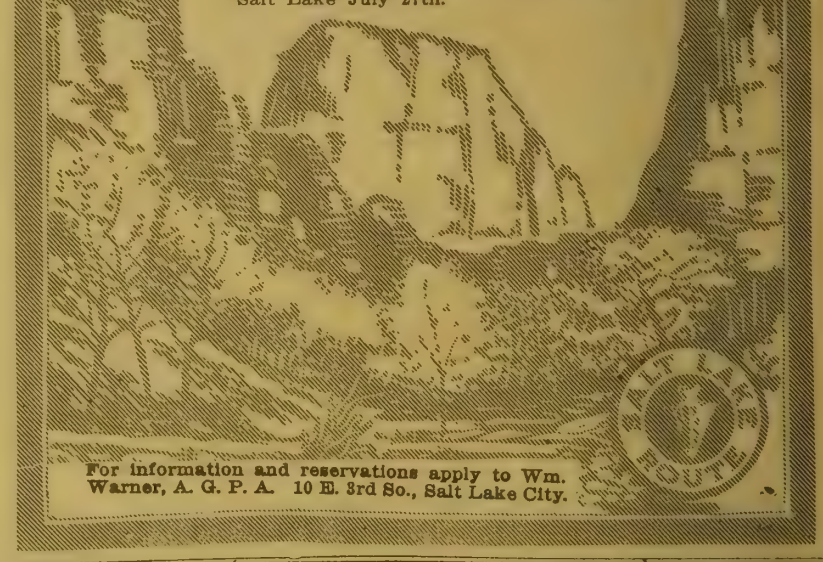

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has been agreed the tin cans are more urgently needed for other and more perishable foods.

It is also likely that you will soon be asked to take other foodstuffs in fiber containers or in paper bags. It is claimed that dry food products such as coffee, tea, spices, raisins and prunes may be successfully packed in these containers. For some of these products, bags lined with tinfoil have been in successful use for ten years or more, and they form attractive packages that are said to be moisture proof. There are other commodities usually packed in tin which should be marketed as well in paper or fiber, with the advantage of lower cost.

Some of these articles which it is good patriotism, and good economy too, to buy in a fiber container are lye, cleansers, tobacco, soap, powders, shoe polishes, metal polishes, soaps, shaving preparations, talcum powder and other toilet articles, drugs and chemicals.

The Bureau of Foreign and Domestic Commerce of the United States Department of Commerce, Washington, D. C., will send, on request, names of manufacturers of fiber containers, and a leaflet explaining their uses.

THESE FOODS COST YOU NOTHING

These foods cost you nothing: Milkweed, dock, sorrel, mustard, poke, plantain and dandelion. Yes, they are weeds. But do you know that these weeds have higher food value than some of the vegetables you have been using? In Europe all these plants (weeds, as you call them) have been used for years, but only recently have the Americans begun their use. Our fields and woods abound with good things which are little known. And they cost you nothing. You have only to go out into the fields, by the hedges and by the wayside, and gather them. They are yours for the picking.

Following are a few of the many economical ways in which these succulent, health-giving greens that you have been taught to call "weeds" may be cooked and used:

Pokeweed Shoots.

Pokeweed shoots, sometimes called pigeon-berry weed, form in some parts of the country, especially in Pennsylvania, a common green in the early spring. The young shoots are tied in small bundles, boiled in the same way as asparagus, and served with cream sauce or melted butter; or they are cut into half-inch pieces, boiled and served in the same way as asparagus stems.

Mustard Greens.

Mustard greens are good during spring and summer; they take the place of cabbage in the early spring and summer, boiled with bacon, ham or salt pork. They are especially good if boiled and prepared as follows:

Mustard Greens, Bacon and Hominy

2 quarts of greens after boiling.
2 cupfuls of sauce.
¼ pound of smoked bacon cut thin.
1 hard-cooked egg.
1 quart of cooked hominy.

Chop the mustard greens after they are boiled; add the sauce and mix well. Put on a platter with the boiled hominy, sprinkled with paprika, around the edge. Put fried bacon over the top of the greens. Chop the egg fine and sprinkle over the top of the becon and greens.

The sauce is made as follows: Fry the becon very carefully; remove from the pan before the drippings get dark; add four tablespoonfuls of flour to the drippings, stirring until well mixed, then add two cupfuls of rice or vegetable stock; season with two teaspoonfuls of salt and a little pepper; boil for ten minutes.

Mustard Greens as a Flavor for Salad.

The very small leaves, chopped fine, add much to a lettuce and onion salad. Use a teaspoonful of chopped leaves to an average portion of lettuce and onion salad. One thing might be remembered: all weeds must be very well washed before boiling.

Milkweed.

Milkweed is a very delicious green which can be used from the middle of May all through the summer, but which is at its best in June. It should be cut when six or eight inches high —better before it blossoms. The young leaves are boiled in the same way as spinach, with either ham, smoked bacon or fresh pork, or creamed for a vegetable and prepared the same as the dandelion; or the green may be chopped from the stems and the stems chopped into even lengths, boiled and served in the same way as asparagus with very little water.

Scalloped Milkweed.

2 quarts of boiled milkweed.
2 cupfuls of cream sauce, seasoned to taste.
1 cupful of bread crumbs.
2 hard-cooked eggs.

Wash and boil the milkweed until it is tender; drain and chop. Brush a baking dish with drippngs, and sprinkle with a third of the bread crumbs, then half the greens and one hard-cooked egg cut into thin slices on the greens, with half the cream sauce; then a layer of crumbs, the balance of the crumbs and put into a hot oven for thirty minutes.

Purslane, or Pusley.

Purslane, or pusley, is another weed and is used in the same way as dock. Or it is boiled and used as a vegetable as follows: Wash and boil in a little water until it is tender; then drain, chop fine and to each quart of boiled and chopped purslane add one cupful of cream sauce, with seasoning and flavoring of either onion or nutmeg. Serve with toast points and garnish the top with a hard-cooked egg cut into thin slices.

Watercress.

Watercress which grows wild in running water is at its best when growing in a sandy bottom. When gathering watercress always make sure that the water in which it is growing is pure, for otherwise harm may result from contagion. With the exception of spinach, watercress contains a larger supply of the natural salts than any other vegetable of common use. Always keep watercress in a cool, dry place, in a tightly closed pail or a paper bag. Before serving, the cress may be freshened by putting into ice cold water for a short time.

Watercress Salad.

2 cupfuls of finely cut apples.
1 cupful of watercress.
¼ cupful of French dressing.
2 stuffed olives.

Pick the watercress from the stems, mix with apples and put into a salad bowl lined with shredded lettuce. Garnish with the stuffed olives cut into rings. Serve with French dressing made by mixing together three tablespoonfuls of olive oil with one tablespoonful of vinegar and adding half a teaspoonful of salt and a quarter of a teaspoonful of peper.

Tulip Salad.

Wash the watercress in salted water, and cover a salad plate with it. Cut a tomato into eighths and arrange in the shape of flower petals, putting mayonnaise in the center.

Dock.

Sour or curly dock comes in June and lasts all season. The leaves are used and boiled in the same way as kale with smoked or salt meat, or they are boiled and used cold as a salad with a boiled or a French dressing.

Sorrel in Salad.

Wash, clean and pick the leaves from the stem and mix with any vegetable salad, or chop fine in such a salad as a potato, fish, meat or rice one. The tart flavor gives a spiciness to the salad. The amount used depends upon the individual. If one has never used sorrel I suggest using but a little at first. One soon learns to like it and to find it very valuable.

Cream or Sorrel Soup.

2 cupfuls of sorrel (sometimes called sour grass).
2 cupfuls of rice or vegetable stock.
2 cupfuls of milk.
2 tablespoonfuls of flour.
1 teaspoonful of salt.
2 tablespoonfuls of butter or oleomargarine.
Paprika.

Pick and remove the stems, clean and wash the sorrel, put into a saucepan with a very little water; boil until tender; mash through a wire strainer and add to the boiling rice stock and milk. Rub the butter and flour together, add to the other mixture and boil for five minutes. Add the seasoning.

Dandelions.

Dandelions may be prepared as soup, boiled with ham, bacon or salt pork in the same way as spinach, or prepared as a vegetable to accompany the dinner. The young tender shoots are made into a dinner salad and served with French dressing, or, when cut fine, mixed with the potato salad instead of celery. The younger the dandelion the more tender it is. The flower is not used. Dandelion soup is a very wholesome soup.

Dandelion Soup.

3 cupfuls of rice stock.
1 cupful of milk.
1 tablespoonful of butter.
Salt and paprika to taste.
1 teaspoonful of grated onion.
2 tablespoonfuls of flour.

Pick and wash the greens, put on in very little boiling water, and boil until tender (the time depends on the age of the greens). Drain, mash through a wire strainer; add to the stock and milk. Have the butter soft, and mix with the flour until smooth. Boil for five minutes; then add salt and paprika.

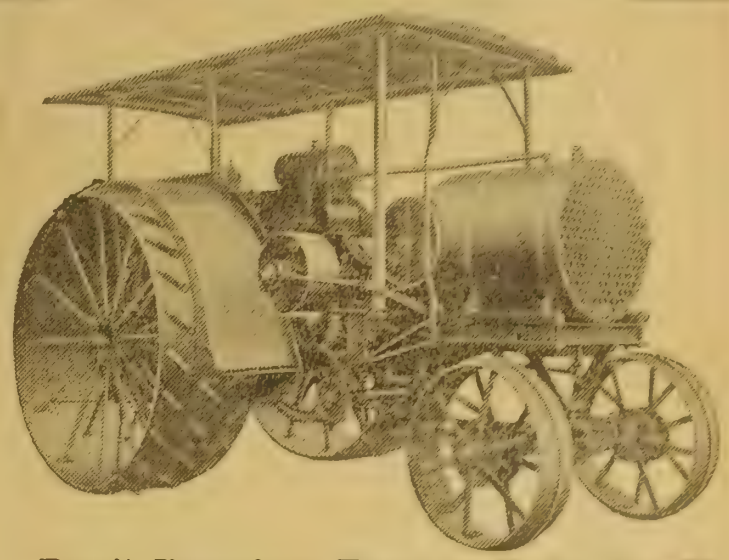
Dandelion With Smoked or Salt Meat.

The meat is boiled until tender, then removed from the stock. Add the well-cleaned and wash dandelions to the meat stock; boil until tender; add the meat in time to warm thoroughly. Drain the greens, put them on a platter, and place the thin slices of meat over the top. Garnish the edge with one hard-cooked egg cut into eighths.

Plantain Leaves.

Young plantain leaves are frequently used where lettuce is not to be obtained. The center light-green leaves are used. Always remember to wash the leaves through two or three waters; then cover with cold water for two or three hours. Pat between pieces of cheesecloth to dry; shred. Serve with French dressing that has been flavored with curry powder or dry mustard. Serve in the same way as lettuce, either with or without thin slices of hard-cooked egg.

AULTMAN-TAYLOR



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You don't want to buy any tractor until you have investigated this one. It does more work—better work—and costs you less to operate than any other.

AULTMAN-TAYLOR KEROSENE TRACTORS

Aultman-Taylor Kerosene Tractors are built in three sizes—there's a size to fit your farm. Drop in at our Salt Lake City Branch and see with your own eyes the best tractor money can buy.
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DEPT. 2, MANSFIELD, OHIO
UTAH BRANCH: 525 WEST FIRST SOUTH ST., SALT LAKE CITY.

ADVANTAGES OF FALL PLOWING

Grant Hartman.

By plowing our ground in the fall we get a much better seed bed for our spring crop, whatever it may be, than by spring plowing. This is especially true for beets. Plowing in the spring is all right if the conditions are right, but so many times the ground is either too wet or too dry. By plowing in the fall we do away with taking this chance. Even if it is dry in the fall it is best to plow anyway. By the tim it lays all winter and Jack Frost works on it, and it receives the winter snows, it will be in good shape in the spring. If it is cloddy in the fall it will pay to roll or harrow the ground in order to mash the clods down.

Another advantage is that one can plow deeper in the fall than in the spring with good results. This is important in growing good crops. Two or three inches of ne soil turned up in the fall, after it has frozen and thawed, will not bake and crust like it will if turned up in the spring.

By having ground plowed in the fall one can get crops in much earlier which will insure a better crop. It will enable one to sta t the year's work with everything caught up and to do everything during the whole summer when it should be done. Sometimes when it is a wet spring and there is lots of plowing to do, one gets behind and never gets caught up all summer.

Another thing: it is a big advantage to those who are feeding stock to have their plowing done in the fall. Then all they have to do in the spring is to plant the seed. This will not interfere with the feeding nearly as much as if one has to do the plowing.

My way is to leave the manure alone in the spring and as soon as the threshing is done in the fall, spread the manure on the field and give it a good deep fall plowing.

POULTRY

YOUR CHICKENS SHOULD BE WELL HOUSED

Proper Location and Construction of Poultry Houses Explained

There are two systems in common use for housing chickens. The one is the colony system in which the fowls are kept in small houses which can be moved from place to place over the farm and thus utilize much of the waste products of the farm. The other is the continuous or permanent system in which the houses are usually larger and not movable and a certain plot of ground is used for the runs.

The colony system is especially adapted for general farm conditions or extensive poultry raising and cannot be successfully used in a city lot or on limited areas. The advantages of the colony system are more free range, cheaper feeds, little or no expense in fencing, less attention to cleaning and sanitary conditions, and little need of regular supplies of animal or green feeds during the summer. The cost of labor is greater, as considerable time is required in going from house to house to feed, water, and gather eggs. Fewer fowls can be kept on the same plot of ground, and the cost of housing per bird is a little higher.

Location and Construction of Houses.

If possible the house should be located on an elevation so that there is a natural surface drainage away from the house, as damp ground means cold ground. A sandy or gravelly loam is best and more easily kept in a sanitary condition than the clay soils. On a well drained soil with a south exposure floors are not necessary in the building. If these conditions are not available, the ground should be made dry by thorough underdrainage. Any soil that will not support plant life is not good for poultry.

In many of the various types of houses that are in common use there are a number of factors that are important. The open or curtain front house may be adapted to almost any climate. This open front has a number of advantages. Dryness and fresh air without draughts are most essential to healthful fowls. In the open front house facing the south the maximum amount of sunlight is admitted which keeps the interior dry. If the other three sides of the house are free from cracks or openings, it will not be draughty, yet will allow a gradual diffusion of fresh pure air at all times. These open front houses should be equipped with a muslin curtain tacked on a hinged frame, so that it can be lowered over the opening during the winter, on stormy days and coldest nights. Cold pure air is better than warm impure air, yet it must be kept in mind that it is the fresh air that is desired and not the low temperature.

All nests and platforms for feed hoppers and water vessels should be up off the floor 18 inches to 2 feet so as to give the fowls all the floor space for scratching. These as well as the perches, dropping boards and all other internal fixtures should be removable so that they can be taken out to thoroughly disinfect for mites or contagious diseases.—Byron Alder, in charge of Poultry Husbandry Utah Agricultural College.

LICE AND MITES ON FOWLS

Lice and mites are the greatest enemies of the poultry industry. Millions of dollars are sapped from the industry by these little blood suckers. There is no time that a poultryman can feel that they are not robbing him. The extent to which they rob him depends upon the effort he puts forth to keep them down.

Lice

Lice are on the fowl continually and they are usually found on the head, under the wings and around the vent. Vent lice are most common.

A splendid treatment for lice is Blue Ointment. Apply about the amount of a kernel of wheat on the head (just back of the comb) under each wing and around the vent. The treatment should be applied about three or four times each year.

If Blue Ointment is used on little chicks, it should be used very, very sparingly. The amount required for and old hen is enough to treat a dozen little chicks. Chicks should always be treated on a bright, sunny morning; never at night or evening. All fowls should be treated during bright weather. If necessary to treat old stock when the weather is damp they should be kept in for three of four days. Never wait until the hens are very lousy before treating them. The easiest and surest way to keep lice down is never allow them to get a start. Treat every three or four months. One pound of Blue Ointment properly applied will treat five or six hundred hens. A pound of Blue Ointment should not cost more than a dollar and twenty-five cents in normal times.

Mites

It is necessary to treat mites differently as they stay on the fowls only while the fowls are on the perches, or on the hens while brooding. Paint the perches with some coal tar preparation, such as Kreso, Zenoleum, Lee's Lice Killer, or any other of the coal tar preparations.

We find the following solution to be the very best:

50 per cent Tallow.
25 per cent kerosene.
25 per cent coal tar preparation.

This solution should be heated to the boiling point, thoroughly mixed and applied while hot. We use an ordinary paint brush and paint the perches, dropping boards and all around the roosting chamber, up as high as the fowls are likely to touch. If the mites are kept out of the place where the fowls roost, they can do no damage.

Another splendid treatment for mites is to spray the perches, droppings boards and the walls and ceiling of the roosting chamber very thoroughly with a ten per cent solution of some coal tar preparation. An ordinary hand spray pump used for spraying for potato bugs is good. Of course the power spray pumps used in orchards are better.

The first warm days of spring is the time for the first application. If mites are not allowed to get a start during summer, there will be none to bother during winter.

Plenty of sunlight, clean houses and roosting quarters will do much in keeping down lice and mites. White wash, too, should be used freely. There should be no dark corners

(Continued on page 15)

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest,

H. A. PINEGAR

Wellington Utah

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

Last week we sold several of the farms we advertised to some of the best farmers in Utah. Wheat is selling this week in the Bear River valley for $2.40 a bushel. The new price of the sugar company for sugar beets will bring the farmers tremendous returns. If you are looking for a farm that will pay for itself, with your efforts, in a short time, these farms will certainly appeal to you.

40 acres at $115 per acre, all in crop this year; right near good town, close to school, in one of the best districts in the Bear River valley. Small payment down and ten years, 6 per cent interest.

We have 120 acres, with a beautiful home, large barn, all painted and in first-class condition; wagon sheds, machine sheds, automobile garage, bunk houses, summer houses for the men; in fact, there are numerous other buildings, including chicken pens and hog houses. This property is immediately adjoining the town of Tremonton, on the main state highway. This farm can be bought for $175 per acre, including all these improvements. This land will rent for cash and pay big interest on the money. Small payment down, ten years on the balance, 6 per cent interest.

In Cache valley we have a number of first-class farms for sale at from $10 for pasture land up to as high as $130 per acre, depending upon the location and improvements upon the ground. We have one nice home, surrounded by large shade trees and lawns, good fruit trees, large barn that will hold thirty or forty head of stock, with a big haymow overhead. This property has city water piped to the door; in fact, it is a beautiful place to make a home on a farm. We can sell you this property for $130 per acre for the irrigated land, throwing the improvements in, giving you ten years to pay.

In Salt Lake county, within ten miles of city limits, we are offering one of the best farms in this valley, containing 150 acres, with first-class imrovements, all under high state of cultivation, at a very reasonable price. We may consider some first-class Salt Lake property on this farm. If you desire to own a farm and live in Salt Lake, it will be impossible to find an equal to this farm.

We still have one nice dairy farm for sale in Cache valley, containing 160 acres. This farm has sixty acres of irrigated land and 100 acres of pasture land. We are holding this irrigated land at $100 per acre and the pasture land at $10 per acre.

On Fourteenth South we have a beautiful nine-room house, two blocks from the car line, surrounded with nice lawns, large shade trees, a splendid family orchard, and berries. This property contains six acres, all under a high state of cultivation; barns, chicken runs and numerous other outbuildings. This house cost approximately $8000 to build. This property can be had for $7000, 10 per cent down, ten years on the balance at 6 per cent interest. If you are looking for a beautiful suburban home, where you can raise a garden, fruit and berries, and chickens, it will certainly appeal to you.

We also have on a five-cent car line some one-acre tracts for $450 per acre on a small payment down.

KIMBALL & RICHARDS
"Land Merchants,"

52 and 54 Main Street,
Salt Lake City, Utah.

Phone Was. 963.
FARM AND RANCH DEPARTMENT.

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district at a good buy. Ed. Pearson, Route A., Delta, Utah.

Your Chance to Make Some Money

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

Our Proposition

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. Albertson

604 Dooly Building

SALT LAKE CITY UTAH

FOR SALE OR EXCHANGE

Southwestern Idaho highly improved irrigated income property with no incumbrance. Splendid community, near good town. Good water right. Price right and terms easy. Will consider an exchange for developed or undeveloped irrigated land in eastern Idaho or Utah where sugar beets are grown, also water logged land where drainage is available, if price is right.

Farm Owner, care of
UTAH FARMER
Lehi, Utah.

WYOMING RANCH BARGAIN

287 acres in Wyoming, all good bottom land, plenty of willows for shelter, 12 cattle, good young team, machinery and implements, 16 miles from railroad. Price $10,500, will consider trade in northern Utah.

FEDERAL LAND CO.

Ogden Utah

HOMESTEADS

For the best homesteads in Utah, write

GEORGE A. COLE
Monticello, Utah.

LICE AND MITES ON FOWLS

(Continued from page 14)

about the poultry house. Cleanliness and sunlight are hard on lice and mites. Many poultry diseases are the result of attacks of lice and mites.—Pren Moore.

MISSOURI CONTEST NOTES

1. Broodiness is an instinct which causes a hen to remain on the nest for the purpose of incubating eggs. By remaining on the nest, the lack of exercise, the loss of appetite, etc., cause the hen to re-absorb the eggs which are in the process of development, and use them as food. A broody hen not incubating eggs is a clear loss. The quicker the hen is broken from broodiness and the more feed you can get her to eat, the quicker she will begin laying again.

2. If fertile eggs are incubated for 24 hours, then kept cool for three days, the germs will die and these dead germs are the points where decomposition begins. Infertile eggs do not have these, and therefore keep better than fertile eggs. Don't permit broody hens to spoil fertile eggs.

3. Pens without males produce from 3 to 5 per cent more eggs than pens with males due to the fact males injure the females. Sell all surplus males after the breeding season.

4. Males tread from 30 to 40 females per day and one tread may fertilize from 10 to 15 eggs. Therefore, it is possible for one male to fertilize a great many eggs in one day. One male left with the flock will do much damage to the quality of the eggs in summer. Pen valuable males with a few females and use their eggs at home.

5. The straw was removed from a number of wooden nests which resulted in 15 times as many broken eggs as when the straw was in the nests. This caused not only the loss of eggs but a number of hens formed the egg eating habit. In addition to this, the eggs were not as clean as where straw was used in the nests. No one can afford to let the nests go without straw.

6. Hens fed an unbalanced ration produced only one-third to one-half as many eggs as hens fed a balanced ration during the same time. An unbalanced ration wastes from one-half to two-thirds of the feed. Be sure the ration is balanced.

7. Hens cannot make eggs unless they have lime to make the shells. Feed and water usually contain only enough lime to shell one egg for each ten eggs the feed would produce. The number of eggs produced from high priced feed should not be limited because of a lack of lime rock or oyster shell. Keep the hens at all times. Supply hard, sharp grit also.

8. A pen of hens which had water before them at all times were given water only once each day which reduced the egg yield one half. Water is cheaper than feed but worth just as much to the hen to make eggs. Provide large water vessels and keep them well filled.

9. "The same sun which hardens clay will melt wax." The same sun which is so beneficial in the poultry yard may do great injury if it is too strong. Better results are always secured during summer where plenty of shade is supplied. If there are no trees in the poultry yard, build a shed of some kind for shade.

10. The little red mite which is gray unless filled with blood, sucks the hen's blood during the night and stays in cracks and crevices about the roosts, nests, etc., during the day. Hens annoyed at night by mites are not profitable. Spray roosts once each week wth one part crude carbolic acid and two parts coal oil.

—o—

ATTRACTIVE FARM HOME WITHIN REACH OF ALL

We should not be content to live in plain unattractive surroundings—plant trees and shrubs. The writer was recently in conversation with a new comer to our state from an older settled portion of the country. Said this person: "Perhaps you have lived in this region long enough to understand why it is that so many farmers who are prosperous enough to own an expensive automobile are satisfied to live in such homely little shacks of houses with such unattractive surroundings."

It must be confessed that the same query has lain, unvoiced, in this plain way, for a long time in our own mind. It certainly expresses very frankly a condition which prevails all to commonly among our rural habitations. The answer involves several reasons among which are probably lack of interest in and appreciation of attractive home surroundings, lack of time to give to "fixing up" around the place, lack of knowledge as to how the home surroundings can be made attractive without great expense, and because the owner, himself, lives in town.

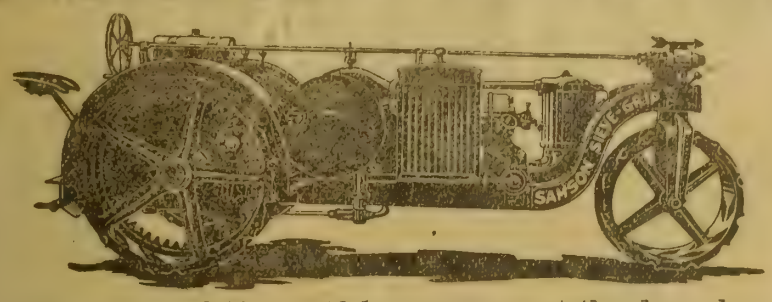
Rural homes are to be found occasionally, however, which show a commendable pride and the enterprise on the part of the inhabitants to make an attractive place.

When it becomes more generally known how much may be done by the judicious planting of trees, shrubs, and vines, and the cleaning up and proper disposal of rubbish, weeds and discarded farm machinery our rural homes will become not only more inviting in appearance but will attract the best buyers when sold. It is not necessary to build an over-sized, expensive, ornate house on the farm to realize the truest home qualities. Much better results often follow the planning and carrying out of a well designed, inexpensive planting plan, with suitable flowering plants, vines shrubs, and trees.—B. O. Longyear, Colorado A. C.

—o—

If cans are scarce, bottle tomatoes in the farm of paste for soups, stews and sauces. (Farmers' Bulletin 841, U. S. Department of Agriculture, Washington, D. C.).

SAMPSON SIEVE GRIP TRACTOR



This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns kerosene or distillate, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price $1,600.00, delivered on cars at Salt Lake.. Tractors on hand for immediate delivery.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

Berkshires For Fall Breeding

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BALLAMOAR

FARMS

50—Spring Boars and Sows to Select From—50
Our 1917 Crop is Equal to Former Ones.
Write for Prices.

Caine Livestock Co.

RICHMOND UTAH

$40.50 Los Angeles and Return

Tickets on Sale Daily

June 15th to Sept. 30th

Diverse Routes Via Rail and Steamer, Including San Francisco

Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.

Stopovers at All Points. No Validation Fee.

Final Limit October 31, 1917.

SALT LAKE ROUTE

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WM. WARNER, A. G. P. A.,
Salt Lake City, Utah.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Duroes"

IF TAKEN BEFORE SEPT. 15th, We Will Sell Cheap

One-half dozen yearling sows, one dozen spring pigs. All pure-bred Duroes.

DR. L. N. ELLSWORTH
Payson Utah

ALFALFA SEED

Good grade, free from weeds. Price 11½ cents per pound. In lots of 1000 pounds or more, 5% discount. Samples on request. Sow in August and September for best results.

MARCUS SKEEM
Oasis Utah

EAR TAGS PERFECT

Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

The Causes of Disease

O. M. Ball.

A strict definition of the word disease would include all disturbances of the normal structure and function of the body. As usually used, however, the word mean's those sicknesses of various kinds, either temporary or permanent, which are caused by germs. These latter may be either of animal nature, as, for example, the exciting cause of malarial fevers, or they may be members of the plant kingdom, such as the bacillus of typhoid fever. They are almost always of microscopic size, and hence wholly beyond the range of vision of the lowest groups of animals and plants respectively.

The deleterious action of such micro-organisms on the bodies of higher animals and plants arises in one of two ways, or in both. In the first, the germ causes a more or less profound alteration or destruction of the cells and tissues of the host. In the second, tne micro-organism secretes or excretes a toxic substance which, upon being absorbed by the host, produces the mptoms of sickness. The action of the tubercle bacillus may be cited as an example of the first mode. In this case the tissues of the host, most often those of the lungs, are destroyed by the invading germs. The bacillus of tetanus, or lockjaw, will serve to illustrate the second. Here the invading organisms do but little or no injury directly to the tissues of the host. The germs, however, excrete, an extraordinarily powerful poison, which is absorbed by the tissues of the nervous system, with results that are only too familiar. The bacteria causing typhoid fever probably acts in both ways.

The discovery and proof of the relation of bacteria and other low organisms to many of the diseases of man and other animals, and of plants, was one of the stupendous achievements of modern science. Perhaps no other discovery ever caused so profound and rapid a change in the mode of human thought, nor so radical an alteration in time-honored customs and practices, and especially in the field of medicine. The physician of a generation ago endeavored to cure sickness, and knew little or nothing of the cause, and still less of how to prevent disease; he of today labors hard to cure, of course, but still more heroically to prevent.

Modes of Infection.

In the language of the people, we "catch" a cold, or tphoid fever, as the case may be. For all intents and purposes this is a correct conception except that we "catch" or become infected with the germ, which under favorable conditions does the rest. The ways in which infection is produced are manifold. The words "contagious" and "infectious" as applied to certain diseases, in popular language, are supposed to indicate different modes of transmission of the virus, but in reality no such distinction can properly be made. However, one becomes infected with the virus of measles or of smallpox, for example, usually by coming in contact with patients suffering from these complaints, or with their clothing, etc., while the infection of such diseases as influenza, typhoid fever and consumption may usually, perhaps, not be so direct. As a matter of fact, however, in no case, even of the most thoroughly studied, are all possible modes of infection, or "contagion," known. On the whole, it would appear that "long distance" infection, that is, through the air and through drinking water, is far less common than formerly supposed. The exact studies of recent years have shown that in most cases infection is by contact, either with sick persons or with their excreta. For example, the commission consisting of Drs. Reed, Vaughan and Shakespeare, appointed to make a study of the very large number of cases of typhoid fever occurring in the military camps during the Spanish-American war of 1898, found that infected water played but very little part in the spread of this disease. This conclusion was based in part on the observation that the fever was not evenly distributed throughout the camps, as would have been the case if many men had drunk of infected water, but that the cases were confined to squads or companies. It was found that probably every regiment in which the disease was epidemic had received recruits or additions, some of which were carriers of mild or unrecognized cases, and that these were, by man-to-man infection, the starting points of fresh outbreaks. The commission made an especial study of 1,608 cases, the history of which was accurately known both as to time and place. Of these 35.01 per cent could be directly connected and 27.79 per cent indirectly, making a total of 62.80 per cent of cases in which the connection could be more or less exactly established. The commission, however, recognized the possibility that a certain proportion of the cases could have been transmitted by flies, dust, etc. A study of typhoid fever in the Boer war led to similar conclusions on the part of the commission of English surgeons, though they did not lay so much stress on contact infection as did the Americans. Many other students have reached similar conclusions after careful study of epidemics in widely separated countries. Fulton in 1904, and Egbert in 1905 proved that typhoid fever prevails far more extensively in country ditsricts than in the city. Formerly it was thought that the greater number of cases arising in the country could be accounted for on the supposition that wells and springs used for drinking water were the sources of infection, but it is far more likely that these cases arise from direct contact.

Although these data would seem to relieve drinking water from much of the burden of guilt that has been laid upon it in the past, it must not be forgotten that water can be, and very often is, the indirect agent of transmission of pathogenic bacteria. Water from shallow wells and from springs is often nothing more than surface water that has penetrated the upper layers of the soil to reappear in the veins tapped by the well, or on the surface as a spring. If now the surface soil has become contaminated by the excreta of typhoid patients, for example, it is quite possible that some of the bacilli which swarm in such excreta may find their way into the water of the well or spring. Such contamination is especially liable to occur where surface drainage runs directly into the water supply. In by far the greater number of cases, however, the water of a well or a spring is in motion, running in and then out, and so contamination from flooding would at most be but temporary.

Until of late most students of infectious diseases have believed that soil and water could become more or less permanently infected with pathogenic organisms, that is, that the germs lived and multiplied in the soil and water. This view has been very tenaciously held as to the typhoid bacillus. Nevertheless, it is highly improbable that even the germs of typhoid fever can exist for any considerable period in either soil or water. The normal habit of most pathogenic bacteria is in the body of some plant or animal. When the germs have passed out of the host, in most cases their life history is ended, unless in some way they re-enter another host. If, therefore, water or soil shall have been found infected with such germs, the evidence is practically conclusive that somewhere in the immediate vicinity there are infected persons or animals whose excreta are furnishing a continuous supply of the pathogenic organisms.

Answering the Nation's Call

IN this "supreme test" of the nation, private interests must be subordinated to the Government's need. This is as true of the telephone as of all other instrumentalities of service.

The draft for war service which has been made upon the Bell System is summarized in a recent Government report.

Government messages are given precedence over commercial messages by means of 12,000 specially drilled long distance operators all over the country.

The long distance telephone facilities out of Washington have been more than doubled.

Special connections have been established between all military headquarters, army posts, naval stations and mobilization camps throughout the United States.

More than 10,000 miles of special systems of communication have been installed for the exclusive use of Government departments.

Active assistance has been given the Government by the Bell System in providing telephone communications at approximately one hundred lighthouses and two hundred coast guard stations.

Communication has been provided for the National Guard at railroad points, bridges and water supply systems.

A comprehensive system of war communication will be ready at the call of the Chief Signal Officer, and extensive plans for co-operation with the Navy have been put into effect with brilliant success.

As the war continues, the demands of the Government will increase. And the public can help us to meet the extraordinary conditions by putting restraint on all unnecessary and extravagant use of the telephone.

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FARM LEAKS

The interest of any farmer is at once aroused when it is announced that there is a leak in the wheat bin, the milk pail, vinegar keg or even the watering tank; all are small matters comparatively, but they indicate a loss that should be stopped, according to the principle, "Take care of the little things and the big things will take care of themselves." This interest is all right. Leakage or deterioration of animal vigor, thrift and flesh should should create as much interest, as least, as these smaller losses.

We do not suggest that there be more attention directed to the larger affairs of the farm and less to the smaller matters, but we do insist that as a money-maing proposition the keeper of livestock cannot afford to start into the winter unprepared in the matter of feed and shelter to keep his animals, especially the meat-producing kinds, fully up to their condition when they left the autumn pasture for the winter feed lot.

Every pound of animal flesh is worth its market price at the end of the grass period. If the animal is permitted to shrink or lose flesh during the winter feeding period to the extent of 100 pounds, there is a bad showing for a profitable industry in the wintering of these animals. The leakage of 100 pounds of flesh and the feed consumed during this period would necessarily have to go to the loss side of the account. This kind of business could not be carried on safely except by someone who had other resources to draw on besides profit in the business.

How many farmers and feeders of livestock can weigh up their animals at the opening of the grass season in the spring, the common animals of the farm, exclusive of fat stock or the feed lot division, and find them up to or ahead of the previous autumn weights? On the other hand, how many have left but little more than the hide and the growth of bone that was made during the previous grazing season? The best lesson possible for the keeper of the common stock cattle is to weight up the bunch now, then take their weights before turning out to grass kept on the farm. Close up the cracks in the cattle sheds, cut off the wind from blowing on them; a tight windbreak is a protection that all animals need. This, with plenty of straw for bedding, will keep them comfortable during the coldest weather, and the leakage or shrinkage will be greatly reduced.

THE BIBICAL WEST.

The following sign is nailed to one of the slender posts supporting the porch-roof of a country store in a hamlet of the far West:

"Don't hitch your bronchos to the pillars of this temple. Remember Samson."—Christian Register.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 5 LEHI AND SALT LAKE CITY, UTAH SEPTEMBER 1, 1917

THE VALUE OF A PURE BRED BULL

William Olsen.

It is a breeder's axiom that the sire is half of the herd, but I would go just a little further, and say that it is the greater part of the herd.

In selecing a bull for use in his herd the cattleman must not loose sight of the fact that good quality may be bred out as quickly by the use of a scrub bull as it can be bred into the herd by the use of a good pure-bred sire. The unfortunate thing is that so many farmers today place such a low estimate upon the importance of the bull that they use in their herds. One must breed either up or down. If the sire is a weakling the whole structure of your breeding will come to naught.

The first thing, it would seem, that one should do is to consider the question of what breed you are going to have. If you plan to build up the livestock you now have you must decide upon the breed of bull that will best serve your interests. After you selected the breed then secure the best animal possible. If you are in the dairy business you should decide upon one of the established breeds. If you are producing beef cattle, the same thing would be true. There is no half way or general purpose breed. The spirit of the day is specialization. I have yet to see the man who has been able to produce a good beef animal, and at the same time be a large milker. You must make up your mind to stick to the one breed. To the man who is just starting out, the question of a good sire is of great importance, because he cannot afford to take many chances. For this reason his most profitable investment will be a pure-bred bull of known quality, though he may have to pay a good price for him.

If you are going to produce dairy cows you can raise the heifer calves from good cows, but you must know their value and their ability to produce, and the best way to do this is by being a member of a cow-testing association.

Some valuable information relative to the improvement of the dairy herd by the use of a good sire was published at the University of Illinois by Wilbur J. Freezer. He said in part:

"'If the good purebred sire improves the milking capacity of his daughters only one and one-half pounds at a milking above the production of their dams it would mean an increase of 900 pounds of milk for the 300 days that an ordinary cow should give milk. These daughters may, therefore, be credited with some 1000 pounds more milk per year than their dams produced. At the very low estimate of $1 per 100 pounds this extra milk would be worth $10 per year. The average cow is a good producer at least six years. It will on the average be four years after purchasing the sire before his first daughters will have brought in the first extra $10. Now $8.23 kept at compound interest for these four years will at 5 per cent equal $10. Therefore the daughters' improvement or increase in income the first year is worth $8.23 at the time her sire is purchased.'

"An illustration of the cash value of the daughter's improvement, inherited directly from the sire figured on the same way for each of her six years of producing milk.

Improvement first year	$8.23
Improvement second year	7.83
Improvement third year	7.46
Improvement fourth year	7.11
Improvement fifth year	6.77
Improvement sixth year	6.45
Total for six years	$43.85

"In an ordinary herd of say 35 to 40 cows there should be at least twelve heifers each year worth raising, making it possible for a bull to earn twelve times the above total of $43.85, or $526 per year for three years that a bull is ordinarily kept in service. Therefore the cost of providing each of the above mentioned twelve hei[illegible] with one good parent would look something like this:

	Purebred.	Grade.
Cost of sire	$150.00	$30.00
Interest 3 yrs. at 5%	22.50	4.50
Cost of keeping, 3 yrs.	100.00	100.00
Risk of losing, 3 years	50.00	10.00
Total expense 3 yrs.	$222.50	$114.50

Extra cost of	
good sire 3 years	$108.00
good sire 1 year	36.00
good sire, each daughter	3.00

"Leaving out the male calves it would appear that it cost $36 to provide one good, purebred parent for the twelve heifer calves raised each year, or $3 per heifer. The expended [illegible] year for [illegible] in all—a clear [illegible] 85 to the income of each daughter or a net profit of $40.85, and of $1470 for 36 daughters in three years."

Who would want to con[illegible] bull after a careful study of [illegible] the use of pure[illegible] to continue [illegible] of our livestock people are do[illegible]

Unfortunately in this State we have had a number of "registered" bulls with fancy printed papers brought into the State that are of unknown and in some cases poor quality. The culls from registered herds have been purchased and brought here simply because they conform to the technicality of the law, and in some cases our farmers have paid a good price for them,

(Continued on page 13)

Higher Prices Are Predicted For Cattle, Sheep and Hogs. Are You Going to Help Increase the Supply?

Corn For Silage

Manti, Utah.

Utah Farmer:

DEAR SIR:—Having read an article written by A. C. Beltzer on "Plan to Build a Silo," the question that comes to my mind is—in what way is the corn harvested, with a corn-binder or what other piece of machinery, and in what way is it handled while being brought from the field to the cutter?

These are questions that have been asked by men in this section where we have no silos.

Please answer these questions through the columns of your worthy paper.

Wishing you success and thanking you, I am,

Yours truly,
June Munk.

Answered by Ben R. Eldredge.

Any good variety of corn that succeeds well in the locality where it is needed will make silage. It should be planted with an idea of gaining as great yield as possible of grain, foliage and stalks and may be planted either in hills or drills. It is cut by hand or machine. The machine or corn harvester cuts one row at a time, binds and throws off the bundles, using the same twine as the grain binder, commonly used for wheat, oats and barley. The best implement for hand-cutting is a short-handled hoe, with rather a wide, sharp blade. The length of handle from the socket would not be over 12 inches, though, if one prefers, it may be longer, this according to individual preference. A strap nailed to the end of the handle in such a way that it can be slipped over the hand and around the wrist will be found convenient and a file should be carried to occasionally rub up the edge of the hoe blade.

Corn should be cut as close to the ground as possible. I prefer, in my own practice, to cut so close to the ground that there will be no stubble, and here is where hand-cutting excels that of the machine or binder. The entire stalk should go into the silo but the binder sometimes leaves more stubble and waste on the field than some of us like to see. In fact, some of our most successful silo owners in Utah contend strongly in favor of hand-cutting.

Where an efficient number of hands can be placed in the field, corn may be loaded as fast as cut, on flat-rack wagons, but where cutting has to be done in advance of the wagons, corn is laid in small piles, as cut, these piles being of such a size as can handily be placed, armful at a time, upon the wagon.

While the flat hayrack has been used and can be used for moving the corn from the field to the cutter, in some instances low-down racks have been built, which are more suitable for this work. These are built by swinging the plat-form under the axles of the wagon. A design of this wagon and other information concerning the making and feeding of silage will be found in Farmers' Bulletin No. 578, which can be had by anyone free of cost upon application to the U. S. Department of Agriculture, Washington, D. C.

When the corn is hauled to the silo it is fed into a machine, which cuts it into small pieces, from half to three-quarters of an inch in length and raises it either by a chain elevator or a powerful blower through a pipe, over the top of the silo wall, when it falls into the silo and is spread and tramped by men working there. It is essential that it be tread well around the sides of the silo, and evenly spread or the heavier parts of the ears and butts of the stalk will fall into one part of the silo and the lighter parts of the leaves and tassels will settle into other parts and the silage will be unevenly mixed and also settle unevenly causing sometimes the admission of air or the retention of air, which results in mold, rather than the proper fermentation which is essential in the curing of good silage.

The time for cutting is at early maturity; when the husks over the ear are beginning to turn yellow and a few of the lower leaves of the plant are turning yellow, then there will yet be much moisture in the upper leaves and the stalk will be juicy, and it is essential that the juice go into the silo. If the corn gets too dry, water will have to be added, as the corn goes into the silo, to take the place of that amount of sap which has been evaporated from the leaves and stalks. Corn too dry molds and does not pass through the fermentation. If the corn is cut too green, it is not so good, the silage becomes over-acid or too sour.

Dry farm corn has yielded from four to eight tons of silage. Irrigated corn from eight to twenty-eight tons. Average for irrigated corn is from twelve to fifteen tons per acre.

BLACK HEAD

Delta, Utah.

Utah Farmer:

We have a flock of some forty turkeys, some are affected with "Roupe" and we are losing some from this cause. The heads swell and causes the bird to starve finally. We should appreciate it very much if you would send us a receipt for a cure.

Respectfully,
Wayne Shipley.
Roosevelt, Utah.

Utah Farmer:

I had about fifty turkeys that were about half grown when they started to act quite strange; they act like they had something in their throat, and their eyes would swell shut, and they would stand around for two or three days then they would drop dead.

Could you tell me what is the matter of them, and advise me what to do?

A Subscriber.

Answered by Byron Alder Poultryman
Utah Agricultural College.

I hardly think that the disease that is among your turkeys is roup. This disease is not as common among turkeys as among other fowls. It is usually caused by keeping the fowls in unsanitary quarters, especially in drafty, damp, and poorly ventilated houses. The treatment is, of course, to first remove the cause. The first symptoms of roup are those of a common cold which later usually develops into a swelling of the head particularly just below the eyes. This disease is quite contagious, therefore, infected birds should be immediately isolated, and the mouth and nostrils washed out with a good antiseptic. If there is a swelling under the eyes it should be opened and the material formed there should be squeezed out and the cavity washed with a good antiseptic.

"Black head" a contagious disease, which I believe is causing your loss, is more common and more fatal among turkeys. It is most contagious among turkeys between the ages of six weeks and four months. It occasionally, however, effects grown turkeys. The symptoms of "black head" are quite similar to some other disease so that you can not be sure it is this disease until you have examined the dead birds. Some of the earlier symptoms are: the bird drinks a great deal but refuses to eat and grows weaker until death, which usually occurs in a few days or a week after the first sickness is noticed. Diarrhoea commonly occurs; the color of the droppings varies from white to brown, but are usually bright yellow. The head of the turkey in the last stages of the disease sometimes turns dark or black, this is where the disease gets its name. The name, however, is misleading as the head often does not turn black or dark, and it will sometimes turn dark because of other troubles. The only sure indication of this disease is found by cutting open and examining a dead bird. One or both of the Ceca or "blind guts" are enlarged and full of a cheesy material. The liver is more or less covered

(Continued on page 15)

Agricultural College of Utah

Logan, Utah

Agriculture—The food supply of the nation has become a question of prime importance. Upon the proper husbanding of it depends ultimately the power and the future of the nation. Science holds the keys. Trained agriculturists are needed to unlock the treasure vaults of the earth.

Home Economics—Parallel in importance to the production of food is its conservation and economical use. Ignorance in the home of the Nation will defeat our armies abroad. Trained women are needed to teach and practice the principles of scientific home economy.

Agricultural Engineering and Mechanic Arts—Positions for men trained in Mechanical Arts far exceed in number the available men to fill them. The graduates of the College in these lines have long since been placed in responsible and lucrative positions. **What the Great War is now destroying must some day be rebuilt and reconstructed.**

Commerce and Business Administration—We are living in a nation that is primarily indusrial. We are living also in a commercial age—an age of Trade and of Finance. Men cannot be found to supply the demand for $5,000 and $10,000 positions. The call is for men who know the principles of business efficiency.

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Military Science and Tactics—The Utah Agricultural College now constitutes a unit of the Reserve Officers' Training Corps, the purpose of which is to train those who desire it, for commissioned officers in the United States Army.

These Courses of Instruction are Open to You at the Utah Agricultural College.

Regular entrance to Baccalaureate courses prescribe high school education, but

Those 18 years of age or over who have had no high school work are eligible to enter without examination any courses which they can profitably carry.

Fall term open September 10, 1917.

Write for catalog and illustrated circular.

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VOLUME XIV. LEHI, UTAH, SATURDAY, SEPTEMBER 1, 1917 No. 5

The Irrigation of Sugar Beets

By F. S. Harris Director of Experiment Station.

The sugar beet crop during the last few years has come to be one of the most important sources of income for farmers in many sections of the country. The fact that the sale for the crop is certain at a price that is known in advance, in addition to the high type of farming that usually accompanies sugar beet raising, makes it probable that the sugar beet area will be considerably extended during the next few years.

In the United States the beet sugar industry has proved to be most successful and has found its greatest development under irrigation; in fact, most of the sugar beets of the country are now produced with the aid of irrigation water.

The expense of raising an acre of beets is so great that every condition should be as favorable as possible in order to prevent losses. Unless the soil and moisture conditions are favorable it is impossible to get a crop of sugar beets sufficiently large to pay the cost of production. The cost of raising an acre of grain is relatively low, and if the crop is poor the loss is slight; with beets the farmer cannot afford to have a failure.

These conditions make it especially desirable to understand the water requirements of the sugar beet plant. A little increase in yield adds considerably to the relative net profit of the crop.

It is impossible to give rules for irrigation that apply under all conditions, but it is believed that the experiments reported in this bulletin will be directly helpful to those having similar conditions, and they may offer some suggestions to those having different conditions.

The best amount of water to use, the proper time to apply it, the number of applications, and other problems connected with the irrigation of sugar beets necessarily vary in different parts of the country and under differing soil conditions. In various places extensive experiments have been conducted on the water requirements of this crop, but in the review of the literature only those closely connected with the experiments that follow will be discussed.

In a government report of irrigation and drainage investigations in different states, data from Kansas show that with a seasonal rainfall of 13.7 inches the yields per acre of beets and sugar were higher from an irrigation of 5.31 inches on July 26 than from 5.7 inches applied April 12, although the percentage sugar was 1.2 higher for the early irrigation. The percentage purity was higher for the beets not irrigated. The Colorado results indicate that winter irrigation and early seeding favor a good stand. With observations on twenty fields irrigated in the usual way, the average amount of water applied during the season was found to be about 15.6 inches. Most farmers irrigated from one to four times with about 5.8 inches to an application. The total water used, including the rainfall, was not more than 24 inches, although some practised winter irrigation in addition. Cultivation as soon as possible after the water was applied was found to be absolutely essential to successful beet culture on this soil because of the crust formed by the water. Failure to cultivate deeply re-

(Continued on page 10)

Plats of beets in the experiment.

Beets shaped like 94 give a good yield and there is but little waste in topping. With beets shaped like 96 there is considerable waste. The shape can be affected by irrigation.

Beets in the experiment being harvested. The flumes that carried the water are seen running across the field.

World Shortage of Cereals

By E. B. Brossard, Farm Management Demonstrator, United States Department of Agriculture and Utah Agricultural College Co-operating.

There is a world shortage of cereals at the present time and unless there is a bumper crop this year the per capita consumption of all the allied nations in the world war will of necessity be less than normal. This situation may be alarming but it is better to realize the conditions now and do all we can to ameliorate them than to have them come upon us unexpectedly.

Figures compiled from Reports of the International Institute of Agriculture at Rome, Italy, show the problem the nations at war are facing relative to the cereals (wheat, oats, barley, rye, and corn). These figures show that, when the world's supply of these grains is considered after deducting the assumed normal consumption, there is reason to be somewhat alarmed. There is estimated to be a surplus of wheat, rye, barley, and oats, equivalent to about 7 per cent of the 1916 production of each of these crops, and a deficit of 14 per cent of the corn production. This means that there was not available August 1, 1917 the usual stock carried forward each year, and, therefore, unless a bumper crop is made available for consumption in 1917 there will be a real world's shortage in 1917-18, which means reduced consumption per capita.

In view of the fact that Argentina's 1916-17 wheat crop is reported greatly damaged by locusts and that the shipping tonnage of Australia's surplus wheat lessens its availability, the outlook is not encouraging. If the United States is called on to export more than normally this year and the winter wheat crop is below average, as reported, there must be a substituting for this crop or a decreased consumption. England requires large imports of all cereals as does France, especially of wheat and corn. Italy is self supporting in barley only, there being a deficit in all other cereal crops. Canada and the United States export wheat. Canada also exports barley and oats and the United States some corn.

A study of the surpluses and deficits of the available cereals on hand in the allied nations after subtracting the normal consumption of each nation shows that the United States has a surplus of all crops except corn, but she falls below the 1916 export mark in all crops except oats. England, France, and Italy, all must import and in total they must have around 450 millions of bushels of wheat, 23 millions of bushels of rye, 160 millions of bushels of corn, 61 millions of bushels of barley, and 105 millions of bushels of oats. The United States and Canada can easily provide the oats, about half the wheat and rye, and some of the barley. Australia and India with a surplus of over 160 millions of bushels must provide the larger part of the balance if Russia does not export any as was the case in 1916.

A five year average of wheat exports by leading producers shows that normally the United States exports one-fifth of her wheat; Argentina one-half; Australia one-half; and Russia and India each one-seventh. The heaviest exportation ever made was by the United States in 1915 when almost 333 millions of bushels or one-third of the crop was shipped out.

(Continued on page 7)

DAIRYING

REPORTS FROM COW TESTING ASSOCIATIONS

Many points of interest to the dairyman can be learned from reports of cow testing associations. At the present time a strong fight is going on against the boarder cow.

Boosting the dairy business all the time is what the members are doing, a better spirit of co-operation is being put into practice. They are organizing bull associations and purchasing purebred cows for the members. The following reports has just been compiled and sent out from the western office of the Dairy Division at Salt Lake City. Read carefully these figures and compare the averages. Notice the extreme cost of feed per cow from 77c to 7.93.

Following is a summarized report of the testing done in nine states durthe month of June:

Name of Association.	No. cows tested.	Average lbs. milk.	Average lbs. fat.	Average cost feed per cow.
ARIZONA.				
Arizona Pioneer	563	672.0	24.1	$3.50
Madison Scottsdale	389	676.5	25.7	3.75
COLORADO.				
Arkansas Valley	526	581.1	20.5	4.76
Douglas County	474	599.9	22.6	.77
Johnstown	421	631.3	27.3	7.93
UTAH.				
Wellsville	410	838.0	32.8	2.00
WYOMING.				
Star Valley	333	——	26.8	.90
MONTANA.				
Jefferson Valley	302	531.0	19.3	2.25
IDAHO.				
Buhl Pioneer	445	757.0	28.2	4.24
NEVADA.				
Truckee-Carson	500	628.7	24.7	4.00
OREGON.				
Linn County	286	645.0	29.5	3.81
Junction City	300	652.0	29.3	3.24
Polk County	233	533.0	39.5	3.79
Marion County	363	676.0	31.1	3.51
Siuslaw & Smith River	447	675.0	37.2	1.00
Gresham-Columbia Slough	506	——	——	——
Curry County	570	854.4	36.4	——
Coquille-Myrtle Point	759	863.5	36.6	2.95
First Central	242	594.0	31.1	2.25
Yamhill County	271	844.5	41.8	——
Coos Bay	447	——	——	——
Tillamook	741	——	38.7	3.00
WASHINGTON.				
Duvall	515	833.0	31.1	3.11
Puyallup	539	781.0	31.0	5.10
Chehalis	460	891.0	32.9	2.57
Snohomish	369	805.0	31.8	3.06
Skagit Valley	1143	890.0	32.0	2.50
Stillaguamish	581	806.0	34.7	3.27
Clallam County	512	744.0	32.8	3.50
Fall City	481	744.0	29.0	——
White River Valley	610	883.0	29.7	4.22
Montesano	336	775.0	30.5	2.76
Jefferson County	412	806.0	31.9	1.65
Walla Walla Valley	466	681.0	31.4	4.29
Whitman County	325	792.0	34.6	7.62
Sunnyside	368	607.5	25.2	5.12
Ahtanum Wide Hollow	564	630.0	24.4	2.49

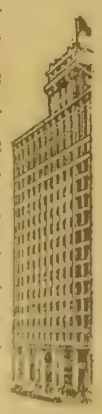
"Facts and Figures"

The next time you hear a man say that cow testing associations do not pay, show him the following table:

	Associations operating less than a year.	Assoc. operating 1 year, but under two yrs.	Associations operating over two years.
No. of associations	12	13	6
No. of cows	5,128	5,512	2,899
Average lbs. of fat	26.6	29.9	37.8

In compiling these figures, only those associations that had been operating continuously have been used. These data are taken from the June reports. Remember, all cows which had been in the associations for less than one year averaged 26.6. All cows in associations operating for one year, but under two years, averaged 29.9 lbs. butterfat. All cows which had been in the associations operating more than two years averaged 37.8 lbs. butterfat. If these figures are not conclusive, bricks or dynamite are to be recommended.

Do not let uneasiness regarding your valuables mar the pleasure of your vacation trip. Place them in one of our safe deposit boxes and forget them until they are needed. You can do this by mail. Write for particulars.



Walker Brothers Bankers

SALT LAKE CITY

SILAGE—CANNED CORN—NO TIN NEEDED

Less grain can be fed by many dairymen without reducing milk production, provided they feed more silage and legume hay. Less grain will be available for feeding to cattle, for much more than usual is needed now for human food, and the emergency demands that every effort be made for its conservation. Milk production must be maintained, hence every effort should be made to substitute other feeds for grain in the dairy ration. To do that the silo will help.

Fruits and green vegetables are canned so as to supply succulent and palatable foods to the family during the winter. Succulence is just as essential to the cow as to a human being. The abundant milk flow obtained from June pasture to a large extent is due to the succulence of the grass. Silage provides succulent feed during winter when pasture is not available. With silage in the ration dairy cattle can be kept in the condition of health common to animals on pasture. The digestive system of a cow is well suited for the utilization of large quantities of green grasses and other coarse, succulent material. Silage is palatable, and no other feed will combine so well with dry hay and a little grain to produce maximum economical results.

Siloing is an excellent way of preserving the mature corn crop or of saving one which for any reason must be harvested before maturity. About 40 per cent of the total food material in the corn plant is in the stalks and leaves. When the farmer harvests only the ears he loses nearly one-half of the crop; on the other hand, when the crop is put into the silo the losses are very small. When drought, frost, or insects attack a field of corn before it is ripe, the entire crop may be lost unless the farmer has a silo ready in which to preserve it.

No feed crops can be so successfully harvested under widely varying conditions as those that are put into the silo. Only in case of drought or frost is it necessary to rush the filling of the silo; rain or dew on the forage does not injure the silage.

The silo at all times, and particularly now, offers to the farmer one of the best means of reducing his feed bills. The present great national emergency places these questions before every farmer who keeps cattle: Have you a silo? If you have not, your herd is not most economically fed; why not build a silo and fill it before frost comes? If you have one, is it big enough to supply all the silage your cattle can eat before the next crop is harvested? If not, build another! You can buy one ready to erect, or you can build it yourself at small cash expenditure. Homemade silos of concrete or wood can be erected with little trouble.

Call on the extension department of your State agricultural college for any assistance that you may need in this respect. If the college is unable to help you, write to the Dairy Division, United States Department of Agriculture, Washington, D. C., for bills of material with full specifications for silos of different dimensions. They will cost you nothing. Will you not build a silo and do your part to prepare the Nation for the largest and most economical dairy production possible?

FEED MORE LEGUMES—LESS GRAIN—TO DAIRY COWS

"Economize on grain" is the slogan of the country. That means less grain for live stock. National necessity requires that human beings be fed first, and milk production therefore must be maintained, or necessary food will not be available. Substitutes, then, must be used as far as possible in place of grain for dairy cows. Clover, alfalfa, or other legume hay, when fed with good silage, will maintain a medium milk production at a relatively low cost.

At the Illinois experiment station the milk flow was slightly increased when 8 pounds of alfalfa hay was substituted for an equal weight of concentrates. The Alabama station increased the net profits by substituting cowpea hay for wheat bran. When an 11-pound grain ration and 5 pounds of mixed hay were displaced by an equal weight of clover hay, at the New Jersey station, the milk flow fell from 23.8 to 20.1 pounds, but the net profits were increased. In these trials the cows were also fed first-class corn-silage. Under ordinary farm conditions it is not to be expected that legume hay can take place of the entire grain ration, but if it is substituted in part, large quantities of grain will be released for human food.

The first step in bringing this condition about must be the planting of more legumes, and the sooner this is done the better it will be for the individual dairyman as well as his State and the Nation. Every dairy farm should produce at least one ton of legume hay for each cow on the place. It is not yet too late to produce additional legumes this year, and it is none too early to make plans for fall planting, so that next year our milk supply may be maintained by furnishing our dairy cattle, it addition to a liberal allowance of silage, an abundance of legume hay.

Will you do your share? Will you produce one ton of legume hay for each cow on your place?

CUTTER'S
BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."
Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.
Single Pills may be used for ordinary and range stock.
Double Pills should be used for pure bred and high grade stock.
Use any Injector, but Cutter's simplest and strongest.
Prices:
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50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
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Cutter's Pill Injector.... 1.50
Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
The Cutter Laboratory, Berkeley, Calif.
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HOLSTEIN CATTLE
Purebred Registered
Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 279, Brattleboro, Vt.

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OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL
For the Human Body—It is penetrating, soothing and healing, and for all old Sores, Bruises or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment
We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.
A Perfectly Safe and Reliable Remedy for
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Sprains
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Rheumatism
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The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

The Drainage of Irrigated Farms

R. A. Hart Senior Drainage Engineer.

Construction Methods.

In many instances owing to lack of humus the soils of the arid region are very flexible when wet, and the construction of drainage systems is very difficult and requires painstaking care and ingenuity. Special methods and devices have to be employed, and special machinery has been developed.

Drain lines must be laid out carefully and grade stakes set. The completed drain must be true to grade and as straight as possible. For hand trenching it is advisable to stretch a cord on the ground along one edge of the proposed trench, to obtain good alignment. To insure accurate grade at all points, grade planks should be set up at each station at a uniform height above the grade of the drain. A stout cord then may be stretched over the middle line of the trench from plank to plank and every point on this cord will be the given height above grade. Grade may be established at one end of each tile with a grade pole having a length equal to the distance from the cord to the proper location for the tile. This may be accomplished by keeping the cord taut by suspending a tile or other weight at each end and measuring down from the cord at the desired points.

Construction work always should start at the outlet of each line and proceed up the slope, so that the water developed will drain away.

In installing covered drains either hand labor or trenching machinery may be used. Frequently, on small projects, hand trenching is cheaper, but usually on larger projects machines can do the work more rapidly, economically, and satisfactorily. It is preferable to let a contract for the work to an experienced and capable contractor.

If hand labor is used it usually is necessary to operate with small gangs, ordinarily about a half dozen men to the line, as the trench must be opened from the top to the bottom as rapidly as possible and the tile laid and blinded before caving takes place. The men should work as closely together as practicable and not even the first spading should be taken more than a rod in advance of the tile laying. Each man should remove a spading, moving backward at the same time. The man removing the last spading should also grade the bottom. He should not step on the finished bottom and no one should stand near the edge of the trench, nor should wagons or material of any sort be permitted near the trench. The soil removed from the trench should be placed as far back as it conveniently may be. The tile should be laid at once and blinded by means of a few inches of earth caved from the edges of the trench. If the banks tend to cave off in large chunks or slabs it will be necessary to brace them apart with planks separated by stout crosspieces or trench jacks.

A very troublesome condition is that in which the presence of a wet, previous stratum near the bottom of the trench causes a lateral upward movement of the soil in the bottom of the trench. In such a case it is necessary to provide a tight cribbing to shut out the oozing material. It consist of two heavy timbers, held apart by trench jacks, behind which is driven lumber sheeting properly matched and beveled at the lower ends to insure a tight fit. The sheeting may be driven by means of a heavy maul and may be removed with a three-legged derrick and a special grabhook like that shown in the figure.

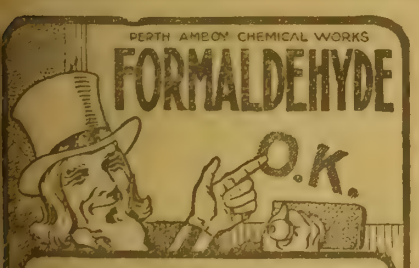
If the soil in the bottom of the completed trench is so soft that it will not support a man's weight, wooden racks or cradles should be laid under the tile to keep it in line and on grade. If conditions are exceedingly bad it often is advisable to use sewer pipe in place of drain tile, as the bells aid in keeping the line intact. Second quality sewer pipe is suitable and generally may be purchased at about the same price as drain tile. Under ordinary conditions, however, the use of sewer pipe is not recommended, since the cost of freight and hauling is higher than for drain tile and is heavier and more difficult to handle. Also, in stable ground it is necessary to dig out places for the bells, which considerably increases the cost of trenching.

Tile should be laid with extreme care. The joints should be as close as possible, and if the soil is semifluid and contains much fine sand and silt, it will be necessary to provide some means of keeping the oozing material from entering the tile joints. Almost all the water entering tile lines makes its way through the joints, practically none entering through the walls of even the more porous tile, so the covering for the joints must provide for the ready passage of water. Straw makes a very good filter when new, but it is likely to decompose and form a sticky, impervious mass over the joints. Brush and willows are not satisfactory and render any subsequent removal of the tile very difficult. Graded gravel, ranging in size from sand to pebbles an inch in diameter, makes an excellent filter, but it is not always available. Cinders also are satisfactory. Strips of burlap wrapped about the joints give good service. The custom of laying strips of building paper over the joints can not be commended, since the greatest tendency is for the sand and silt to enter at the bottom and if paper is wrapped tightly entirely around the joints the water itself will be shut out. For genuine quicksand, perhaps the best material is cheesecloth, which should be doubled about once or twice and wrapped carefully about the joint. This material soon decomposes, but in the meantime the soil becomes compacted so that the purpose is served.

The more pervious materials should be placed adjacent to the tile.

The backfilling may be done with a plow with three or more horses and a long pole evener, or with a scraper, road grader, or go-devil. Recently power backfillers have been placed on the market. All the soil should be returned to the trench and be banked up over it, so that future settling will not leave a depression over the drain.

In machine trenching it generally is necessary to draw a portable shield after the machine in which the tile may be laid and blinded before caving takes place. This illustration also affords an idea of the depth of drains required for reclamation of irrigated land. The man in the shield is standing on top of a 15-inch tile. There are several types of suitable trenching machines but, as machine work usually is let by contract, the choice of type must be left to the contractor.



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FORMALDEHYDE
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Greatest yield secured first by ridding seed grains of smuts and fungus growth. Formaldehyde is the cheapest and best disinfectant for stables, kennels, chicken houses and cellars—it also kills flies. Formaldehyde in pint bottles, 35 cents at your dealer, treats 40 bushels of seed. Write for new book reporting U. S. Dept. of Agriculture's experiments in seed treatment—FREE on request.

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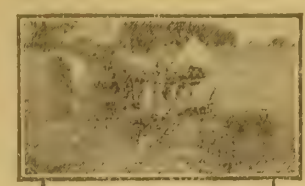
THE ORIGINAL
2-WHEEL TRACTOR
That Does All Farm Work WITHOUT HORSES

WHEN you begin to consider the purchase of a tractor, whether for a farm of 80 acres or more, there are a number of questions you will need to ask yourself before you buy. Here are some of them:

—Will it CULTIVATE as well as plow? Will it do ALL my farm work without horses? Will it work on plowed ground without packing the soil? Will it do the work quicker, easier, and save me hired help? Is it really a ONE-MAN tractor? Will it handle as easily as a team of horses, rather than be too heavy, clumsy and inconvenient? Is it ride out a tool [illegible] I am doing, or will I have to have someone run the tractor while I am operating the farm implement?

Here is the tractor that answers these and all other farm power problems of the average farm most practically and profitably. A tractor that is heavy enough to do all farm work that horses will do, yet light enough to be handy and work on plowed ground without packing your soil.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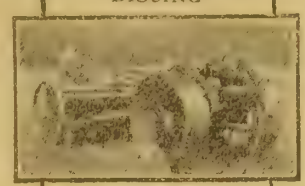
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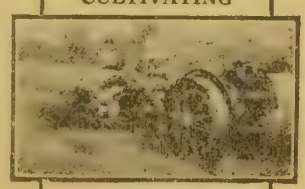
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ORIGINAL
MOLINE 2
UNIVERSAL TRACTOR

This is the original Two-Wheel Farm Tractor. It pulls two 14-in. plows; will disc, harrow, plant, CULTIVATE all hill and row crops, pull mower, binder, manure spreader, fill your silo—and do all belt work on the average farm. In fact, it will do anything you can do with horses; do it quicker, easier; and with less hired help. It weighs only 2800 lbs., but all its weight being on its two wheels —*all its weight is traction weight.* The tool you hitch it to forms the rear wheels and you do not have to pull around a ton of needless weight. It will back up with tools attached easier than a team will back. You can turn around in a small space; get close to the rows and the fences.

Write for Catalog Folder and read how farmers everywhere are solving the power and hired help problems on their farms.

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The Moline Line includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows, (Chilled and Steel), Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons.

Also STEPHENS SIX Automobiles

PLOWING

SECURE YOUR SEED WHEAT AT HARVEST TIME

If you want to increase your wheat yield next year the first thing to do is secure your seed. It should be good, clean, sound healthy seed.

If a farmer has seed from his own crop which is satisfactory so far as variety and general conditions are concerned, he should lose no time in getting it into shape for storage until planting time. The fanning mill is the farmer's best friend in this task. The farmer, by all means should have such a mill and if he has not and is unable to obtain one, should borrow or rent his neighbor's mill, or several farmers can join in buying one. A fanning mill removes weed seeds, smut and shriveled grain and leaves only plump kernels, practically every one of which may be depended upon to produce a thrifty plant. After it is cleaned, however, the seed should be treated in order that the smut may be prevented. Scab is less likely to be prevented by seed treatment, but the use of the fanning mill will assist materially in improving the crop grown from seed known to have contained scabby kernels.

If the farmer is dependent on outside sources for his seed he should buy from his neighbor if possible so that he may be more likely to get seed well adapted to his conditions. It is advisable to buy as soon after harvest as possible as at this time prices are likely to be lowest. If the farmer delays, his neighbors may dispose of all their surplus grain and he may be forced to plant seed grown under conditions radically different from his own. The farmer patronizes a seedsman he should insist on getting seed grown as near his section as possible.

If seed is affected by diseases, careful inspection will usually disclose the fact. The presence of stinking smut in wheat is indicated by the odor and the presence of scab by the appearance of kernels. Purchased seed should, of course, be cleaned and treated for the destruction of the spores of disease producing fungi, if the examination shows this to be necessary.

In choosing varieties of wheat the farmers should be guided by the experiences of his neighbors and the advice of his State Experiment Station. This is true also of rye, but there are available fewer varieties of rye than of wheat. The Experiment stations can furnish comparative statistics on the yields and behavior of a number of varieties of the two cereals.

After the grain farmer has procured a supply of satisfactory seed he should store it carefully so that it will keep in good condition and will be safe from the depredations of rats, mice and insects. Bins which are supposedly rat proof are available on practically all farms and it will pay farmers to see that they are kept in good condition to keep out the rodents.

First Credit Man—How about Jones of Pigville Center?

Second Credit Man—He always pays cash, so we don't know how honest he is!

UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region

Combined with the
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Established 1904.

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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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Save your straw. There are many ways to make good use of it.

The best time to kill a weed is when it is young. Never let one go to seed.

Plan now to store your vegetables and grains. You will make money by doing it.

Clean up your yards, barn and farm surroundings before the fall wet weather comes.

Our government has asked for an increased production of rye in Utah of 100 per cent for next year.

Clean fresh water should be provided for all livestock on the farm. Filthy water may cause disease.

Save the seeds of all plants possible. Do a little selective gathering, from the best plants, the seed for next year.

Next year a minimum of $2.00 a bushel for wheat is promised by the government. Every acre of available land that will produce wheat should be planted.

Don't hurry the ensilage harvest but do get ready with the machinery necessary, so that when the corn, peas or oats, etc., are ready you are equiped to do the work. Join with the neighbor if you can not buy the right kind of machinery.

PROFITS IN THE FARM BUSINESS

According to government experts, certain conditions are necessary to obtain best results. You should adopt a type of farming that is best suited to the climate. Available markets. The size or amount of farming should be large enough so as to make a fair wage for the farmer. The [illegible] of our products, whether this is livestock or crops must be good and of a standard quality. There should be a rotation and diversification of crops.

If these suggestions or rules are applied to your farm, it is a pretty fair test as to the profits you are making. We do not expect to compare your farm or methods; that is up to you.

Our government after years of study suggest the above points as a way to find the profit on your farm.

EFFICIENCY ON THE FARM

Will some of our readers tell us why or how it is that one farmer makes such a success, while his neighbor, only a cross the road, with similar conditions, only just makes a "live of it."

Under the direction of the Farm Management Department of the Department of Agriculture a great many farm surveys have been made and the result of these surveys shows that the mometary success of the farm depends largely on the business methods that are put into practice on these farms.

In nearly every line of human endeavor the matter of efficiency, the best and most economical way of doing things, is being tried out.

Successful business concerns and manufacturing plants obtain the best results when organized with the matter of efficiency uppermost in mind.

Why not apply these modern methods to farming? It can be done. Why not start now?

STORAGE OF CROPS

Definite preparation should be made for the storing of a greater part of our crops. With the general freight traffic already congested, the Government using a great deal of equipment for the transportation of troops, much of the unparishable crops will be delayed in reaching the market, and storage is the way to solve the problem.

Give the grain bin a thorough over-hauling. If it is not mice-proof, make it so if possible. If you have a large acreage of potatoes, prepare now before the wet weather comes and make those cellars.

The dumping of our great crops of food products on the market at harvest time will be sure to make a big difference in the price. The way to overcome this is to be prepared to store what you are not able to market at a profitable price.

SILO SAVES MONEY

There are a few people who still think the silo an experiment. They have not yet learned the value of the silo in feeding dairy or beef cattle. It is expensive to do with out one of these feed savers. Many a one does not know how much money (feed) he could save if he had a silo and filled with corn, peas or oats or other ensilage.

The combination of alfalfa hay and good corn silage is the best feed possible. Silage comes as near taking the place of growing grass or good pasture as any feed known.

More ensilage can be produced on an acre than most any feed. There is an advantage in storing the feed in a silo for it is such a convient way, it takes up little room, is safe from spoilage or fire and easy to handle.

Right now is the time to build a silo, prepare for the fall harvest and put your feed away in a silo.

CATTLE AND SHEEP FEEDING

Some of the most prosperous communities in the state are those where the feeding of cattle and sheep is part of the farm work.

The hay and grain is marketed at a good price, (often a high price), work the year around is given the farm hands and then the fertility of the soil is kept up.

The turning of feeds into beef and mutton is not a difficult problem but it does require careful purchasing of the livestock, and to see that they get the best of care and attention during the feeding period. Half way measures do not spell profits. Costly barns and equipment are not necessary, protection from the wet and cold should be provided.

Do not go into it too heavily at first, enough, however, to make it profitable, and then increase the number as you learn the business.

There is profit in feeding your farm products to cattle and sheep.

KEEP THE BROOD SOW

Don't kill the goose that laid the golden egg. In other words don't sell your brood sows. You may have one of unknown or poor quality as a brood sow, let her go, but one that has demonstrated that she can produce good pigs, do not let her go.

Sows that are good producers should be kept on the job as long as they are useful and under the present urgent conditions of raising more hogs, every sow should be kept, and made to produce a litter.

If some one had told you hogs would sell on the market for twenty cents a pound we would have questioned his guessing.

A careful study of prices prove that price of livestock and price of feed adjust themselves and will usually do so. Judging the future by the past, it will only be a short time until selling price of hogs will be on a basis of what the feed costs.

Keep your sows and make money.

STANDARDIZING DRY-FARM WHEAT

In the early stages of any business there is always lack of system; it takes time to develop thorough business methods. Judged by this standard the marketing of wheat in Utah is still in a primative state. Usually wheat is sold as just "wheat" without any difference in price for the various grades.

Anyone who knows anything about the world market of wheat knows that there are many grades and that the price varies with the quality. This is as it should be! Certainly no farmer would think of buying horses or cows at so much a head regardless of quality. If he did this he would need to make the price low enough so that he would not lose money even if all animals were of poor quality. This is exactly what the grain dealer has to do when he buys grain that has not been graded into regular standards.

The way for the farmer to get the most out of his grain is to sell it by grade, so that he can get the extra price if his grain is good; otherwise, he must be satisfied with the price of poor grain.

Recently the government established standards for all the grains. Farmers everywhere will do well to inform themselves regarding these standards and to insist that they be used as soon as possible.

MODERN IRRIGATION

Utah was the pioneer in irrigation work.

The wonderful benefits that came to us from this modern help caused other sections to experiment and develop ways and methods of irrigation. Utah has done much however, to keep in the lead. Two bulletins have just been published reviewing several years' study of the irrigation of sugar beets and potatoes.

The duty of water is a very important problem for every farmer. First of all there are no two farms exactly alike. Just how much water a certain crop needs and the proper time to irrigate it, is still a debatable question with many farmers. Often a crop is injured by the excessive use of water. Our water turn may or may not come when it is best to irrigate. One kind of soil may need much more water than another for certain crops. We might continue to name many more problems but we know enough about irrigation to appreciate its value in modern agriculture.

A careful study of these bulletins should be made. Our state experiment station gives the results as they were found and also the conditions under which the experiments were made. Each one should make a study of them and then adapt them to his conditions.

WORLD SHORTAGE OF CEREALS

(Continued from page 3)

It is striking how nearly self sustaining the German-Austrian combination is in practically all grains. The deficit in wheat is almost compensated for in the rye surplus while corn and oats are about even in production and consumption.

The following figures illustrate how near self supporting the countries at war are in normal times. The figures are expressed in terms of per capita production and consumption for the five year period 1910 to 1914.

NORMAL PRODUCTION AND CONSUMPTION OF CEREALS OF COUNTRIES AT WAR. BASED ON THE 5 YEAR AVERAGE 1910-14.

	Wheat Per Capita Pro.	Wheat Per Capita Con.	Rye Per Capita Pro.	Rye Per Capita Con.	Corn Per Capita Pro.	Corn Per Capita Con.	Barley Per Capita Pro.	Barley Per Capita Con.	Oats Per Capita Pro.	Oats Per Capita Con.	Population Est. for 1916-17 round numbers
	Bu.		Bu.		Bu.		Bu.		Bu.		Persons
United States	7.3	6.1	0.37	0.3	29.0	28.4	1.9	2.0	11.0	12.0	103 Millions
England	1.3	60	....	....	....	1.8	1.4	2.5	4.6	6.1	47 Millions
France	7.9	9.1	1.2	1.3	.5	1.0	1.2	1.4	8.8	9.6	40 Millions
Russia	4.9	4.0	5.5	5.3	.44	.4	2.8	2.0	6.0	6.0	185 Millions
Italy	5.2	6.7	.15	.22	2.8	3.2	.3	.3	1.2	1.3	36 Millions
Canada	29.2	15.0	.3	.3	2.3	3.8	6.0	5.2	48.0	46.0	8 Millions
German-Austria	3.3	4.0	5.2	4.6	2.2	2.6	2.6	3.8	7.3	7.3	120 Millions

Careful Farm Management Urged.

With these serious conditions confronting the Allied Nations every patriotic American citizen is anxiously trusting the American farmer to do all in his power to increase the available supply of these crops. Every Utah citizen is trusting and encouraging every Utah farmer to do his full share in eliminating waste of every sort in the producing, harvesting, and marketing of his crop. Careful Farm Management has been urged by the Utah Agricultural College since these crops were first thought of last spring. Now at harvest and marketing time the farmers and thrashing crews should exert every effort possible to conserve every kernel of wheat, oats, barley, rye, and corn that has been produced so that all produced may be available for consumption.

Make a Fit Seed Bed For Wheat

Improperly Prepared Soil May Result in Poor Stand and Loss of Entire Investment, Specialists Point Out.

"Make the seed bed fit for the seed. Do not 'intern' wheat worth $3 or $4 a bushel for seed purposes in a condition of soil impossible for germination."

That precaution is urged by the United States Department of Agriculture on all farmers who contemplate sowing the high-priced seed of a high-priced food this fall. To plant seed on poorly prepared land not only wastes the seed that does not germinate, the specialists point out, but it may mean the loss of an entire investment if a paying stand is not obtained.

A seed bed for wheat must be firm, moist, and well compacted beneath with a mellow, finely divided upper three inches of soil, the specialists advise. If wheat is grown in rotation with oats or after wheat, the stubble should be plowed to a depth of at least 7 inches immediately after harvesting the preceding crop of grain. The ground should be harrowed within a few hours after plowing and cultivation with harrow, disk, drag, or roller should be given as necessary thereafter until planting time. There operations are necessary to kill weeds, to settle and make firm the subsoil, and to maintain a soil mulch on the surface. The earlier the preparation of a seed bed for wheat is started the better the condition of the soil will be at planting time. Late plowing does not allow time for thorough preparation.

If a cultivated crop precedes wheat, frequent cultivation given to this crop will preserve moisture and maintain a soil mulch. If level cultivation has been practiced, a good seed bed easily can be prepared by disking and harrowing after removing the crop. However, if weeds are present, it may be advisable to plow shallow, the disk preceding and following the plow.

Early plowing followed by thorough tillage aid in catching the water which falls and in conserving this and the water already in the soil for use by the wheat plants. The firm seed bed under the mulch thus made enables the young plants to make use of the subsoil waters which rise when there is a perfect union between the plowed soil and the subsoil. Sufficient moisture is thus assured for the germination of the seed and for the early fall growth of the seedlings, a very important consideration. Plant food is also likely to be more abundant in the soil when such methods are employed.

If the importance of thorough tillage were more generally recognized and proper methods of seed-bed preparation were more widely employed throughout the so-called humid areas, there would be less frequent losses from drought and better wheat crops would result. In this area the mistake is often made of thinking there will always be moisture enough present for a maximum crop growth, with the result that short crops often are obtained where more attention to moisture conservation would have assured good yields.

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UTAH IDAHO WYOMING NEVADA

AN EXPERT

A western man who had been in politics applied for a job in a nursery. He knew all about setting out trees and spraying them, and a lot of other essential things.

"Do you know anything about grafting?" asked the boss.

"Well," replied the applicant, "I was county commissioner the year we let so many contracts for bridges!"

HOME

SUGGESTIONS FROM THE LEAFLET OF THE HOME ECONOMICS ASSOCIATIONS

Potatoes being scarce and dear, we remind the Association members that rice water may be used in place of potato water for making yeast.

Government Bulletin No. 853 will be of help in standardizing the making of jelly. It is known that the presence in the fruit of a substance called pectin (a vegetable gum) and acid are necessary if a good product is to be obtained. The bulletin gives the test for pectin. Add 16 tsp. of grain alcohol, 95 per cent, to an equal volume of cooled fruit juice and shake gently. If the fruit contains much pectin it will mass thickly together, in which case sugar and juice in equal amounts may be used. If the mass is subdivided, ¾ cup sugar to juice may be allowed. If the pectin is very thin, half a cup of sugar to a cup of juice is sufficient. Soft jelly is caused by the use of too much sugar or insufficient boiling after adding sugar. Tough jelly is caused by the use of too little sugar or boiling after the jellying point is reached. An excess of sugar will also cause crystals to form in the jelly. The above extracts show the value of a test for pectin. We also quote the recipe for making pectins:

"Apple pectin:—
1 lb. apple pulp (or skins and cores).
Juice of 1 lemon.
4 lbs. water.

Boil for ½ to ¾ hour, press the juice through a cloth bag, then allow this juice to drain without pressure through a heavy flannel or haircloth jelly bag. This juice when cold should be tested with alcohol to determine the proportion of sugar to add to a volume of juice. Pectin can be bottled, processed for 15 minutes in a water bath at boiling, and kept until needed for jelly making.

"Orange pectin.—Cut or scrape the yellow rind from the peel of the orange, the white portion remaining being passed through the food chopper and weighed. For each pound of this prepared peel add 2 lbs. of water and 4 tbsp. of lemon juice, mix thoroughly, and allow to stand 15 minutes. Then add 2 lbs. water, boil 10 minutes, let stand overnight. Next morning boil 10 minutes, allow to cool, press to remove juice, and then drain juice through a flannel bag. If not desired for immediate use, bottle and process as for apple pectin."

Home Made Grape Juice.

Press the juice from grapes and steam in a double kettle. Let it come to steaming heat but never allow it to boil. If desired it can be allowed to cool and settle or may be strained without settling. Use a flannel bag. Put in sterile jars, screw caps loosely, place in steamer or boiler and let cold water come up to neck of bottle, heat gradually until the water bubbles, remove bottles and seal tightly. The above will make a concentrated extract. If the juice is to be sweetened a good proportion is one pound of granulated sugar to each gallon of juice.

Vitamines.

As a knowledge of the foods containing the proper substances for promoting growth will be necessary if a diet that is both economical and nutritious is to be served, we quote from an article by Miss Jean Cox of the U. A. C. Home Economics Faculty.

"It has been shown that an other-[illegible] in it the necessary quantities of ash, protein, carbohydrates, and fat, have failed to promote growth on normal nutrition when vitamines have been absent or [illegible] Proof has been established that butter is more valuable as a food than lard, because of the vitamines contained in it. Other fats which contain it are cod liver oil, beef fat, and egg yolk, while it is absent in vegetable oils, corn, cottonseed and linseed. Thus it seems reasonable that when the diet is meagre or monotonous the better choice of fats would be those having vitamine content.

"Milk contains the necessary vitamines for the proper nourishment of young animals. Clean unheated milk is richer in vitamines than pastuerized, sterilized or boiled. The higher the temperature, the greater the loss of vitamines. When the casein in the milk was heated to a very high temperature all of the vitamines were destroyed and it was not growth producing. When it is necessary to give babies and small children milk that has been heated, some perfectly fresh fruit juice or raw egg yolk will help to supply the needed vitamines, thus with the bottle fed baby, a small addition of orange juice is made at the fifth month or earlier. The largest proportion of vitamines in milk is found when cows are fed green foods.

"Experiments have also shown that prolonged or high heating of most fruits and vegetables destroy some or most of the vitamines. Steamed vegetables and fruit retain more vitamines than those cooked at boiling temperature. Soda breads contain fewer vitamines than do those made from yeasts. Fruits that are strongly acid seem to retain their vitamine content when heated better than do the sweeter fruits. Dried vegetables also lose some of this antiscorbutic property.

"However, vegetables and fruits are as necessary a part of the diet as they are valuable for variety, food value, bulk and ash constituents. Whole wheat and unpolished rice contain more vitamines than highly milled flour and polished rice.

"In conclusion, on an average mixed diet containg milk and some uncooked foods the individual is not apt to suffer from imperfect nutrition. Let it be generally understood, however, that too highly milled, heated, refined and purified foods are not apt to contain the necessary vitamines. The Italian proverb, 'An Apple a Day Keeps the Doctor Away,' might be paraphrased into 'Some raw food each day keeps the doctor away.' Milk, fresh fruits, lettuce, or other uncooked vegetables should have a definite place in the family diet."

Salad Dressing.

2 tbsp flour.
2 tbsp. sugar.
1 tsp. mustard.
½ tsp. salt.
Mix to paste with water.
3 eggs, beat well.
1 teaspoon butter.
1 cup water.
1 cup vinegar.
(Add to paste till consistency of cream).

Bottled Beans.

Wash well. Cook for 5 min. in boiling water. Pack in jar tightly. Cover with boiling water in which they were cooked. Seal.

Pickled Beans.

Cook till tender. Drain. Hot vinegar to which has been added pepper and other preferred seasoning. Put beans in vinegar and let cook ten min. Place in jars and cover with hot vinegar. Seal.

Pickled Onions.

Peel small white onions, cover with brine, allowing 1½ cups salt to two quarts, boiling water. Let stand two days. Drain and cover with more brine. Let stand two more days, drain. Make more brine and heat to boiling point, put in onion and boil three min. Put in jars interspersing with bits of mace, white pepper corns or black cloves, bay leaf and red pepper. Fill jars with vinegar scalded with sugar 1 c. sugar to 1 gal. vinegar. Seal while hot.

Chili Sauce.

Pare twenty four tomatoes and chop with six green peppers, four large onions, add ½ c. sugar, 1 tb. salt, 1 t. each of white mustard, seed allspice and cloves, and 4 c. vinegar. Boil until thick.

Conserve.

5 lbs. grapes.
5 lbs. sugar
1 lb. raisins.
1 lb. shelled walnuts
3 juicy oranges.
Spiced currants.

Uncle Sam Says "PRESERVE"

The government urges you to "put up" all the fruits and vegetables you can. If you don't need them someone else does.

To be sure your fruits and jellies will keep, seal them with Parowax. It prevents fermentation and mould by keeping out all air.

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Parowax

Spiced Currants.

7 lbs. currants.
5 lbs. brown sugar.
3 tbsp. cinnamon.
3 tbsp. cloves.
1 pint vinegar.

Conserve of Berries.

5 lbs. sugar.
5 lbs. berries.
1 lb. nuts.
¼ lb. orange peal.

Baked Pears.

Ginger pears (culls may be used).
10 lbs. pears.
1 lb. crystallized ginger.
7 lbs. sugar.
6 lemons.

Watermelon Rind.

1 gal. rind.
2 heaping t. salt.
1 qt. cider vinegar to 2 pts sugar.
2 tb. cloves.
4 tb. cinnamon, put in bag.

Boil until tender enough to stick fork in—drain and dry with towel. Make syrup—let stand in syrup—put spices in syrup, boiling, let stand for a day or two and boil again.

Tomato Catsup.

Tomatoes, 1 gal.
Salt, 1 tbsp.
Black pepper, 1 tsp.
Cayenne, ½ tsp.
Ginger, 1 tsp.
Cinnamon, 1 tsp.
Allspice, 1 tsp.
Brown sugar, 1 pt.
Cider vinegar, 1 pt.
Small onions.

Cook tomatoes and then cook down together.

Sweet Pickled Peaches or Crab Apples.

8 lbs. of fruit.
4 lbs. of sugar.
1 qt. of cider vinegar.
2 oz. stick cinnamon.
2 oz. cloves.

Boil sugar and vinegar with cinnamon for 5 minutes, then put in fruit a few at a time, with one or two cloves in each. When done enough to prick easily with a fork take them out in jar and put in others to cook until they have all been cooked. Boil the syrup down to about one half the original quantity and pour it over the fruit. Seal while hot.

Green Tomato Relish.

1st.
½ pk. of green tomatoes.
1 medium sized head of cabbage.
5 large cucumbers.
3 large white onions.

Chop fine, run through food chopper and salt 24 hours. Then wash and drain.

2nd.
1½ qts. vinegar (cider).
1½ lbs. of brown sugar.
1½ tb. black pepper.
1½ t. tumeric.
1½ tb. white mustard seed.
1 tb. celery seed.
1 large or 2 small red peppers, chopped.

Heat second part, and pour over first. Cool and add ½ qt. vinegar and 1 tb. mustard if desired. Heat again and seal. This makes 5 qts.

Bottled Beets.

1 peck beets.
1 qt. vinegar.
1 qt. water.
1½ c. sugar.

Wash beets, be careful not to cut tops too close or they will bleed. Boil until tender. Remove skins, cut in two and put in boiling vinegar water and sugar. Let come to a boil. Fill bottles and seal. These can be used for beets with sour sauce and other ways of preparing beets for the table.

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APPLE SYRUP

A cheap and palatable syrup for the table or cooking use may be made

in the home with comparatively little trouble, from apple cider.

Directions for making this are given in the Year Book of the Department of Agriculture for 1914, page 230, the essentials of which follow:

Select fresh cider of good quality and to every 7 gallons of cider add 5 ounces of powdered calcium carbonate which can be obtained from any druggist at slight cost. After adding the carbonate stir the mixture well and heat to boiling in porcelain lined kettles not more than two-thirds full. Boil for about 5 minutes, then pour into two-quart jars, glass pitchers, or other glass containers. Set these in pans of hot water to allow slow cooling. As soon as sediment has settled out—this will take 24 hours or more—turn off clear liquid and again heat to boiling in porcelain lined kettles, this time but one-third full. Boil rapidly until liquid has reached about one-seventh of its original volume, and is of the consistency of thin syrup, then cool slowly as before. In a day or so, syrup should be perfectly clear and can then be bottled for future use.

HOW TO DRY PEACHES AND APRICOTS

H. K. Hammond Tells Utah Fruit Growers How to Treat Peaches and Apricots.

By H. K. Hammond.

Deciduous fruits of all kinds may be dried in the sun or, by means of artificial heat, in drying houses made for the purpose. Certain fruits, such as apples, pears, peaches, and apricots, become dark in color during the drying process and must be bleached in order to comply with the demands of the market. Bleaching is commonly done with sulphur fumes. Sulphuring does not improve the quality of the fruit, but does greatly improve its appearance. During the drying process fruit of all kinds is usually handled in shallow, wooden trays. These should be light but strong and of uniform size for convenience in handling.

On the whole, the climate of Utah is quite favorable to the drying of fruits in the sun. However, in cool weather, or when early rains occur, some method of drying artificially may have to be resorted to. In such cases a cheap home-made drier will answer. Construct a small house of light timber, or other material such as roofing paper, make it as nearly air-tight as possible and sufficiently large to hold about twelve trays so that one will slide in above the other with an inch or so of air space between. Allow sufficient space under the bottom tray to place a small stove costing about $2.50. A small piece of galvanized iron placed on top of the stove will cause the heat to radiate out. This house may also be used as a sulphur house. This drier is only recommended for small amounts of fruit; or to finish already partly dried, taken from the ground after being dampened by drains.

Sulphur Box Plan.

A very cheap, light, and quite satisfactory sulphur box may be made in the following manner: Make a framework of light wood, sufficiently large to enclose a stack of trays, and cover this with building paper, making it nearly air-tight. The box should be open at the bottom so it can be slipped over the trays when stacked and should be two or three inches larger than the trays in each direction. A piece of the frame may be extended near the bottom of each end to serve as handles. However, a more permanent structure built of wood and with a door in one end is to be advised because of its greater convenience and durability. A hole should be made in the ground beneath the stack of trays into which the sulphur is placed, either on the ground or in a plate or vessel of some kind. Light the sulphur by means of a match and some paper or shavings partially covered with sulphur.

The size of the drying trays it is advisable to use will depend upon the amount of help available and the amount of fruit to be handled. Trays for commercial drying are usually 3x6 feet, but any size will do for small quantities provided they are all alike. Pine shakes make a good and cheap bottom. These are 3 feet long, 6 inches wide and come in bundles of 25. The sides and ends are pieces 1x2 inches. These shakes are nailed to the sides and the latter are nailed to the ends with long cement covered nails The bottom of the tray is strengthened by nailing lengthwise three extra heavy laths made especially for this purpose. One lath is put on either edge and one across the center from end to end. The center lath is clinched to the shakes. In the absence of trays, for a small amount of fruit, use boards laid side by side, canvas or even paper, but these will not answer for covering or stacking the fruit in case of wet weather or for sulphuring.

A dry yard must be provided. Any dry, bare land will serve for this purpose, but care in the selection and preparation of the yard will be rewarded with a cleaner and better product. Choose a spot away from the road so as to avoid dust.

Apricot Drying.

For the best results apricots should be picked off the trees, although shaking them off and allowing them to drop on sheets is also practiced. They should be ripe, but not over-ripe, i. e., soft. They must be halved and pitted, care being taken to make clean cuts and avoid tearing the skin or flesh. The pieces are placed on trays, "cup" side up, and as close together as possible without tipping, then put into the sulphur house or covered with the sulphur box. Beneath the trays in a hole in the ground or in an iron dish, place 3 or 4 pounds of the best grade sulphur, per ton of green fruit, and then light. Make the box as air-tight as possible. The time required to sulphur apricots, to give them a light color, varies with the condition of the fruit. It usually takes from 2 to 3 hours but may take longer. The fruit should become a golden yellow and not turn brown.

Sulphuring also shortens the drying period and prevents rapid decomposition and infestation by insects. When the fruit is well sulphured the juices collect in the cup of the apricot and for this reason it is advisable to handle carefully on removing them from the sulphur house, in order not to spill the juice which would cause the fruit to stick to the trays.

Place the trays flat on the ground in the dry yard and allow the fruit to remain on the trays in the sun until dry. Apricots are dry when they are leathery to the touch, not hard and brittle. To overcome the possibility of the fruit becoming too dry in very hot weather, the trays with apricots may be stacked before they are entirely dry and allowed to finish in the stack. This improves the quality of the fruit. If the dried apricots have become too dirty, or look dirty, put them in a perforated can or wire basket and dip them for a very few seconds in boiling water. Allow them to dry a little on the surface and then put them away in close fitting boxes to prevent further evaporation. The water softens and improves them and there is no danger in putting them away in that condition provided the water was boiling when they were dipped.

Peach Drying.

When a peach is slightly soft to the touch over its whole surface it is ready for drying and should be picked from the tree and sulphured as soon as possible after being cut and pitted. The peaches are cut in half and laid on the trays "cup" side up. The sulphuring process is practically the same as that described for drying apricots. When sufficiently sulphured, the skin slips off easily and the juice collects in the cup. More care with peaches than with apricots must be taken in regard to spilling this juice while handling the trays. The handling of peaches during the drying process is the same as that of apricots. If one prefers a peeled peach, the skin can be removed after sulphuring or the peaches after cutting and pitting, but before sulphuring may be dipped in boiling lye (one pound of lye to ten gallons of water and then dipped in cold water. The skin will drop off easily. Place on trays and dry as described above. Before storing, dip in boiling water for a few seconds. This improves the texture and appearance. For final conditions of dryness, see discussion for apricots.

AN ACTIVE MAN

She—I like a man of few words and many actions.

He—You want my brother; he has St. Vitus' dance.

SOME SUGGESTIONS ON REMODELING CLOTHING

It is a needless extravagance to cast aside slightly worn apparel. There are many articles of clothing that it would be a waste of time to try to make over, but at the same time it is a needless extravagance to cast aside garments that are only slightly worn or that one has simply tried of.

The present style of skirts, with a tendency toward narrowing, makes the remodeling of last season's wide skirts an easy matter, and the resulting garment does not have the "patchy" look that was apparent when the narrow skirts were made over into wide ones.

Often just the changing of a girdle or a yoke with perhaps a slight modification of shape or material, will make a waist seem almost new. By simply replacing the small, rounding collar with one of the large ones so good now, a dress may be changed almost past recognition.

The wide use of plain and figured materials in one dress gives an almost unlimited scope in the making over of old clothing.

Skirts can be lengthened by letting down hems and adding false ones. Where these are put on with a plaited frill of a cord at the top, they really add a decorative touch to the garment. Skirts of wash material may be lengthened by setting in tucked bands with embroidery or lace insertion. Care must be exercised in this case to place the bands well in proportion to the length of the skirt.

Often old material may be dyed before being remade. It is easy to dye light colored materials a darker color or any material a shade darker. More than this the amateur should not attempt. Often old laces may be dyed to match the shade of a dress and thus treated, they add an air of elegance to the dress.—Beryl Dixon, Colorado A. C.

When you answer an advertisement always mention the Utah Farmer.

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Summer Excursions Bulletin

Via

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Salt Lake City, Utah.

The Irrigation of Sugar Beets

(Continued from page 3)

sulted in a "pinching" of the beet, which reduced the diameter and made it grow in odd shapes.

Roeding from experiments in Colorado in 1906 found that a higher yield per acre was produced from about 11.3 inches of water applied in two irrigations than from larger quantities in three or four irrigations. The irrigation of every row by means of lath boxes produced a yield 1.2 times as great as the irrigation of alternate rows by the same method, and nearly 1.5 times as great as the irrigation of every row by the open-furrow method. In 1908 about ten inches of water applied in two irrigations produced the highest percentages of purity and the yields were lower than where larger quantities were used in three or four applications. Keeping the soil continually wet reduced tonnage. The irrigation of every row resulted in a more economical use of water than the irrigation of alternate rows, while with either method the use of lath boxes saved considerable labor.

He showed sub-irrigation can be practised with good results on soils sufficiently impervious to permit strong lateral movement, but the loss was often so great by evaporation and seepage that this method was not, as a rule, so economical as surface irrigation. He concluded that too early irrigation tended to make a turnip-shaped beet and produced an unusually heavy growth of leaves without a corresponding development of root. If the water is withheld too long, the beet will begin to mature and so prevent its proper development later. As long as the leaves look fresh and healthy in the early morning, it is unnecessary to irrigate. Two to four applications of water should be sufficient on ordinary soils.

According to Townsend, winter irrigation of beet land is highly beneficial where the precipitation at this season is light. If the seed-bed is dry it is much better to irrigate before seeding than to irrigate the crop up, especially in fields likely to crust after an irrigation. The beets should be carried as long as possible after they are up before watering so the plants will be forced to form long roots and, therefore, yield a high tonnage. The action and color of the plants are the best means of judging the time to irrigate and quantity of water to apply. Furrow irrigation is much better than flooding, especially for small beets since excluding the air from the beet roots for a few hours by flood irrigation causes the plants to suffer, particularly if a permanent crust of silt is formed.

At the Sub-station in Nebraska, Knorr found the best results when beets were irrigated at such times as to keep the plants in good growing condition from the time of thinning until about three weeks before harvest. The irrigations should be in moderate amounts and the soil never so dry that the plants suffer for lack of moisture. It is desirable to cultivate the beets in order to break the crust made by irrigating as soon as the soil becomes dry enough. He also found that for sugar beets receiving three irrigations during the growing season, a yield of 1.6 tons to the acre more was realized from land that had been fall irrigated than from that which was only watered during the growing season.

Previous Work at the Utah Station

Ever since the establishment of the Utah station over twenty-five years ago, irrigation studies have been given considerable attention, but the first important work on the irrigation of beets was done by Widtsoe and his associates. According to Bulletin 80, published in 1902, sugar beets had a greater percentage of moisture in the soil when they were first irrigated (about the middle of June than any of the other common crops grown. The relative proportions of the constituents of the plant were not found to be affected to any noticeable extent by irrigation although there was a tendency for the plants receiving most water to contain the higher percentages of sucrose and a higher purity. On a gravelly loam land receiving 20 to 27 inches of water the beet yield was greater than with more or less, and the lower quantity was best. The highest yield of dry matter to the acre, and for each pound of water applied, was from the plat receiving 20.17 inches of water in five equal irrigations, the smallest being with 17.78 inches in eight irrigations. Better yields were obtained by making the larger applications early in the season than during the later period. A trial of one year showed flooding to be better than furrow irrigation. Between twenty and twenty-five inches of water yielded beets with highest sugar content.

Bulletin 115 indicates that for the early season, beets exhaust the soil moisture less thoroughly and rapidly than the cereals and alfalfa, but more than potatoes. Beets needed their first irrigation when the soil contained more moisture than with the other crops. The water was used faster during August than during July or September. At the time of harvest, beets had exhausted the soil more thoroughly of water than oats, corn, or potatoes.

Field experiments reported in Bulletin 116 indicate a general increase in dry matter with increased applications of water up to 50 inches. The yield of dry matter for each inch of water decreased as the total water during the season increased. In pounds of water for a pound of dry matter there was an increase from 569 for 15.25 inches of water to 1,186 for 60.25 inches. Nearly three times as large a yield of dry matter would be produced when 30 inches were spread over four acres as when it was applied to one acre.

Bulletin 117 shows sugar beets to gain nearly five tons to the acre when the amount of water was increased from five to ten inches, but when more than ten inches were given there was little increase in tonnage. An acre of land with 30 inches of water applied produced 20.82 tons, and when spread over six acres the same quantity of water gave a total yield of 82.68 tons.

Results given in Bulletin 118 definitely indicated that part of the yield of sugar beets was due to the water applied prior to the irrigation season, although such irrigations were not nearly so valuable as those added later. The percentage of well-shaped beets was higher when the water was applied at the usual times. Water added about a month after planting had distinctive value in determining a high yield. It was very important that the applications be regulated to keep the soil uniformly moist during July and August. September irrigations had little value, less than two inches during this month being ample where the amount had been sufficient the two previous months.

With ordinary quantities of water to be applied, almost without exception, the greater the number of irrigations, using the same quantity of water, the larger the yields. It is believed that with fifteen inches of water, four irrigations are sufficient and three would be nearly as good. Applying five inches every other week during the irrigation season appeared to be the best practice. Although it is seldom wise to have more than two-week intervals between irrigations, the frequency of applications may be decreased as the total water applied throughout the season is increased.

Bulletin 119 shows a tendency, from the earliest to the latest date of harvesting, for a decrease in the proportion of leaves as the quantity of irrigation water increased. Although the water in the whole plant and the leaves decreased as the water applied decreased, the moisture in the roots remained practically constant for each period irrespective of the quantity of water used.

Bulletin 120 brings out the facts that although there was only a slight increase in the percentage sucrose with the water applied up to 35 inches, the percentage of carbohydrates increased quite steadily with increased quantities of water used. The application of 50 inches in every case decreased the sucrose content. The percentage purity was lowest with the smallest quantities of water and highest with intermediate applications up to 20 inches. The per cent sucrose and purity were higher in October than in September.

Description of the Experiment

The experimental work reported in the bulletin was conducted on the Greenville Experiment Farm two miles north of Logan, Utah. The soil, which is a well-drained uniform clay loam to great depth, has been described in detail in Utah Station Bulletin No. 115. The land was manured every year and was plowed in the fall except one year when fall storms made it necessary to wait till spring. The land was planted alternately to beets and potatoes. The soil will hold about 22 per cent of moisture as a maximum under field conditions. The plats were 30 by 58.08 feet, which gives one-twenty-fifth of an acre each exclusive of a seven-foot space between the plats.

The water was measured by means of a Cippoletti weir and taken to the land in wooden flumes, where it was added to the beets by the flooding method. All the water was retained on the plats by banks around the edges. To a number of plats water was added each week during the growing season, but the time of applying water to most of the plats depended on the stage of development of the plants.

The sugar beet plant was divided into four stages as follows: First, just before thinning time; second, four weeks after thinning; third, when the beets averaged two inches in diameter; and, fourth, when the beets were nearly—but not quite—ripe.

A five-inch irrigation was used as a standard at these stages. An application of this amount was given at each stage, at each two stages, at each three stages, and at all the four stages, thus giving quite a number of different combinations. It is possible, therefore, from the results obtained to determine which stages are best when either one, two, or three irrigations are used.

In the weekly irrigations one plat received one inch, another 2½ inches, another 5 inches, and another 7½ inches of water each week during the regular irrigation season.

The experiment was begun in 1912 and carried through 1913, 1914, 1915, and 1916, giving five years' results. Conditions during these years were made as uniform as possible in every respect. The record of precipitation during the first four years is given in Utah Station Bulletin No. 146. It averaged nearly 18 inches a year.

Yield of Beets.

Certainly the most important consideration in connection with irrigation, from the farmer's point of

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view, is its effect on the yield of the crop. Where beets are sold on a sliding scale the farmer is also interested in the per cent sugar contained; the sugar fatcory is always much interested in this item.

The yield of both roots and tops is reported, the quantity of tops being of very much less interest than that of the roots; yet the tops do have a decided value as a fertilizer when plowed under and as feed for stock. The yield of tops is expressed as tons of wilted tops to the acre.

In reporting these experiments, the results are separated into two divisions: (1) those from the plats receiving regular weekly irrigations, and (2) those from plats receiving water only at certain periods in the growth of the plants.

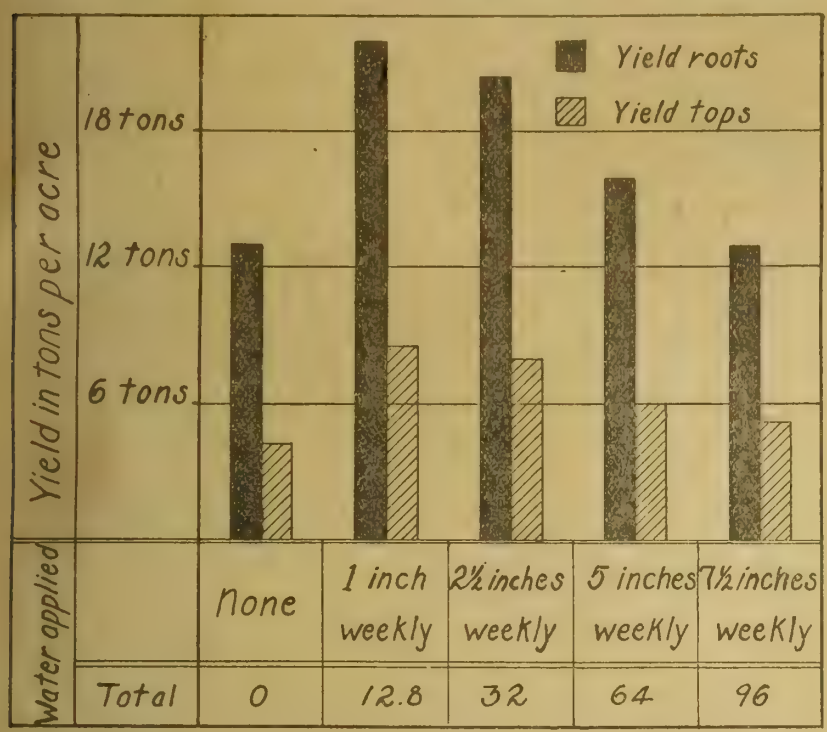

Fig. 5.—Yield of beet roots and tops on plats receiving different quantities of irrigation water weekly. Average for five years.

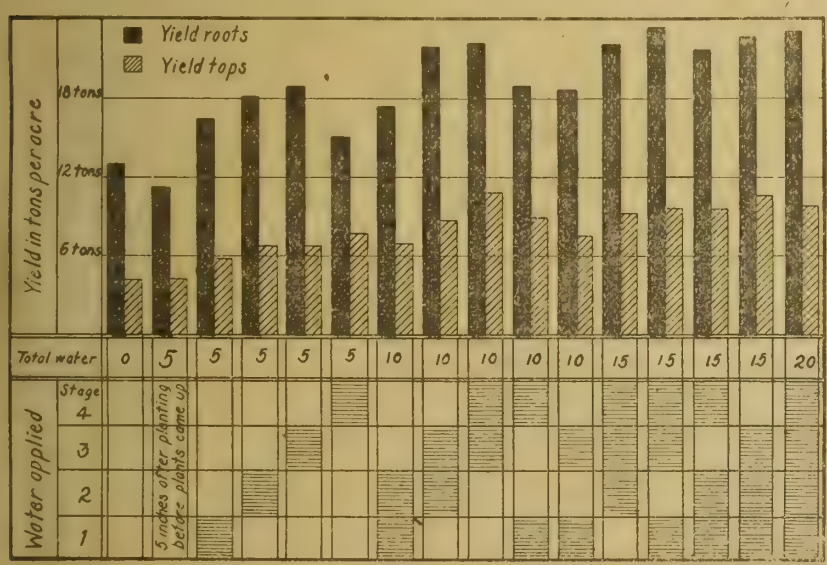

Fig. 6.—Yield of beet roots and tops on plats receiving various quantities of irrigation water at different stages. Average for five years.

Figure 5 shows the five-year average yield of beets and tops on plats receiving no water, 1 inch weekly, 2½ inches weekly, 5 inches weekly, and 7½ inches weekly. It will be noted that the highest yield was obtained with one inch weekly, or an average total of 12.8 inches for the entire year. That receiving 2½ inches weekly, or 32 inches during the year, gave only slightly less yield; but where 5 and 7½ inches of water were applied weekly the yield was decidedly reduced. With the larger amount the yield was almost exactly the same as it was where no irrigation water was applied. The yield of tops bore about the same general relatonship as the roots, except that with high water proportionately more tops to roots were produced than where no water was applied.

Figure 6 shows the average yield of roots and tops on plats receiving five-inch irrigations at various stages in the growth of beets. The lowest yield was obtained where the land was irrigated after the seed was planted and before it came up. The yield with this treatment was decidedly less than it was where no water was given.

Comparing the various periods where but one five-inch irrigation was given, it will be seen that the third period, when the beets averaged two inches in diameter, was the most favorable; the last period, when the beets were nearly ripe, was the least favorable. The second period was decidedly more favorable than the first. It will be further noted that the yield of tops was greatest with the very late irrigation. This means that the farmer by looking at his beet field will likely be deceived into thinking that the very late irrigation is increasing his yield much more than it really is.

Upon examining the plats receiving two, three, and four irrigations, the value of irrigation water during the third stage is very evident. The highest yield was received where a total of 15 inches were applied. It will be remembered that in the weekly irrigations a higher yield was obtained for 12.8 inches than for 32 inches.

It seems, therefore, that the total requirements of sugar beets for irrigation water are not large, but the period of application is important.

Size and Shape of Beets

The average weight of beets under the different treatments show that the size of beets follows closely the relationships that have already been pointed out for yield. This was to be expected since the stand on all plats was practically the same in the spring and yield was largely, but not entirely, an expression of size. The size of beets irrigated only at the fourth stage was proportionately less than the yield would indicate.

The length of beets shows that where 7½ inches of water were given each week the length of beets averaged very slightly less than those receiving no water. The longest beets on the weekly irrigations were produced by one inch of water each week, but the differences due to the treatments were very slight.

Five inches of water applied at any period made the beets longer than those that were not irrigated. The longest beets were those irrigated at the first three stages. The very late irrigation had but little effect in lengthening the beets.

There is a popular idea among farmers that the first irrigation should be delayed just as long as possible in order to induce the beets to go deeply into the soil. In order to increase length, some even allow their beets to be positively injured by drought before applying water. The results reported here which represent many thousands of careful measurements during five years, show that the old idea is largely a fallacy.

In the ordinary good beet soil that is well drained an irrigation does not decrease the depth of penetration of beets; it rather assists them to go deeper. Of course this does not contradict the well-known fact that beets are likely to be shorter on a soil that is absolutely water-logged. This condition to a slight extent has already been pointed out where a total of 96 inches of water were applied.

In view of these experiments, it seems folly to let beets suffer for want of water and be permanently injured in order to get them to root deeply.

The percentage of forked beets is shown, to bear very little consistent relationship to the amount of water or the time of its application. In the weekly irrigation tests the beets that were not irrigated had the largest number of forked roots, while in the plats that had water applied at different periods the plat receiving water at the first stage only had the least number of forked roots. The greatest number was on plats irrigated early and late. The differences, therefore, are not consistent and the idea that any method of irrigation greatly increases the tendency toward forkedness seems unwarranted.

Summary.

1. In the bulletin results of five years' experiments on the irrigation of sugar beets are reported.

2. When the beets were watered each week during the growing season, one inch of water weekly gave a higher yield than did more than this quantity.

3. When but one irrigation was given it was most effective when applied at the time the beets averaged about two inches in diameter.

4. Irrigating the land after the seed was planted and before the plants were up reduced the yield below that where no irrigation water was applied.

5. The least desirable time to apply water after the plants had begun to grow was just before the beets were ripe.

6. When the water was applied at the proper time, two or three irrigations of five inches each gave practically as good results as where more water was used.

7. Proportionately more tops were produced by the high and the later irrigations than by the opposite conditions.

8. The percentage sugar and the purity were higher in the irrigated than in the non-irrigated beets, except where the irrigation water was added very late.

9. The highest percentage of sugar resulted from irrigation water applied when the beets were about two inches in diameter.

10. Contrary to popular opinion, the length of beets was not increased by delaying the time of applying the first irrigation.

11. The percentage of forked beets bore no consistent relationship to the amount of irrigation water applied.

12. Irrigation water affected the average size of beets in practically the same manner that it affected the total yield.

13. Sugar beets do not require large quantities of irrigation water if it is properly applied, but they are sensitive as to the time it is given.

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The Federal Land Bank Controversy

(By Dr. George Thomas)

I believe I owe it to my friends of Utah to give a statement of my conduct in relation to the controversy which has resulted in the removal of President Burrel G. White and the acceptances of the resignations of Directors Douglas, Mead and Thomas.

I do not deny the regrets that I have in the unfortunate ending of what appeared to be such a great opportunity, but I do feel that while Messrs. Douglas, Mead and myself have sacrificed ourselves that we have accomplished much in the removal of an incompetent president from the head of this institution. So I accept by retirement cheerfully.

The controversy itself is so broad in its scope that it would be impossible to print it in one article and enter into all its phases. The transcript of the hearing that was had at Berkeley covers four hundred fifty typewritten pages. The contentions arranged themselves under two main heads. First: As to the control of the bank. Second: As to service, efficiency and economy of this bank. When the directors of this bank were appointed, they naturally assumed that the management of the bank rested in the control of the five directors of whom the president was one and the chief executive officer. The board at Washington had designated the officers and inasmuch as we did not know each other we accepted their suggestions and elected the men designated.

There was a great mass of business on hand and for many days we were very busy, each doing what he could to straighten out the chatotic affairs of a new institution. The policies of the new institution were to be formed and the supposition was that these policies would be taken up by the board in meetings and worked out. This idea was not to be followed, for the president would not have it.

Very early a trival matter arose over which there was a discussion and a divergence of views expressed. It was of no great importance and no one cared very much which way it went, but President White took the occasion to inform the board that the Federal Farm Loan board at Washington expected him to outline the policies and control the bank, and that if any of the directors were unsatisfactory to him they should be removed. The members of the bank did not take such an attempt seriously but assumed that perhaps the board at Washington had told the president that they expected him to lead.

As things later developed, it would appear that this was the first mistake that the directors made. They should have forced the issue and reached a conclusion, retiring at that time if necessary. The directors did not know each other and felt sure that the Federal Farm Loan board must have known very well the men they had selected as president so they were perfectly willing to permit the president to organize this bank if he could.

It soon developed, however, that the man who was in charge of the Berkeley bank was entirely devoid of the business experience of agricultural knowledge, and that he could not organize an institution that extended beyond the limits of his own office. The members of the board, therefore, did not feel that they could grant him that acknowledged leadership which he claimed.

In the very early day of the organization the board received from Washington a set of by-laws which presumably had been drawn at the instigation of the twelve presidents when in Washington, giving them extensive power. In fact, these by-laws were so broad that once they were passed it reduced the board to almost nonentity, but the Federal Farm Loan board requested that they be passed and it was done. The result was, by the middle of May Senator Douglas and Dr. Mead had been practically eliminated as active forces in the bank, Mr. S. A. Reed, secretary, at the request of the president had been removed, so that the president and the treasurer were the only officials at the bank with the president exercising full control.

When the directors objected to his policies he went over their heads to the board at Washington. If he obtained the necessary approval, he ignored the directors entirely, and if he did not obtain it, the question was dropped.

You may ask why the directors of the bank did not swing in and change the by-laws and take charge. My answer is that this board in its temporary organization is unlike any board I ever served on. We are extremely closely supervised by the Washington board and cannot do anything of any importance without its approval and consent.

By the first of June my work began to disappear from me, and from the 15th of June until the 18th of July, I had practically nothing to do except sit at my desk eight or nine hours a day and draw my salary. I had differed with the president on various questions, but I thought our differences had always been most cordial. I knew that my suggestions had been ignored by the president, but I did not feel at that time that I was justified in making a break.

I found later that I had committed a very serious offense in making Dr. Elwood Mead my close personal friend. I called on him several times and he had called on me, and while the majority of our conversations did not pertain to the bank or the bank's affairs, the suspicions of the president had become aroused. He said later that we had entered into a conspiracy to remove him.

For several days I worked as hard as I could to get Dr. Mead, Mr. Douglas, Mr. White and myself together to see if we could not reach an adjustment, but each meeting seemed only to intensify the situation. No relief could be secured for the simple fact that the president politely informed us that he was not subject to the views of the board in any sense. He had secured the removal, as already stated, of Mr. Reed and was now working to secure the removal of Director Douglas. In fact he stated he was confident that he would have Mr. Douglas removed.

Shortly after the middle of June a letter was sent by Dr. Mead to Washington detailing the situation and telling the board that it would be impossible for Douglas, Thomas and himself to continue any longer in service unless something was done. July 2nd the monthly board meeting was called, but though there had been ample time for an answer from Washington, no reply was forthcoming and in fact no reply ever did come. Before the first of July it had become clear that the situation could not continue, so Directors Mead, Douglas and Thomas held some meetings in an attempt to work out a peaceful solution, but none could be found that worked. The idea back of it all was to find a plan upon which we could harmonize, but the president would not accept anything that did not leave him in absolute control. Mr. White counted upon his personal relationship with some members of the Washington board to win. On July 2nd we three wired our resignations to Washington and as far as Dr. Mead and Mr. Douglas were concerned that ended their actual relationship with the bank. We fully expected that they would be accepted at once.

First the board at Washington tried to persuade us to patch up our differences and go on. We consented, provided the Federal Farm Loan board at Washington would assure us that the board was in control of this institution. Then they threatened us that if we would not go on that something would happen, and we advised them that we stood on our original proposition, that if the board were in control we would go on. They refused to make a statement. At their request I consented to continue to go on as a director until an adjustment could be made. If it had not done that, the business of the bank would have been tied up. This was a serious mistake on my part.

An investigation was begun on July 19th with the result that on the charges preferred, Mr. White was removed and, in keeping with their earlier statement as what would follow, our resignations were accepted.

Now, in regard to the management of the bank along the lines of service, efficiency and economy. The service which this bank is supposed to render covers a vast amount of territory. Local associations have to be organized in the various parts of several states, appraisers appointed, lands valued and money loaned. The executive committee of the board has to pass upon the loans, after they have been appraised. The law placed the appointing of the appraisers in the hands of the board at Washington, but, owing to the great distance of our district from Washington, the recommendation of appraisers was supposedly left to the board of directors, but the president refused to allow the board of directors to pass upon these appraisers and made his own recommendations to the board at Washington.

In the case of Utah, I was almost completely ignored, and a special representative was sent to Utah to look over the situation. We had as appraiser Mr. White's friend and his friend's friends, many of whom were utterly incompetent of the work in hand.

In Nevada, Senator Douglas was ignored and men from California were sent in to appraise the land. At least some of the men who were sent there to appraise the lands did not know anything about irrigated lands.

The majority of the board and I, as a member of the executive committee, objected to approving loans on lands we had never seen and appraised by men we did not know and whose recommendation consisted principally in being a friend of somebody else. In fact some of these men were so disgustingly incompetent that after making their report the land had to be re-appraised and President White, who had secured their appointment, could no longer uphold them.

We objected to the president creating in this bank a department of appraisals, a department of bonds, a legal department and a title department, without the consent of the board, and appointing thereto men carrying large salaries without even taking into the confidence of the board that such men had been employed or advising with them as to the salaries to be paid.

We further objected to the placing on the payroll of this institution several people with high salaries who were not doing anything. We had in the neighborhood of five men drawing of from $150 to $200 a month who are working about one hour a day and in some cases have been doing nothing at all for two weeks at a stretch.

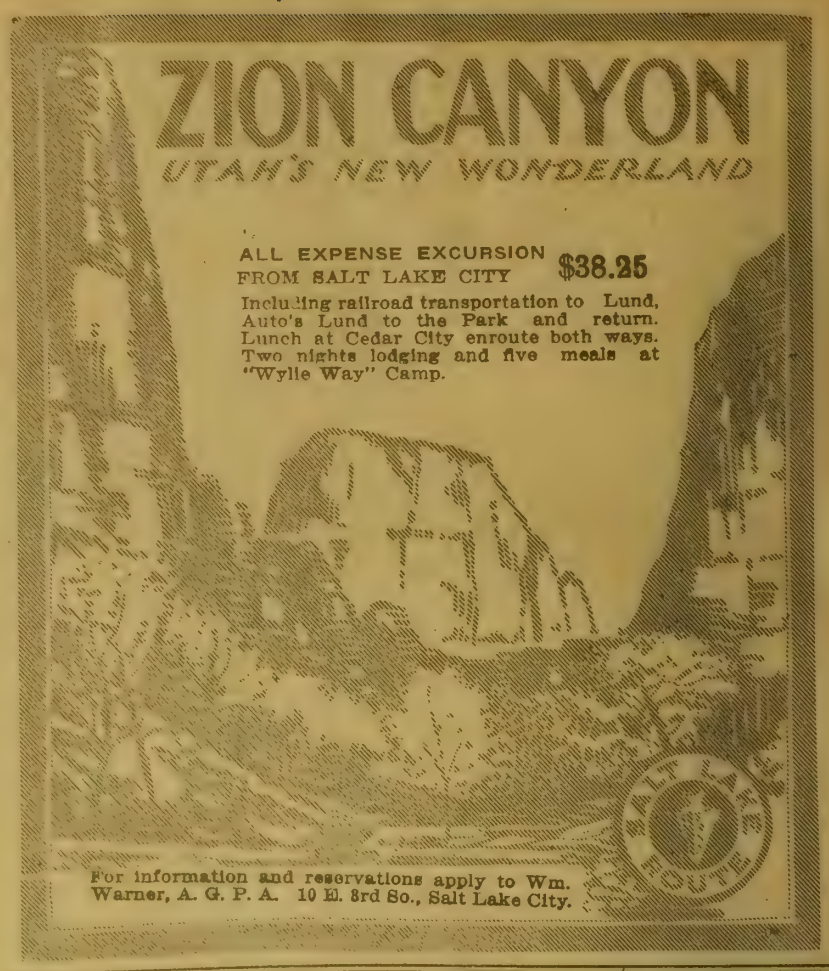
We objected to the payment of the salary of a man to be a messenger of the president to the city of San Francisco. Something that was entirely unnecessary. We objected to the employment of four or five stenographers in the bank whose services were not needed. But our objections were entirely overridden.

The result has been that we have only loaned up to date $327,300, and the expense up to date, not including the August salaries, have amounted to $31,895.71, and our salary schedule now is approximately $7,500 a month. Money loaned during the last thirty days has not reached the salary schedule. In the meantime, nearly half a million dollars has laid in the San Francisco banks while the farmers have needed it.

When we asked that the legal department be speeded up so that the farmers could get these funds, we were politely told that it was the president's business and that he would attend to it in his own good time. The title examinations from Utah, California and Nevada were turned over to President White's law partners instead of being given to competent attorneys in the localities where the money was loaned, with the result that some costly errors have been made and others narrowly averted.

Our private and official mails have been opened until, in order to protect my own private business, I had to take the matter up with the postmaster in Berkeley and serve notice on him and on President White that if my private mail was opened in the future, that I would be obliged to take legal steps to enforce the law, and, only after I had done that, was there any security that letters addressed to me and placed with the mail of the Federal Land Bank of Berkeley were not opened. In fact, a letter received from Congressman Welling on July 28th was opened in the president's office, and, when I informed his clerk of the matter, I was politely told that I could pursue what course I pleased, which I did, and the postal authorities have protected by mail since.

These, my friends of Utah, are the reasons why I could no longer remain with [illegible] as a director of this institution. [illegible] to the many farm[illegible] Utah [illegible] it is to be hoped that [illegible] will be able to [illegible] their needs. But for most of them it [illegible] before they will [illegible] and the only [illegible] to do is to protect their business is to adjust their affairs as far as possible so that they can enjoy the benefits of the loans when they come, but they must not place themselves in a position where they will lose their property if they don't get action from this bank for many months or years.



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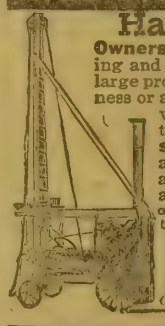

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THE VALUE OF A PURE-BRED BULL

(Continued from page 1)

but I am afraid they will be disappointed in the result of their young stock.

A bull can transmit only that which he inherits, if he does not have in him the desirable qualities either of a dairy or beef type he cannot transmit them.

One must decide on what he is going to do and then stick. You will have the ideas and opinions of your neighbors to contend with and in most cases they will all be different.

First decide upon the kind of livestock you are going to produce, either dairy or beef. Once you select the breed do not make any changes only for better animals in that breed you are producing. If you choose the dairy cow, then by means of the scales and Bobcock test keep the best calves from the best cows.

These calves from the purebred sire should have careful attention and good feed. Then you can in time replace the older animals with the younger stock and intime when conditions will permit buy some purebred calves or cows. This is not hard to do, but you must make up your mind to "stick" for a few years if you want to get the best results.

These results can only come with the use of a purebred bull. Avoid a scrub. If you cannot buy a good purebred sire join with your neighbor and if conditions are favorable a bull association may be formed.

The increased cost of hay, scarcity of labor and many other new conditions on the farm, are reasons besides the above why only a purebred sire should be used.

GETTING A LIVING OFF THE FARM

Farming is not a business of large profits. It never has been and there is nothing to indicate that it ever will be. Of course many farmers have become rich in a comparatively short time during the last score of years, but in most instances this has been brought about through the increase in the value of the land they operated and not through the sale of farm products.

While the above statements apply to at least a good majority of farmers, there are notable exceptions. Many farmers have laid aside considerable sums of money annually, but in nearly all such cases the farms were purchased at comparatively low prices, so little had to be set aside for interest on the original investment. Others have been helped by large families of children who have not been paid wages, so the cash income has been large and the cash outgo comparatively small. The fact is that many a farmer who has paid for his farm during the past ten years has, strictly speaking, not made his farm pay in the ordinary commercial sense. He and all his family have worked hard, enforced rigid economy, and even though he has accumulated some money his total saivngs would not pay wages to himself and all the members of his faimly, including the women folks, who in most instances contribute very largely to the success of the farm.

In many instances where an exceptionally good record has been made in money-making on the farm one can trace the success to low cost of living, brought about by producing practically everything needed for the table, and this is the point we wish to emphasize. The great majority of farmers who have a hard time to make ends meet depend too much upon the grocery store and the meat market for their living. As our land increases in commercial value, and food products rise in price, the idea of the farmer reducing his store bills to a minimum becomes increasingly important.

An acre of garden properly cared for will produce a great deal more of human food than an acre of corn can possibly buy. The time is at hand when the farmer should pay more attention to the production of vegetables of all kinds, berries, small fruits, and orchard fruits. Similarly beef, pork, and mutton should all be gotten direct from the farm. Pork and mutton can easily be had, and with a little neighborhood co-operation fresh beef can be provided on the farm the year round without ever patronizing a butcher shop. On beef over one-third, sometimes one-half, can be saved by producing it at home as compared with buying it at a butcher shop. While milk and butter are ordinarily produced on the farm, cheese is very seldom made. An abundant supply of cheese could profitably be made on practically every farm and with comparatively little labor.

The great benefit that comes from producing everything needed for the table becomes more apparent in a poor than a good year. There are years when, through no fault of the farmer, the more important crops are practically a failure and when in such a year he has a run immense bills at the stores to keep his table supplied with food his loss in a single bad year is frequently equal to the net profits obtained in from two to three good years. We realize that the average farmer does not take much stock in these things, at least he hasn't done so in the past, but he who has a farm to pay for that has cost from $125 to $200 per acre will be obliged to do some things that his predecessors were not compelled to do in order to make ends meet.

NAME YOUR FARM.

Two or three years ago we suggested to our readers that they name their farms, giving it a name that was distinctive, something it would carry after they were dead and gone. We called the attention of our readers to the fact that the state law gave them the privilege of selecting a name, and if they recorded it, no one else in their county could use the same name. The law gives it, so to speak, a protection, as cattle on the western plains have in theirbrands. Some have adopted our suggestion. Some have not, and when they are dead their farms will no longer be called by their names or names they have chosen. When the neighbors wish to talk about it, they will use the name of the tenant or the then owner, if he lives on it.

Some one may ask: Why name the farm? If you don't expect to keep it for a home, it is not worth while. If you are not proud of it and the things you do there, it is not worth while. Why should you name your farm, if you hold it for speculation, or if you expect to move to town or anywhere else? It isn't worth your while. Neither is it worth your while, if you are growing grain exclusively and selling it off the farm; for you are simply selling your farm piecemeal, and by and by it will be nothng to be proud of, if not in your time, then in the time of your children.

In the Old Country every farm has a name, because the farming population over there is stable; and very frequently the farmer becomes known by the name of his farm, for example, Burnbrae, Drumsheugh. When our farming population settles down and we get to really farming, people will be glad to select names for their farms, and will be glad to map out definite lines of farming which will make the name itself valuable. We can see the beginning of it in the names given to their farms by breeders of improved cattle. If first-class cattle have been grown for a generation or so on any one farm, the name of the farm will be much more potent than the name of the farmer himself; and so with every specialty of farming. This naming of farms comes in with settled farming conditons. If the farm is not a home, if it is merely an investment in which we have no interest except financially and are holding it for speculation, or if we have no pride in it, it is not worth while to name it. The dairyman gives his cows distinctive names, and his horses in which he takes pride, but he does not give names to his feeding cattle. Their stay on the farm is only temporary. A good farm, which has become part of your life, is worth a name; otherwise not.

MAKING GOOD.

There is much in the common everyday expression "making good." It gives the idea that whatever success one considers of sufficient importance to meet the requirements of making good must depend upon his own efforts and was not just by chance. Expression implies that we must make a way ourselves and not trust our fortunes to nature or some one of our neighbors.

We are beginning or soon will begin the serious business of preparing for crops next year. Some have already begun, others are now beginning. Will we "make good" on the farm next year? Will we manage the farm in such satisfactory manner that we can at the end of the year say, "I have made good' this year?"

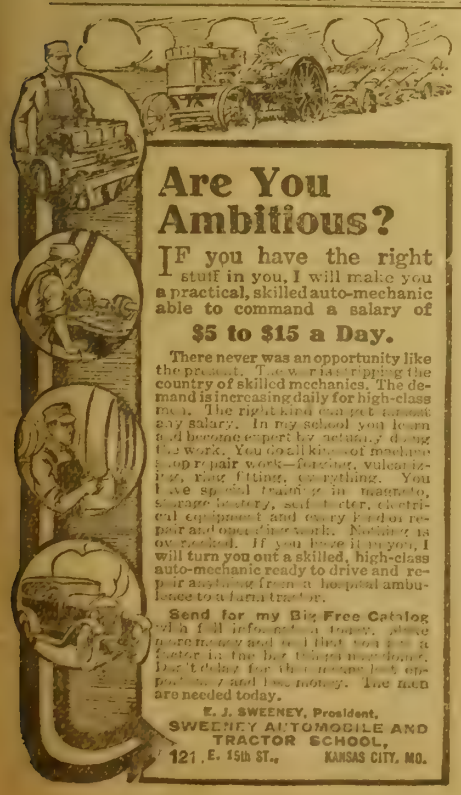
Not all of us would agree upon what is meant by making good. It means one thing for one person and quite a different thing for another. But perhaps all would agree that to make good each of us must be successful enough in what we undertake to meet our own approval, at least, under the existing circumstances. In other words, we must be in a measure satisfied with our achievements to make good.

But success in farming means more than in generally meant in other business. Not only must large crops and adequate profits be made one year, but the land must be left capable of producing equal or larger crops the following year, and the other years that swiftly follow. Enough feed and food crops must be produced to run the farm while another crop is being produced. The buildings must be kept in the proper repair, the implements must be replenished, suitable power and machines bought and the home kept in order. Livestock must be raised to consume the surplus feed, to provide work teams and to supplement the revenue.

But these are not all. Every farmer is a part of the community. He owes his neighbors, his county and state something. In addition to making good in producing a competence on the farm we should take an interest in rural society. The schools, churches, roads and moral tone of the community will demand some consideration at our hands. To make good as a highly respected and progressive citizen, we must devote some thought to helping our neighbors build up the community. Unless we do this it will be hard to approve our own efforts at the end of the year when the harvest is finished. Making good as a farmer means making good as a a neighbor and citizen.

Mrs. Barton (to small daughter saying prayers)—A little louder, dear. I can't hear.

Daughter—Yes, but I'm not speaking to you.



Using Good Judgment On The Farm

R. B. Rushing.

Some years ago a young fellow came to me and said: "I wish you would tell me what is the matter with me. I can't make things go right somehow. I am in debt and not getting ahead at all. If I had my farm paid for I wouldn't care. I could make a living, I guess. Here I've been whacking away six years and am just where I started. I can't hit it just right in my farming operations. I don't buy right nor sell right. In fact, I'm no good, I reckon."

After cheering him up a little I told him I would run out to his place and see if I could give him any hints that would help him any. I did go out about a week afterwards and we had a long talk about things. One thing I quickly noted was that he had too many chores to attend to, and they were taking up too much of his time because things were not handily placed. For one thing he had to carry three baskets of corn night and morning to his hog pen, 60 yards from the crib. Then he carried water to them from the well about the same distance, six basketfuls three times a day, and many other chores were equally difficult.

I suggested a number of changes not hard to make that would enable him to do this feeding and watering in less than a third of the time. He was quick to see the advantage to be gained by the changes I suggested, but he said that he could not think of them himself. I made several visits to his place and we made several changes in things—little things that made a vast difference in the number of chores to be done and the time and labor expended in doing them.

As his farm is all good tillable land I pointed out how he could put in the different crops he grew each in a body by itself on strips running the entire width of the farm. This made plowing, planting and cultivating much easier and the regular rotation much handier, while it also gave the farm a much better appearance. He adopted these ideas at once and made the changes with a good deal of enthusiasm.

In the matter of selling his products he had failed because he could not decide when to let go. He gave me a bunch of postal cards and asked me to just write "sell" when the market indicated that it was a good time to sell; he was to keep me infomed as to what he had on hand. He, like many another farmer, had not made it a point to sell a hog or other animal just when it was ready, but to keep it with the lot until all were ready. I showed him how some pigs would be ready for market a month to six weeks ahead of the rest of the same litter, and that it was a waste of feed to hold them if the price was fairly good. My motto always was to sell as soon as ready for market, whether it was an animal or a fowl. While an animal or fowl is growing it should have all the food it will consume. To stint is to lose. As soon as it reaches the size when growth begins to slack up it will take on fat and "round out," but the increase in weight is much slower than during the growth stage. Such an animal or fowl looks nice and sells well, but the looks have often been gained at the expense of the feeder. I have seen a single pig in a herd grow so much faster than the rest that one would think it was a month older. The time to sell is just before rapid growth ceased; after that time the period of largest profit is past.

For some time I gave this young farmer the necessary tips in about all the principal matters of farm management, and when I asked to be excused from further attention along that line he begged so hard to have me continue the oversight that I consented to again for another year, much against my desire. He said he had done so well and been so entirely rid of uncertainty that he would be entirely lost if I withdrew them.

There are lots of farmers like him. They are almost afraid to risk their judgment in regard to the best time to plow, plant, sell their produce, and so on.

My advice has always been and is yet to watch a successful neighbor, or two or three of them. The man who is almost certain to grow a good yield of corn is the one to pattern after in all matters relating to that crop. The man who is invariably successful with wheat is the one to watch in growing that crop. The one who always seems to hit the market just right with his grain or other produce is the one to closely follow in selling.

I was not a little amazed once at the action of a neighbor of the farmer I was working for at the time. These two men had had some trouble with each other about stock and as a result had ceased to recognize each other in passing. The man I was working for got a tip that the price of hogs had jumped 10 cents that morning. He rounded up his herd, selected those that were ready for market and had them in wagons in a jiffy. As we were loading the hogs I caught sight of the neighbor peeping through the hedge to see what the hubbub was about. As soon as he saw what we were at he called his boys and got his marketable hogs together in the loading yard.

As soon as he saw us on the way to town he put on three loads of his hogs and followed. He had so much faith in his neighbor's judgment on the best time to sell that he did not wait a moment to learn prices when he saw the other man selling. It was at a time when prices were fluctuating quite lively, and the day after these two men delivered their hogs the price was off 15 cents, and both of them were congratulating themselves on their prompt action of the day previous.

Last spring we had bad weather at corn-planting time and many a farmer was in a dilemma about planting. In the neighborhood is a man who rarely fails to hit the best time for it, and three or four farmers were watching him pretty closely. At one time it seemed that the opportunity to plant surely had come, and several rushed the seed in. But the old reliable did not enter the field. Those who were being guided by his actions thought he surely had missed it, and they worried considerable about their not going ahead and paying no attention to him. Two days later we had the heaviest and hardest rain of the season. Soon as the soil was dry enough to work this man was in the field with two discs driving for all he was worth.

The others immediately followed suit. As soon as the soil was fitted for the seed it was planted, as the season was well adanced. A few showers fell the following week, and soon as the surface was workable the man was on the field with his harrows with the teeth turned well back. He secured a fine stand, as did those who were imitating him, and they all had good yields. Those who planted earlier missed out in getting a stand and their crops were very light. During the summer I asked this farmer how he guessed the best time to plant. He said that he noticed the upper clouds were moving from the northwest and that was a good indication that the main part of the wet spell was at an end.

Some men are naturally observant and they see a great many things others do not. Others are natural traders and they rarely fail to get the top price for their produce. It is a good idea for those who cannot read what we might call "signs" and who are slow at judging markets to watch these chaps. They exist in almost every community, and they are generally termed lucky fellows, and they succeed where others fail. When a man is doing well steading there is a good reason for it. And while it might not be possible for everyone to understand his methods of arriving at what almost invariably proves to be a correct conclusion, it is easy to act when he does and get equally good results.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

Last week we sold several of the farms we advertised to some of the best farmers in Utah. Wheat is selling this week in the Bear River valley for $2.40 a bushel. The new price of the sugar company for sugar beets will bring the farmers tremendous returns. If you are looking for a farm that will pay for itself, with your efforts, in a short time, these farms will certainly appeal to you.

40 acres at $115 per acre, all in crop this year; right near good town, close to school, in one of the best districts in the Bear River valley. Small payment down and ten years, 6 per cent interest.

We have 120 acres, with a beautiful home, large barn, all painted and in first-class condition; wagon sheds, machine sheds, automobile garage, bunk houses, summer houses for the men; in fact, there are numerous other buildings, including chicken pens and hog houses. This property is immediately adjoining the town of Tremonton, on the main state highway. This farm can be bought for $175 per acre, including all these improvements. This land will rent for cash and pay big interest on the money. Small payment down, ten years on the balance, 6 per cent interest.

In Cache valley we have a number of first-class farms for sale at from $10 for pasture land up to as high as $130 per acre, depending upon the location and improvements upon the ground. We have one nice home, surrounded by large shade trees and lawns, good fruit trees, large barn that will hold thirty or forty head of stock, with a big haymow overhead. This property has city water piped to the door; in fact, it is a beautiful place to make a home on a farm. We can sell you this property for $130 per acre for the irrigated land, throwing the improvements in, giving you ten years to pay.

In Salt Lake county, within ten miles of city limits, we are offering one of the best farms in this valley, containing 150 acres, with first-class imrovements, all under high state of cultivation, at a very reasonable price. We may consider some first-class Salt Lake property on this farm. If you desire to own a farm and live in Salt Lake, it will be impossible to find an equal to this farm.

We still have one nice dairy farm for sale in Cache valley, containing 160 acres. This farm has sixty acres of irrigated land and 100 acres of pasture land. We are holding this irrigated land at $100 per acre and the pasture land at $10 per acre.

On Fourteenth South we have a beautiful nine-room house, two blocks from the car line, surrounded with nice lawns, large shade trees, a splendid family orchard and berries. This property contains six acres, all under a high state of cultivation; barns, chicken runs and numerous other outbuildings. This house cost approximately $8000 to build. This property can be had for $7000, 10 per cent down, ten years on the balance at 6 per cent interest. If you are looking for a beautiful suburban home, where you can raise a garden, fruit and berries, and chickens, it will certainly appeal to you.

We also have on a five-cent car line some one-acre tracts for $450 per acre on a small payment down.

KIMBALL & RICHARDS
"Land Merchants,"

52 and 54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

HOMESTEADS

For the best homesteads in Utah, write
GEORGE A. COLE
Monticello, Utah.

YOUR CHANCE TO MAKE SOME MONEY

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

OUR PROPOSITION

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. ALBERTSON
604 Dooly Building
Salt Lake City, Utah.

FOR SALE—REAL ESTATE

Ninety acres fruit and stock farm near Ogden, 30 acres in choice fruit, $1,000 in tools and implements. Full water right. Will sell with or without this years crop. One-half of purchase price can run at six per cent. Will consider trade for desirable city or farm property.

O. A. KENNEDY
Utah Nat'l. Bldg. Ogden, Utah

FOR SALE OR EXCHANGE

Southwestern Idaho highly improved irrigated income property with no incumbrance. Splendid community, near good town. Good water right. Price right and terms easy. Will consider an exchange for developed or undeveloped irrigated land in eastern Idaho or Utah where sugar beets are grown, also water logged land where drainage is available, if price is right.

Farm Owner, care of
UTAH FARMER
Lehi, Utah.

IDAHO RANCH BARGAIN

200 acre irrigated cattle ranch, adjoining open range and two miles from forest reserve. Has 125 tons hay, 20 acres grain, 5 acres of potatoes, 12 horses, 26 cattle, 22 hogs, 150 chickens, harness, wagons and all the machinery needed. Price $12,000. Good terms.

FEDERAL LAND CO.
Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest,

H. A. PINEGAR
Wellington Utah

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district a a good buy. Ed. Pearson, Route A., Delta, Utah.

CORN FOR SILAGE

(Continued from page 2)

with spots varying in color from grayish white to yellow. There is no positive cure for this trouble known at present. As in the case of any other contagious disease the sick bird should be immediately removed from the flock to prevent further infection and if very sick it is best to kill it and burn the body. Clean out the roosting place and spread lime in places most frequented by the birds. Disinfect the drinking water. Potassium permanganate is most commonly used. Use enough of the crystals to give the water a wine color. The amount that would stay on a dime to each gallon of water is about right. Avoid heavy feeding and give the turkeys as much free range as possible. The feeding of sour milk has been found to help in reducing the spread of this disease and in keeping the turkeys in good health.

In the case of most contagious disease it is usually advisable to kill and burn any sick birds rather than to attempt treatment and run a risk of spreading the disease.

RUN YOUR HOG PLANT AT CAPACITY THIS YEAR

Have you retained a sufficient number of your best breeding animals to keep your hog plant running at capacity for the coming year? Are you in a position to take advantage of the high pork market and the correspondingly high pure-bred market? Are you prepared to reap a handsome reward from the hog business this year and next?

The time is ripe for the hog producer. Prices are high and will possibly go higher. You can market your grains and grasses and do so more profitably on the hogs four feet than through any other channel. The world needs the pork you can produce and you need the profits it will bring you.

If you are not prepared, begin now.

WHEN BOTH AGREED

Papa (sternly)—Come here, sir! Your mother and I agree that you deserve a good whipping.

Small boy (sternly)—Oh, yes, That's about the only thing that you and mamma ever do agree about.

Save the Grain

Don't let rats, mice, bugs and rain ruin the Nation's bread. Your country needs the food—you need the money. Be prepared to hold the crop if conditions warrant it.

BUCKEYE GRAIN BINS

$60 and up

200 TO 5,000 BUSHELS

Saves insurance cost; loss from rain and snow; loss from mold; loss from thieves.

Write Today—Our Stock Is Limited

There is nothing of the "tin-can" about the Buckeye. It's the "CRIB WITH THE STEEL RIB." Built of heavy galvanized sheet steel, double braced and tight; will last for many years.

THE PIERCE COMPANY
1118 Waldheim Bldg., Kansas City, Mo.

SAMPSON SIEVE GRIP TRACTOR

This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns kerosene or distillate, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price $1,600.00, delivered on cars at Salt Lake. Tractors on hand for immediate delivery.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

Berkshires For Fall Breeding

from

BALLAMOAR

FARMS

50—Spring Boars and Sows to Select From—50
Our 1917 Crop is Equal to Former Ones.
Write for Prices.

Caine Livestock Co.

RICHMOND UTAH

POULTRY

WHAT BREED DO YOU RAISE?

Byron Alder, U. A. C.

It Is Important That the Poultry Man Select the Breed Suited to His Purpose.

Many of the important problems in the successful management of chickens are too often overlooked. The idea that increasing the feed in quality and quantity is all that is necessary to make hens lay is erroneous. There are a number of other factors that are equally important and must be considered before success can be obtained. Only purebred stock that has been carefully selected and bred for vigor and power to resist disease should be used; they must be kept in a house that is light and always dry, free from draughts, yet supplying an abundance of fresh air; and they must be protected from the ravages of rats, mites, lice and other enemies.

One of the common standard breeds should be selected that is best suited for the condition and the purpose for which it is kept. If there is a good demand for eggs, and meat is fairly cheap, one of the small nervous and very active breeds would be the best but if both eggs and meat are desired, a larger breed might give the best results. For convenience in studying, the different breds are placed according to their useful qualities in one of the following groups: egg breeds, meat breeds, general purpose breeds, and fancy breeds.

The Egg Breeds.

This group includes all of the small, nervous, active breeds that do not take on flesh readily and are flighty and hard to confine. Most of them are non-setting, that is, they have lost the broody habit, and cannot be depended upon to hatch and rear chicks. Individuals may become broody, but are not reliable to use for incubation. They are excellent foragers and will range over considerable territory, and obtain a large part of their feed, if given the opportunity to do so; yet do fairly well under close confinement. They are hardy and mature early. Pullets often begin laying when only five month old. The most popular breeds of this group are; Leghorn, Minorca, Ancona, Hamburg and Campine.

The Meat Breeds.

In this group are the very large, slow, awkward fowls. All are of Asiatic origin and have feathered legs. They are easily confined, poor foragers, and persistent setters. They take on flesh readily, but mature rather slowly. When carefully managed the pullets are fairly good layers, but as a usual thing they get too fat and lazy to produce many eggs. The Brahma is the most popular breed and the Light Brahmas are the largest, the standard weight of the cock being twelve pounds. The other breeds of this group are the Langshan and Cochin.

The General Purpose Breeds.

Here in America these two extremes have been brought together, and through crossbreeding and careful selection a group of fowls has been developed having many of the desirable characters of each. These fowls are lage, yet when properly handled they are good egg producers. They are gentle, fairly good foragers, hardy, easily confined, make good incubators and excellent mothers. They are especially good for farm conditions where only a few fowls are kept for home use. Unless properly fed and managed they will get too fat to be profitable layers. The popular breeds of this group are the Plymouth Rock, Rhode Island Red, Wyandotte and Orpington.

Fancy Breeds.

In this group are the Bantams, Games and many others that are kept as pets or because of some peculiarity or fancy coloring.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Durocs."

FOR SALE

A 20 H. P. International Harvester Tractor Engine, less one-third cost price. Engine now $700.00, 5-disc plow, $75.00. See outfit at work. Also big Engine Disc Harrow, New Spring Tooth Harrow, Small Disc Harrow and one Mower.

HENRY SCHEPERS
Sells, Skull Valley, Tooele Co., Utah.

FOR SALE

Registered Duroc Jersey Pigs, just weaned, from prize-winning sows and Richard's Defender Boar. The best Duroc blood in the West. Orders also booked for "Path-finder" pigs from "Defender" sows. Prices very reasonable.

VICTOR R. FISHER
Oxford Idaho.

BROWN BROKERAGE COMPANY
Eccles Building, Ogden, Utah.
Our business is selling in car lots.
COTTON SEED CAKE & MEAL
CORN, OATS, HAY, STOCK FEED
Provide against uncertainties of transportation by anticipating your requirements early.

Wanted to hear from owner of good farm for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

Help Your Boy

It is every father's business to advise and help his boy.

To guide and start him out right in life.

Can you help him in any greater way than to find the work for which he is best fitted?

To do so means his success.

Get one of Dr. F. S. Harris' new books.

The Young Man and His Vocation

It explains the various sides of every kind of work—tells the preparation for each, the opportunities of each and the pay from each.

It points out, suggests, encourages.

It will help you to help your boy. It will help your boy to choose for himself.

Send $1.25 to
Book Department
THE UTAH FARMER
Lehi, Utah

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

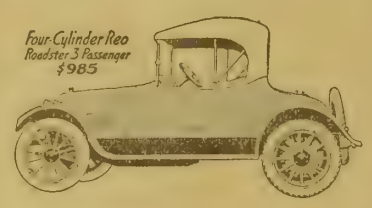
Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

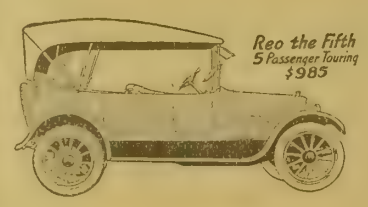
100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	[illegible]
1,000 Butter Wrappers	$[illegible]

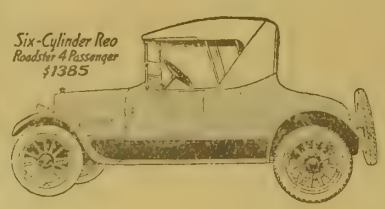
Check or money order must accompany order.

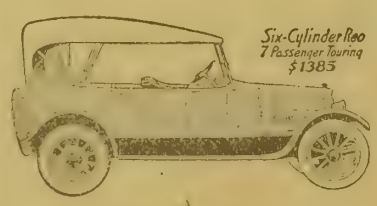
REO

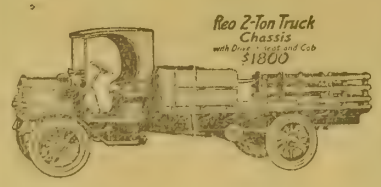
The GOLD STANDARD OF VALUES

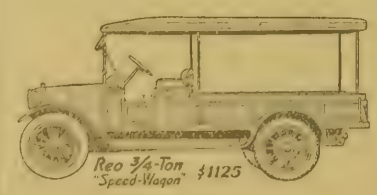












All PRICES are F.O.B. LANSING and subject to increase without notice

Reo Quality is Uniform in all Reo Models

AND REO QUALITY at Reo Prices and backed by the Reo guarantee, constitutes "The Gold Standard of Values"—each model in its class.

WE SHOW HERE SIX Reo Models, comprising Fours in Touring and Roadster types; Sixes in Touring and Roadster; and the two Reo Commercial Vehicles—the 3/4-Ton "Speed Wagon" and 2-Ton "Heavy Duty" Truck.

IN THIS ADVERTISEMENT we have space only for a brief paragraph pertaining to each Model—lest you forget the line is so complete that you can find the car you desire, in the type you prefer, and in a Reo.

REO THE FIFTH, "The Incomparable Four," is America's most famous automobile. Standard in practically its present form for now eight seasons—"going on nine." At its present price, $985, this car is verily "A gold dollar for ninety cents."

TO REO THE FIFTH more than to any other, is due the movement that is now so apparent—the return to the Four-cylinder type in all cars listing at less than $1000.

THE FOUR IS THE ULTIMATE type in that price class. Economy of upkeep, as demonstrated by this Reo model, has done much to prove the superiority and ruggedness and economy of the Four in that class of car where the buyer must count the cost and yet demands the service and the roominess.

THE FOUR ROADSTER is the handsomest model of its type you'll see on the road—at any price. And, for the present, you can get it for $985 and freight from the factory.

OF THE SIX ROADSTER the same is true, plus the extra luxury it affords the owner at the extra cost—$1385 f. o. b. Lansing.

THESE TWO ROADSTERS are of similar design and identical construction, and are conceded to be the handsomest cars of the type—price aside.

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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 6 LEHI AND SALT LAKE CITY, UTAH SEPTEMBER 8, 1917

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WAR AND ROADS

By William Forrest Long.

Many militarists of both national and international repute have oft repeated the statement that the country, or countries, possessing the last bushel of wheat would win the war. In other words, the food supply of a nation is of primary importance; its soldiers at the firing line are only a secondary consideration. Again, we are told that for every man at the front, seven are required in back of the lines and at home for supplying him with food, clothing, and the implements of his craft.

President Wilson not long ago told us that the entire nation—its men, its women, its children, together with all of its vast resources, including railroads, fields, forests and factories, must be pressed into one vigorous and efficient prosecution of the campaign if we would win. "The nation at war," then, is the new slogan of the latter date twentieth century Americans.

Accordingly, the words: efficiency in all things, should constitute and be our guide throughout the entire duration of the crisis in which we are now involved. Little will it suffice to have efficient and well trained soldiers at the firing line, unless we likewise have efficient and well organized methods of supporting these soldiers from the rear. We must, therefore, conserve all of our resources; we must make efficient to the last degree, not alone our soldiers in the field, but also our workers at home, our farms, our industries, and our railroads. Each one of these forms its own vital link in the great chain of national efficiency, of which the whole must prove a failure, if any single component part is slightly or neglected.

We must intensify the production of our fields. We must grow more food. To us has been delegated the task of feeding practically all of the allied nations. In view of this grave responsibility, the word efficiency strikes home with double meaning and force; and in the performance of this most gigantic task, we can ill afford to waste a single grain of either mental or material energy. However, it will be of little avail to intensify the production of our fields, to conserve every ounce of soil fertility, unless we likewise provide a more efficient means of getting these farm products, these necessities of life, from the farm to the consumer, the market, on the railroad sidin as the case might be.

One serious fault with us Americans is that we become so engrossed with the importance of our particular duties, and with the line of specialty, in which we ourselves are engaged, our own troubles and tribulations, that we are sometimes inclined to loose sight of the importance of the duties and lines of specialty of others. For instance, those engaged in military operations are so apt to depreciate the importance of the activities connected with our industrial operations; those connected with industries to forget that there are serious problems and difficulties connected with the operation of farms or railroads; and those engaged in the problems of railroad transportation to belittle or minimize the importance of, and the difficulties connected with transportation by way of public highways, etc. We must grow out of this state of mind; we must become broader in our views, and more appreciative of all the problems connected with our present propoganda, if we would attain the ideal state of efficiency and preparedness.

Roads! We must build them; we must have more and better roads; roads of such a nature that will successfully stand up under and survive the effects of modern traffic conditions, and not transform themselves into veritable sloughs of mud and dust as soon as they are built. We can no more afford to waste money, and time, and labor, on this link of our chain of national efficiency, than on any other. Indeed, these arteries of communication between our farms and our railroads, our towns and our cities, our stations of reserve and our firing lines, are just as vital—just as essential to this nation's state of preparedness and efficiency, as are the fields, the railroads, our industries—yea, or even as the soldiers at the firing line; and our captain of industry, our railroad presidents, our agricultural experts and army generals must be made to realize this all important fact!

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VOLUME XIV. LEHI, UTAH, SATURDAY, SEPTEMBER 8, 1917 No. 6

More Wheat In Utah

By Dr. F. S. Harris, Director of Experiment Station.

In the effort of the Government to increase the wheat supply of the country in this period of great national need, Utah has been asked to add 12 per cent to her production of fall wheat. This comes as a direct call from the Government the same as the other calls to duty that have been issued during the last few months. Utah has always felt a pride in being a leader in her support of every patriotic move. Her response to the liberty loan, the red cross, and the call for men are already matters of record to which every loyal citizen can point back with pride in years to come. From Utah's habit of responding when duty calls, we may be sure that in this latest call she will not be found waiting.

The only question that will be asked is: How can this be done to best advantage without decreasing the production of other crops? Utah has never been a large producer of wheat when compared with some of the other states. Her total production amounts to only about eight million bushels; while a number of states have yielded over one hundred million bushels in a year.

The area of Utah is over 52 million acres with less than 4 per cent of this land in cultivation. While the larger part of the State is made up of mountains, there are large tracts of land now lying idle that are capable of producing wheat. Many of these tracts are held by private individuals for speculation. The owners do not have to farm and they hold the land for a rise in price, when it should be released to those who would cultivate it.

In the days when wheat sold for sixty cents a bushel, it did not pay these land owners to operate their farms with hired help and as a result the land was left in its native brush. Now that grain has increased so much in price, there is no doubt that much of this land can be made to return handsome profits. If it is ever going to pay for being farmed, surely now is the time. The suggestion is made that during these times of high prices the land can be cleared and cropped, the expense being justified by the extra money received for the crop; then prices should return to normal, the big expense of bringing the land in having been met, the land will be able to pay.

Millions of acres of wheat should be raised every year with the flood water that runs to waste in the spring. Down every river during the early part of the season great floods of water rush and go to waste. If this water were diverted on to the land a rich harvest of wheat would result. The Utah Experiment has demonstrated that the early water can be used to very good advantage in raising wheat. This makes it possible for the farmer to raise as large an acreage of beets, potatoes, alfalfa, corn, and other crops as he has late water for, and at the same time he can produce as much wheat as will be possible with the extra early water. It is not necessary to use any water for wheat during the later part of the summer when it is scarce.

Although important results may be expected from improved methods of irrigation, the great increase in wheat production in Utah will come from the dry-farms. Each year new tracts are being opened, but there are many more areas that are capable of development. Some of these are comparatively near the larger cities of the State. The delay in many of these cases is due to the fact that the owner will not develop the land himself nor will he dispose of it at a fair price to others who would be willing to raise crops.

Of course, much of the delay results from lack of capital, power, and machinery. In many of these cases helpful co-operation between capitalists and land owners would be mutually profitable.

Notwithstanding all the difficulties that arise, Utah should try to do her part in giving to the nation the extra wheat that has been requested of her.

All important factors governing the production of various crops are carefully studied by the Utah Experiment Station. The affect of the amount and time of irrigation on the growth and maturity of wheat is being studied in the cut. Guess work is eliminated from farming by such methods.

Marketing Considerations

M. H. Greene, Field Agent in Marketing, The Extension Division of the U. A. C. and Bureau of Markets Co-operating.

The opportune time now presents itself for every producer of agricultural products to stop and consider what is to be done with the farm crops. Will it pay best to sell at harvest time or store and take chances of an increased price? Should the hay and grain be converted into a finished products, such as pork, beef, mutton, eggs, milk, etc., or be sold at the prevailing high prices? Can part of the crop be sold and cheaper feeds substituted? Will it pay best to sell direct to consumer or make a sale through the aid of a middleman? These are but few of the questions which will occupy the thoughts of our Utah farmers this fall.

The lack of observing the fundamental principles of distribution and trusting to luck by following haphazard system of making sales is a primary factor determining failure in the farm business. The farm is a business and the farmer is its manager, not only as a producer but as a salesman. Scientific management must be on the farm as it is in the factory. It's the knowing of what to produce and how and when to sell that counts.

The farmer who produces and does not study the needs of the trade to which he caters is gradually failing in accomplishing his fullest purpose. To sell unsorted potatoes, or peaches and apples with the nice large ones on the top of the box or basket is a deteriment to the trade. The detection of a wormy apple or undersized peach or a small snubby potato brings down the price of the lot. **It's the product of poor quality which determines the price of the superior product.**

The principal weakness is marketing are improper grading and packing. Already our Utah farmers are asking about number one Northern and the other grades of wheat mentioned in connection with the fixing of wheat prices by the government at the primary markets. The grain standard act governing the sale of cereals is just the beginning of legislation with state and national in the direction of proper standardization. Yet one of the first remedies for poor grading and packing will be found in awakening the farmers to the needs of improved methods.

Utah Farm Profits

By E. B. Brossard, Farm Management Demonstrator, Utah Agricultural College and U. S. Department of Agriculture co-operating.

Labor Income Satisfactory.

The farming business is not difficult to analyze when farm accounts are kept. The County Agricultural Agent of Utah, co-operating with the Farm Management Demonstrator, have been encouraging farmers to keep account of their farm business in the "Utah Farmers' Account Book." They are urging this in order: 1. to teach a simple method of summarizing the farm business each year; 2. to measure each year's farm profits; 3. to assist the farmers to become familiar with the facts concerning their success or failure; 4. to make a permanent record of the successes and failures for future reference; and 5. to establish certain standards which are necessary to the success of the farmer on any particular farm.

In the analysis of these records the farmer's labor income is the measure used to show the comparative profitablenesss of farms. It seems to be the most accurate and convenient measure by which to compare farms with farms. It does not, however, show the entire net annual income of the respective farmers.

Labor income is obtained by subtracting, from the gross farm receipts, the gross farm expenses and 5 per cent interest on the capital investment. An example of how labor income is figured is shown in Table I which gives the average figures from 308 Utah irrigated farms, 1916. This labor income is considerably higher than normal, due to the abnormal conditions brought on by the world war.

Table I. Average labor income from 308 Utah irrigated farms, 1916.

Average capital investment	$9,262
Average farm reecipts	2,220
Average farm expenses	912
Average farm income	$1,308
Interest on capital at 5%	463
Average labor income	$ 845

It may be seen that Utah irrigated farms which do a general diversified farm business are profitable.

There are two items, however, which are not considered in figuring the income from the farm by this method. The farm products consumed by the farm family such as meat, fruits, butter, eggs, wheat for flour, fruits, vegetables, etc., the value of which is estimated at about $600 for the average farm; and the increase in the value of the farm land are thus not included in labor income.

The increase in the value of farm land due to the labor of men, teams, etc., has been included in labor income, by calculating the value of such labor and adding it to the other farm reecipts as an increase in inventory, but no annual increase in value that might be thought of as "unearned increment," is included in labor income as calculated in Table I.

Utah Irrigated Farms Are Good Investments.

It is recognized, however, that there is an annual increase in the value of the farm property which is not included in labor income. This in no way affects the purpose of the farm accounts, as now being kept by about 1,000 farmers in Utah, but it should be taken into consideration by all persons when purchasing any kind of a farm no matter where it is located.

According to U. S. census figures, the average value of all farm property in Utah in 1850 was $1,018, and in 1910, $6,957. This indicates an increase for the 60 year period of $5,939 or 583.4 per cent of $1,018. This represents an increase each year in the value of all farm property, at the rate of about 10 per cent of the original value ($1,018), of 3.255 per cent compounded annually. This shows that Utah farm land on the average has been a good investment.

(Continued on page 7)

DAIRYING

KILLING COWS AND CALVES

"I think it would be a good thing to pass a law to compel farmers to weigh the milk from each cow and sell as veal all calves from cows that do not produce at least 250 pounds of butterfat per year, also to sell such cows to the butcher."

This is a suggestion from an Illinois farmer. In normal times his words would not pass undisputed. Under present conditions advocacy of such wholesale slaughter must be promptly nipped in the bud. Certainly such a suggestion, wholly without provision, should not unchallenged.

Thousands of the cows that produce less than 250 pounds of butterfat per year are not at fault. Their production indicates the care, feed and management they receive rather than their productive ability. Before laws are passed that force slaughter on the basis of low production, laws should be passed to regulate breeding and feeding, care and management.

The average production in this country is less than 150 pounds of butterfat. Therefore, our Illinois farmer would have a very large percentage of the milk cows and calves of the United States slaughtered.

A steer living three years makes only about 200 pounds of fat in his lifetime. The 250-pound cow makes 750 pounds of fat worth three times as much per pound, and she eats little or no more food in doing so. The average cow that yields 250 pounds of butterfat in a year produces approximately 6,000 pounds of milk in which is contained over 500 pounds of mineral matter, protein and milk sugar, most of which are digestible and the best of foods.

Even in normal times no greater calamity could befall this agricultural nation than to pass a law that would destroy animals producing annually more than 700 pounds of the choicest and most necessary of human foods. The milk supply would be so curtailed that scarcely a human infant would live, few invalids would survive, the fertility of the soil would quickly wane, the pursuit of agriculture which crumble and the progress of civilization would cease. Illustrative proof of this is found today in Europe. In England where condensed milk has continued to be available by importation, infant mortality is only about 60 per cent. In Serbia, where there is almost no milk, 98 per cent of the babies born die in infancy, and the average baby mortality in the warring nations is approximately 90 per cent, due largely to the limited milk supply. The law our Illinois friend suggests would result in a like condition in America.

Be it remembered that milk and milk alone contains the life-saving, growth stimulating bodies that are essential for child existence and development. Mature beings can survive on proposed milk and butter substitutes. Children cannot.

The point our Illinois friend attempted to bake a well taken. His desire, no doubt, is to make impressive the fact that, with conditions as they are today, no man should be content to milk a cow yielding only 250 pounds of butterfat in a year and raise the calf from such a cow, when by the use of a good sire and proper methods of feed, care and management, he can build up a herd much more productive.

The Ohio Agricultural Experiment Station found after a study of 26 average herds that raising calves for veal or for beef is a losing proposition. The owners of 18 herds raised 323 veals and lost on the average $1.95 a head. The average loss incurred by raising 361 calves for an entire year was $6.90 each. Only five dairymen in 30 raised calves at a profit. There can be only one logical conclusion drawn from these results and the thoughtful farmer has long ago drawn the conclusion and is gradually solving his problems. He has substituted the silo for the stalk field, legumes for timothy hay, light, well ventilated barns for cold, damp, dark, foul-smelling quarters. He is keeping good cows, giving them good care and abundant, well balanced rations, and the greatest step he has taken is that of heading his herd with a purebred sire of highly productive ancestry. As a result of feeding, breeding and selection, his herds are improving. Instead of slaughtering every cow that failed to make him a profit he has increased her production and bred from her daughters which he has raised well, developed properly and made from them cows that are not only more largely productive than their mothers, but which when mated with good sires, reproduce offspring that in turn are more productive than their mothers.

Construction and not destruction is what laws should encourage. No healthy cow is so poor but that highly productive, profitable descendants can be bred from her as a fountain head if intelligence is used in the selection of the sire and in the development of offspring, generation after generation. This has been conclusively proved repeatedly since the time when the only cows on earth were longhorned wild beasts of the prairies and forests.

Pass laws if you will to slaughter the scrub bull and to knock in the head on sight his male offspring, but save the females and breed from them the class of cows which not only foster humanity, but return profit to their owners.—Kimball Dairy Farmer.

———o———

AVOIDING LEAKS IN CREAM CANS

By W. H. Underwood.

If every cream producer realized that "quality makes the market and the market determines the price," it would put more money into his pocket. This fact seems difficult for the farmer to comprehend, especially in the cream business. When farmer A gets no more for his cream than farmer B, although A produces clean, sweet cream, and B cream that offends three special senses (sight, taste and smell) "what is the use" argues A and he becomes careless about cleaning his barn, separator and dairy utensils and cooling the cream. The result of this is deterioration of creamery butter.

Seldom can a creamery be found that is not equipped with modern machinery and everything kept in a sanitary manner and the buttermaker knows his business. The creamery is capable of turning out a number one, gilt edge product which brings a top notch in price when it can buy clean, good flavored cream.

The person behind every can of cream shipped must have enthusiasm, a wide-awake interest, in the cream arrives at the creamery in good condition. This is especially true during the summer time. In hot weather it is more difficult to avoid leaks in the cream can than at any other time of the year.

To produce good cream we must first have good, clean milk. The only way to produce clean milk is to get no dirt in it (for we can't strain dirt out of milk) and the clean cow is the first aid to clean milk. If this clean cow is milked in a clean barn and everything the milk touches from the time it leaves the udder till the cream is separated from it, and the cream is received in a clean can, the cream is bound to be good cream.

As warm cream is an ideal soil for the development of bacteria we must cool the cream immediately after separating. If the cream is cooled to a temperature of 50 degrees and held at this temperature it will keep in good condition for a long time. It is well to use a thermometer to test the temperature. If ice is not available place the can of cream in a tank of cold water and stir the cream frequently while cooling. When two batches of cream are being mixed both should be at as near the same temperature as possible.

If the day of shipping is very sultry the cream can is quite likely to leak at the top. As the cool cream becomes heated on its journey to the creamery it expands and is forced out at the lid. Often on a hot day I have seen the cream oozing from the cans at the railway station even before shipping. This could have been avoided if a jacket made of an old blanket had been wet and then slipped over the can. Felt jackets for this purpose can be purchased from dealers in dairy supplies and I know from experience that they are well worth the price asked for them. In the five gallon can that you ship forty pounds of cream in winter it is well to put only thirty-eight pounds during hot weather.

Keeping the cream too long before sending it to the creamery is one source of poor quality butter. Poor quality is a leak in the can. We must not be "penny wise and pound foolish" about transportation. It is better to ship two can of cream in three shipments and have it arrive at the creamery in good condition that to wait until all the cans are full and the cream be received with an off flavor and low in quality. A creameryman of wide experience says this is one of the biggest leaks in the creamery business. Cream that is so old that it is just whey and lumps is very difficult to test as it is not likely to be well mixed so a uniform sample can be obtained. That sample is so small that a mistake is multiplied several times when computing the contents of a can. The better the cream the more uniform the sample and hence the fairer the test.

A cream can can have a leas that occurs right at the separator. Every separator has stamped upon it the speed at which should be operated to obtain the best results. Many farmers just guess at the rate. To guess is a

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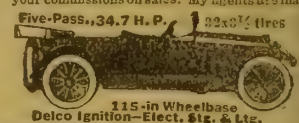

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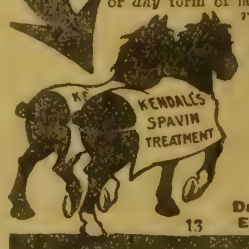

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leak. It pays to know. Time the separator speed with a watch and see if it is not being turned too slow which means a loss of butterfat in the skimmilk and, of course, a leak in the cream can. Devices are on the market for measuring the speed at which the separator should be operated. Error in running the separator means a loss that will soon pay for the device that indicates the proper speed. Avoiding leaks in the cream can means more money to add to our bank account.

—o—

THE THERMOMETER IN THE DAIRY

By R. W. Latta.

A good theremometer should be constantly at hand around the dairy. The temperatures at which milk, cream and butter are kept, and at which the various operations of separating, feeding and testing the milk, and making butter are carried on, are of great importance.

When milk is sold it should be immediately ocole dafter milking to a temperature of 50 degrees Fahrenheit or lower, to prevent the growth of bacteria which will spoil the milk. At 50 degrees Fahrenheit one single germ, or bacterium, might produce four or five germs in twenty-four hours, but at 70 degrees each germ might become several thousand in twenty-four hours.

If the cream is to be separated by a centrifugal separator, it should be run through the machine fresh from the cow, while still warm, at a temperature around 90 degrees Fahrenheit. If the milk is to be creamed by gravity, it should be cooled to about 50 degrees Fahrenheit soon after milking, as this results in a more thorough separation of the cream and in a better quality cream and skimmilk. The skimmilk fed to calves should be warm, 85 degrees to 90 degrees, and fresh from t..e separator. If the milk is not always about the same temperature, digestive troubles are apt to result in the calves.

Temperatures are very important in making the Babcock test for butterfat in milk or cream. Samples can be more thoroughly mixed when warm, but should not have the suphuric acid added until cooled to about 70 degrees Fahrenheit. Too cold samples or acid will cause trouble in testing. Nor should they be too warm; about 70 degrees is right for both the acid and the milk sample. The hot water added to the test should be as hot as possible, and the test should never be read until it has stood three to five minutes in a hot water bath at a temperatuer between 135 degrees and 140 degrees Fahrenhei, and the fat in the neck of the test bottle must be under the level of the water.

The temperatures of cream, wash water and salt are of great importance in making butter, and no one should attempt to make butter without the constant use of a good, reliable thermometer. Cream should be churned at a temperature between 52 and 64 degrees Fahrenheit, depending on the time of year, richness of the cream, time it takes to churn and hardness of the resulting butter. When once the best temperature is determined, it should be followed closely until conditions change, as shown by the different time that it takes to churn and the condition of the butter. The wash water should never be but a few degrees from the temperature of the buttermilk, and the salt will be dissolved better if at about the same temperature as the butter. The temperature for churning should be regulated so that the butter will come in about twenty-five minutes.

A good dairy floating thermometer can be bought for 25 to 40 cents, and no dairyman should be without one.

—o—

GOOD STOCK NOT ENOUGH

It should be the ambition of everyone in the breeding of livestock, no matter on how small a scale, to improve on the farm stock. It is possible to obtain sires to head your flocks or herds that are superior in quality and breeding to the females that constitute your producing herd. Every owner of such breeding animals should realize the opportunity and responsibility of bettering conditions around him.

Good animals are produced by plenty of good feed and good care. The farm where good stock are kept must itself be well kept. It will not do to abuse the farm by eating out the pastures and impoverishing the land. Good, well kept farms and good stock very naturally go together. A big, rank growth of grasses where the animals wade around in the pastures is much more conductive to thrift and growth than where they are obliged to spend all day and part of the night in search of enough feed to satisfy their appetities partially. The constant hunting and anxiety of the animal, the nibbling process that must be energetically kept up in order to sustain life, is a waste of energy and a waste of flesh. It puts the animal on a system of decline rather than one of vigorous development.

One of the very common mistakes made on many stock farms is overstocking, trying to keep more animals than can be profitably and properly kept. This is not a difficult thing to detect. Any observing feeder or breeder should be able to pick out these places as he drives through the country. It is not necessary even to see the animals. The pastures show it first. Hog lots and cattle lots and yards are very naturally supposed to be bare; they are not intended to product a living for the animals kept on the farm; they are merely conveniences for yarding where the apportioning out of the prepared feeds designed for the animals is usually done. But the pastures adjoining, these yards are supposed to contain an abundance of good, succulent feed for the growth and development of the stock.

In the production of good stock good feed conditions must first be provided. This means good farming, and good farming is at the basis of every successful farm industry or enterprise. The feed supply must not only provide for the grazing season, but for all seasons. The winter season is the most critical period in the growth of the animal, because the natural conditions of vegetation must be supplied as far practicable by the storage and preservation of succulent feeds for winter use.

How to produce good animals is rather a complex proposition with most persons who attempt the breeding industry. It is not all in securing good blood and good individuals. Too many fanciers fail in the proper feeding and care after laying a good foundation by purchase. It is not infrequently the cause that pure-bred enterprises result in a lower standard of quality at the end of ten years than was present with the original purchase. This is generally due to a degenerating influence in feed and care, though, of course, the prime factor in the loss of quality in herd or flock is from mistakes in the selection of sires to carry forward improvement properly.

—o—

HOW TO MAKE COB CHARCOAL

As charcoal is a very desirable supplemental food for pigs, it is well to know how to make a good article and cheaply, particularly in the cornbelt, where there are more or less cobs after corn-shelling season.

Dig a hole in the ground about six feet deep, and four or five feet across, bricking it up with fire brick so there will be no danger of its caving in or becoming broken up. Build it up to a level with the ground and have a heavy galvanized iron cover made large enough to cover the pit tightly. Then take a double wagon box full of dry cobs and start a little fire in the bottom of the pit, adding a few cobs as fast as those in the pit begin to burn and come to a red glow—actually burned to a charcoal—yet looking bright red. As fast as this condition appears in the pit add a few more cobs, until the entire pit becomes filled to the top with a glowing mass of burned cobs. Then have handy a few barrels of water in which salt is dissolved and sprinkle it on this pit of burning, glowing cobs until the fire is entirely extinguished. Then cover the pit with the iron cover, packing a little dirt on the edge so no air can get in the glowing mass, and leave it until the next day, when the fire will be all gone and the pit full of charred cobs in a condition where they can almost be crushed with the thumb and finger. Let it stand until you know it is absolutely cool before feeding, then put a bushel basket full in every lot where there is a sow and litter, or where there are eight or more pigs. It will be surprising to you to see how eagerly this is eaten by pigs and hogs of every age and condition. They seem to relish it very much and it acts as a corrector of acidity. This is a good thing to have on hand at all times if possible. Good charcoal cannot be made by raking up cobs from the feed yard and burning them in the open air, for the reason they will either all burn up to ashes, or if you put out with water, will leave many of them simply scorched and not burned to charcoal.—A. J. Lovejoy.

—o—

TAKING GREAT CAUTION

"I hope, Jennie, that you have given the matter serious consideration," said the lady to a servant girl who had given notice because she was to be married that day two weeks.

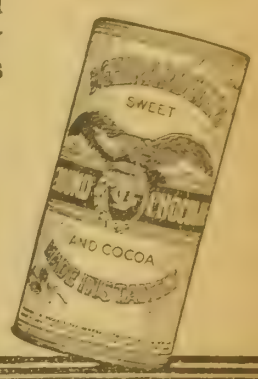
"Oh! I have, ma'am," was the earnest reply. "I've been to two fortune tellers and a clairvoyant, and looked in a sign book, and dreamed on a lock of his hair, and been to one of these asterologers, and to a meejum, and they all say go ahead, ma'am."

The Nation's Strength

is not only in the mailed fist but in the hand of industry—the hand of health. It behooves all of us to be strong and keep strong, in order to carry the present day burden.

As a strength-giving food product Ghirardelli's Ground Chocolate is an ideal blend of foods—cocoa and pure sugar, each full of elements that supply energy and build up worn tissues.

A tablespoonful of Ghirardelli's Ground Chocolate, 1c. worth, makes not only a delicious but an unusually nutritious beverage. Drink daily a cup of



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Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

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Established 1904.

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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

See that the tractors are kept busy plowing these days.

Get rid of all boarder cows. They reduce your profits. Feed is too high to be feeding poor cows. The Babcock tester will tell if they are paying you a profit. Test your cows.

THE NEED OF GOOD ROADS

The value of good roads is being brought home to many of us during these times of trying to accomplish a great deal in a short time.

After a farmer has produced a crop, unless he has a good road to market, he has another burden and expense to bear in turning his crop into money. Good roads move the farm into the heart of profitable markets. The surplus food and food stuffs produced on the farm will be moved into the large centers of population, and good roads are necessary to do this at a low cost.

Good roads are the foundation for community and social development. They bring neighbors closer together.

Good roads are feeders to the railroads. With good roads the delivery of farm products to market can be made with auto trucks.

There is no good reason why we should stop building and improving roads. There are many good reasons, however, why we should continue to do so.

THE PRICE OF IMPLEMENTS GOING STILL HIGHER

One of our largest jobbers of farm machinery told us that the price of machinery would go still higher. He says the manufacturers are having a hard time to get material, and that they have placed their orders now for their next year's needs, but he does not know what proportion or percent they will be able to get. He says there will be another advance in prices about the first of the year.

To illustrate how the prices are climbing, take for instance, the plow that sold for $47.50 is now $78.00 since the first of August, and he predicts [illegible] the first of the year.

The price of other kinds of implements may not be so extreme.

FALL PLOWING

Never was the need more urgent than this year for good fall plowing. Last year the frost came early and prevented many from doing their usual fall plowing.

Start early this year and plow as much land as possible. Let the ground be exposed to the winters frosts and snow, it will help to improve the soil.

Time and time again, has it been proved that fall plowing will produce better crops. We are all busy and help is hard to secure, but some efforts should be made to do as much fall plowing as possible.

USE THE WAREHOUSES.

It may be well to again remind our readers about the storing of farm products in warehouses. Many farmers are not located so they can use the warehouse. They have proved a help, however, and should be used this year.

A ruling has been made that loans can be secured on farm crops stored in warehouses. In other words, a warehouse receipt for various farm products becomes collateral upon which the farmer may barrow from 50 to 75 per cent of the market price at his bank. If necessary the local bank can re-discount them at the Federal Reserve Bank. This should be a big help, if conditions are not favorable at harvest time for marketing the crops and one needs money to meet present obligations.

The price of wheat is now fixed by the government at $2.20 a bushel at Chicago, for No. 1 Northern spring wheat.

STANDARDIZATION MEANS BETTER MARKETS

With the idea of helping the farmers, the Federal Government is trying to bring about a standardization of the principals of farm products. Lack of standards is responsible for a poor market in many cases.

For instance, consider the question of butter. The Utah product is not known as a State product because we have no uniform color or grade. Individual firms have a standard but this does not help the general butter trade of the State.

When these standardizations have been definitely fixed, it will mean better markets for, not only our dairy products, but for all our agricultural crops.

RECLAIMING GOOD LAND.

We say, good land, because much of the water logged land was once the most fertile and productive. Many communities of our state seem to realize this and are redeeming and reclaiming this once good land.

It is no longer an experiment, and why do other districts hesitate about draining the waterlogged land?

Why do they allow once good land to be unproductive when a few dollars per acre would redeem it and often pay the cost back the first year.

This drainage work is not a one man affair, it is a district or community problem. Land owners should form a drainage district.

The cost per acre will vary from 12 to 20 dollars. What does this amount to when you consider the present prices for farm products?

It costs less per acre when large tracts are drained. To make your land productive and improve it, why not drain it? It is a good thing for the land, for the one who owns it, and, at the present time, a patriotic duty to help increase our food products.

WHEAT

Wheat, wheat, wheat, and yet more wheat is the slogan that should be adopted for the harvest of 1918. The country has been called on to produce more wheat than it has ever before produced; for our allies in battle need bread in order to carry on the war most effectively. The country's reserve of wheat has gradually been decreased by the increased demand made on it from Europe, and if we supply their needs we must increase our production. This can be done by better methods on the land that has ordinarily raised wheat and by adding new areas that have not previously raised crops. Utah is primarily a fall wheat area and if the 1918 crop is to be increased to meet the request of the government for increased production, work will have to be done at once. We do not advocate planting land this fall that has not been well prepared, but we believe that farmers should make arrangements to raise as much wheat as their conditions will justify. A little extra work in getting the land in good condition will pay much more with the present high price of wheat than it has ever paid before.

THE PRICE OF HOGS

The price of hogs today is somewhat higher than years ago.

The cost of feed is also much higher. When we consider that the price of hogs has advanced so much more than the cost of feed has done, we sometimes wonder how it is that farmers have been selling off their brood sows.

The top price for hogs at the Chicago market in December, 1878, was $2.75; top price at the same market in August, 1896, was $3.75, and as many of our readers know, hogs touched the twenty-cent mark during the month of August this year.

It is a serious mistake when we ever consider selling off our breeding stock. The man who has a good herd of hogs to market this fall will surely get a good price for them.

From the information that is being given out by the Government, it would seem that the number of hogs and other livestock has very materially been decreased in Europe, and the future price of hogs for the next few years will never be very low.

WHEAT PRICES

Now that the price of wheat has been fixed at $2.20 a bushel for the best grade on the Chicago market the farmer is assured a price that he has never known before. This is more than double the price that has usually prevailed even during the part of the year when the price was highest. This means that if farmers made expenses during previous years they will now make a very handsome profit. This profit will be most welcome since it will enable the farmer to add much needed improvements, to buy a few additional livestock, and in every way to put his business on a more paying basis.

There is little doubt that this high price will be a great stimulus to wheat production. With it the farmer can not afford to have many idle acres; nor can he allow weeds to grow. He should make every effort to put his entire farm into a condition of maximum production. In addition to filling his own pockets he will, by increasing his wheat production, render a distinct service to his country and her allies.

THEY APPRECIATE THE UTAH FARMER

During the past week we have had an unusal number of compliments about the kind of paper we are putting out. Many of our new readers are saying good things about us, because they like the kind of help we are giving them.

Suggestions that come in the season, when you need them. Many of our subscribers know what to do and how to do it, but like all of us need reminding of our duties and seasonable work.

We feel sure our efforts are appreciated and that is why we are working so hard to make the Utah Farmer what it ought to be.

Sometimes we think farmers do not read as much as they should. Often a helpful idea or suggestion can be found in our paper that is worth several times the price of a year's subscription. You do not get your money's worth if you fail to read every issue of the paper. Practical farmers and experts have some good suggestions in every issue.

Because our readers are pleased with the paper we are publishing, we will work all the more to make it still better.

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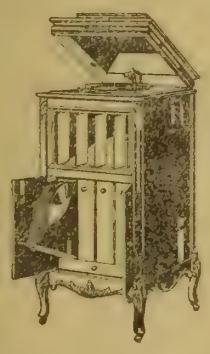

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"OLDER THAN THE STATE OF UTAH"

Don't select a different breed of sire every year. Select one breed and "grade up" your future stock with that breed. Don't breed to just any old sire have a reason for your selection.

UTAH FARM PROFITS

(Continued from page 3)

It must be remembered, however, that most of this increase in value, if not all of it, has been due to the labor and the pioneering of the farmers who took the undeveloped land, farmed it, built homes, and expended their capital on it. The first few years of development work is usually paid for only by the increase in the value of the farm. There are few sales of crops or livestock during the early development period, and unless the farm does increase in value, the farmers' efforts are not paid for.

As remuneration for expending capital on the farms in developing them, the farms must increase in value during the development period fast enough to pay interest on the increased capital, besides paying for the labor of the farmers with teams and machinery. The increase in the value of farm land may be due to one or all of three factors: 1, the labor of the farmers with their teams and machinery; 2, the increased amount of capital expended on the farms; and 3, the better development of the state in general, which increase in value is sometimes thought of as "unearned increment."

The value of all Utah farm land per acre increased from $9.75 in 1900 to $29.28 in 1910. This represents an increase in the value of farm land per acre of $19.53 or 200.3 per cent of $9.75. This increase is at the rate of about 20 per cent for each of the 10 years on $9.75, or 11.625 per cent compounded annually. This increase as shown here is abnormal due to the fact that in the census of 1910 some range land was omitted which was included in the census of 1900. This range land having a low value tended to increase the value per acre of the land included in the census of 1910. However, the figures are not so abnormal as to lose their significance. They show that investments in Utah farm lands in recent years have been very profitable, on the average, when considered from the point of view of increase in value per acre. It is likely that for a number of years to come Utah farm land will increase quite rapidly in value per acre. It may not increase as rapidly as it did from 1900 to 1910, but no doubt will assist in attracting many new farmers to the state as well as partly remunerating our present farmers for their efforts.

THE WORK FOR IDLE HANDS TO DO.

The annual hustle is on again around the ranches for enough men to take up the alfalfa harvest and attend to the cultivating that has to be done in this progressive growing season when the weeds like the anarchists want to take possession of everything. In the old days when there were not nearly so many people in the country we never experienced any difficulty in securing good men for all kinds of work, but somebody has shifted the scenes and things are different nowadays. In those early days the settlers were all live wires and progressive and knew how to work as well as to enjoy life. Now the second and third generations are enjoying the accumulations of the work of their ancestors and are taking things easy that they never stop to appreciate what the old folks did for them.

Somebody has said that the country is full of unemployed men looking in vain for a chance to work but this is not altogether true as every employing farmer in the country knows for himself. Anybody who is at all posted on the subject knows that the scarcity of labor is the greatest drawback to farming in these later years and the pay for ranch labor has been greatly increased in the last ten years while the efficiency of it all has run mightily down at the heel and it is so in all other lines of industrial enterprise. The product of our irrigated farms could be greatly increased if there were enough helpers to get the work done. We have seen men in gangs clamoring for work, but when a job was offered them they either made excuses or replied that their union affiliations would not permit them to accept any other kind of employment. We have known idle and presumably needy men refusing to work for $2 a day for one reason or another. We have also known men to loaf in gangs in towns, while hay and grain and fruit wasted in the fields. The farmers did their best with what machinery they could buy and then, when winter came, they were called on to donate money and provisions to provide for these same drones.

The coal operators would be very glad right now to place hundreds of half skilled men in their mines. Men who would be willing to do such work on the other hand resent the idea of going to the fields and here we are with very little help to carry us along in the great work of keeping the world from starving to death. The country is undergoing such a laborious metamorphosis in regard to all its industrial relations that these idle men feel perhaps that they can engage in a little watchful waiting to see how the cat is going to jump. In the meanwhile the poor will be piling up in greater numbers than ever before and who is to feed them? Is the Bible strictly correct when Moses says: "In the sweat of thy face shalt thou eat bread."—Field and Farm.

Get Your Silo---Now!

We can make immediate deliveries on the Tulsa Silo—the strongest, stiffest, most durable Silo on the market.

The Tulsa Silo is made to stand up in any kind of weather—made of one-inch lumber, and strongly reinforced throughout.

It is easily portable—absolutely air-tight, and economical to erect. Then too, it is priced within your means. Pro tect your grain during the bad weather—buy your Tulsa Silo Now.

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60 ton capacity	160
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Shows quality under every test.
STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.
S. P. 3

KEEPING IT SECRET

A woman asked her new maid to post several letters for her, and afterwards learned that two of the envelopes had not been addressed.

"Why did you mail them when you saw they were not addressed?" she questioned the maid.

"I thought you didn't want anyone to know who they were for," was the frank reply.

MOREGG
IT MAKES HENS LAY.
POULTRY FOOD

EGGS are bringing a very good price right now. Why not have more eggs? Feed "Moregg" — it brings profits.

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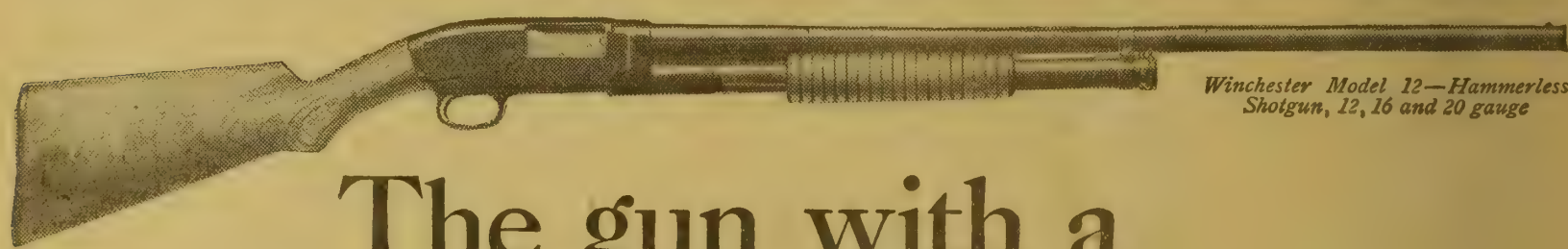
Ogden Utah



Winchester Model 12—Hammerless Shotgun, 12, 16 and 20 gauge

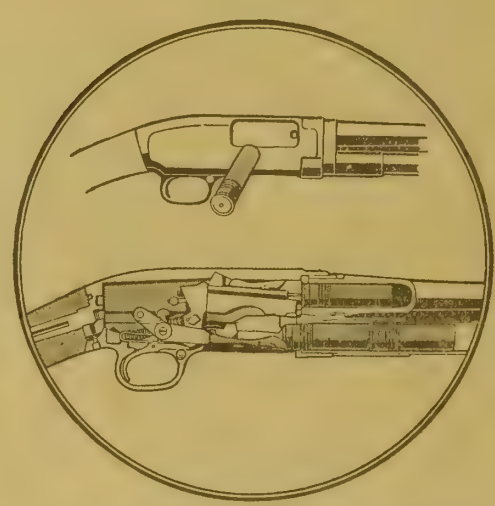
The gun with a dog's pointing instinct

A dog points by instinct. Its nose, body and tail come into line naturally—instantly. So with the hunter and his gun.

Armed with the right gun, he "points" it instinctively. If properly balanced, his gun comes up into line naturally, as easily as pointing a finger.

But if the gun is not right, if it has not been perfectly balanced in the shop, it won't work out well in practice, just as a dog, if not properly bred, will not work out well with its master in the field.

The Winchester Model 12 Repeater is a *thoroughbred* of shotguns. It has been classed by experts as "The Perfect Repeater."



Quick feeder, sure ejector. Throws empty shells to the side, out of your way

Its balance enables you to get onto fast flying birds instantly. Pointed right, it never fails to bring down the game.

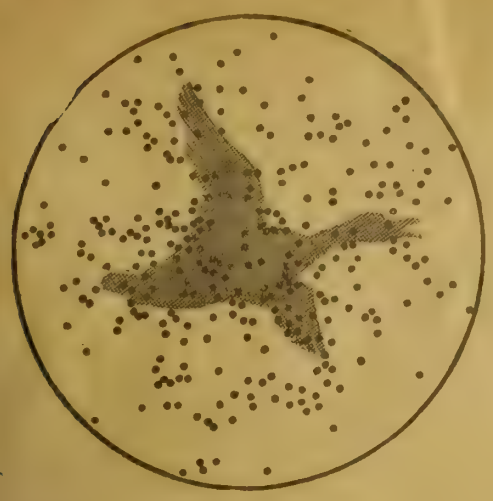
Fifty years of the best gun making traditions have produced in the Winchester Model 12 a gun of almost human instincts.

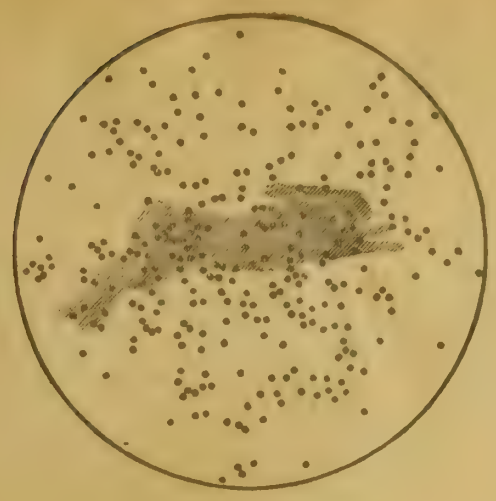
The right amount of choke for different loads has been worked out after exhaustive experiment. Result: a pattern that spreads out evenly—neither too scattered nor too bunched—and lands with lots of steam behind it.

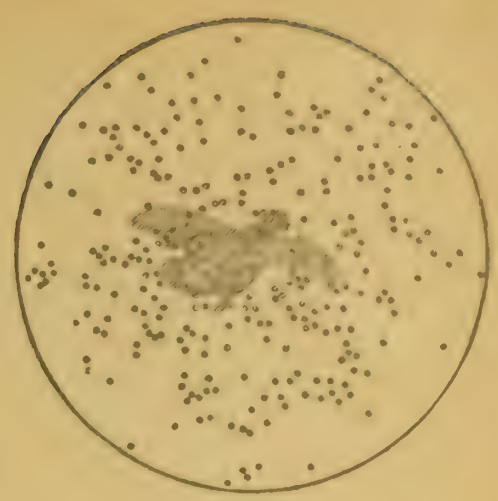
It is a triumph of guncraft. Nicely balanced, with its slim, graceful barrel, the Model 12 is a beautiful weapon, with a fascination about it that few sportsmen can resist.

WINCHESTER

World Standard Guns and Ammunition







Even spread, maximum penetration. Winchester shot pattern brings down the game.

The pattern that brings down the game

The remarkable game-getting pattern of the Winchester Model 12, shooting its own standard ammunition, is the result of infinite care taken in boring the barrel.

The barrel *is* the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard quality of the barrels on the highest and lowest priced Winchester guns. With Winchester, the barrel *is* the gun, and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel. The same high quality of Winchester barrel is found on every gun made by Winchester. The great volume of guns sold makes this policy possible.

The Winchester barrel

The barrel of the Winchester Model 12 has been scientifically bored to micrometer measurements for the pattern it is meant to make. The degree of choke exactly offsets the tendency of the shot to spread. Until its pattern proves up to Winchester standard, the gun cannot leave the factory. The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that with proper care will last a lifetime. The Nickel Steel construction preserves the original accuracy forever.

What (PW) means

This mark on the barrel means *Viewed and Proved Winchester.* This stamp stands for Winchester's guarantee of quality, with fifty years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times with excess loads for strength, smooth action and accuracy.

At every stage of Winchester manufacture, machine production is supplemented by human craftsmanship. It is a *test and adjustment process.*

It is this care in manufacturing that has produced in the Model 12 a gun of unsurpassed game-getting qualities and whose grace, balance, beauty of lines, and never failing performances in the field have earned it the title of "thoroughbred of shotguns"—*the gun with a dog's pointing instinct.*

For those who prefer a hammer action gun, we have made the Model 97. It is built on exactly the same lines as the Model 12, but with hammer action.

Write for details of Winchester shotguns, rifles and ammunition

The Winchester catalog is an encyclopedia on shotguns, rifles and ammunition. Every hunter should have one. It gives detailed specifications of the Model 12 and describes at length the principles on which every one of the world famous Winchester shotguns and rifles is built. Write today. We will mail you a copy free, postpaid.

WINCHESTER REPEATING ARMS CO.
Dept. D-1 New Haven, Conn.

Winchester Model 97 Hammer Shotgun

Take-down Repeating Shotgun. Made in 12 gauge, weight about 7¾ lbs.; in 16 gauge, weight about 7⅛ lbs. The favorite with shooters who prefer a slide forearm repeating gun with a hammer.

WINCHESTER

World Standard Guns and Ammunition

How to Use Your Sugar Beet Tops

There has been a number of questions sent in by our readers, asking how to use their beet tops to the best advantage.

The following letter will be of interest to our readers, because it tells what they are doing in Colorado. Greeley, Colorado, is one of the greatest cattle and sheep feeding sections in the United States.

Exceeding great care should be taken to put the beet tops into the silo free from dirt.

You will notice that Mr. Timothy says that an acre of heavy beet tops is equal to an acre of alfalfa. With the proper use of beet tops for silage, farmers will be able to reduce the amount of hay they have been consuming in the feeding of their stock, and will be able to do one of two things, feed more livestock on the farm, or be able to sell some hay.

Owing to the precipitation being much more in Utah during the winter months than in Colorado, the farmers might find it to their advantage to use a little straw before putting the manure on, to absorbe any juice that might run out of the manure and to keep it from running into the beet tops.

The farmers may find it more advantageous to make their silo of much smaller dimensions than is suggested in this letter.

We suggest that the most practical size of silo for our Utah farmers is the one recommended by Mr. J. W. Jones in our issue of August 25th—eight or ten feet wide, four or five feet in depth, and the length will be determined by the amount of beet tops you want to silo.

Here is the letter, which Mr. Hyrum Timothy, Agricultural Superintendent for the Great Western Sugar Company, at Greeley, Colorado, writes to Mr. Austin:

My Dear Mr. Austin:

I beg leave to acknowledge receipt of your letter of August 15th in which you refer to the silo and the manner of siloing beet tops by our farmers.

In answer will say that the general way of siloing beet tops is by digging a trench in the ground. It matters not whether the trench is long or round as long as you keep the air out of your beet tops. You should arrange your excavation in such a shape so you can drive a team in the silo and over the beet tops. You drive over the tops for the purpose of packing them down so as to exclude the air and should your beet tops get one-third or half dry before siloing you should use some means of packing them down. We generally use horses by leading them around over the beet tops. This is a cheap way as one man can lead a good many horses and the tops will soon pack sufficiently to exclude the air.

Mr. Geo. E. Bedford of Greeley dug a silo in the ground 7 feet deep, 33 feet wide by 100 feet long. He put in this silo 100 acres of beet tops estimated at 800 tons. The tops were a heavy crop and we estimated that the silo was not more than two-thirds full. After the tops were all siloed we hauled three or four loads of heavy manure and scattered over the tops so as to keep the air out. This is the cheapest way to silo tops.

Another way to silo tops is to silo in regularly contsructed silos, built of cement or wood. Should you wish to silo beet tops in such silos it is necessary to cut the tops up as the ordinary blower will not blow whole tops to the top of your silo. They could be hoisted to the top of the silo without cutting them and they would make splendid feed. But if you cut the tops up so a blower would handle them there is so much moisture in them that we found it very difficult for the silo to hold the silage, as there was so much moisture.

The way to silo beet tops in large cement or wood silos is to mix about one-fourth to one-third dry hay; this depends on how dry the hay is and do not cut the tops and hay fine, leave them as course as possible. If you have green corn, you should mix your corn and tops fifty-fifty, and they will cure very nicely. But, should you cut yours tops up and silo them in ordinary cement or wood silos, there is so much moisture th t the weight is very apt to spring your silo, and you will lose all your juice, and part of the feeding value. There should be something mixed with the tops if you silo them in cement or wood silos to absorb part of the moisture. Some use straw which does very nicely.

Mr. Austin, I will say that I think that the tops siloed is the cheapest feed that we have to feed cattle or sheep. It is a poor man's feed and a feed that every farmer is able to have on his own farm.

Following is about what the feeders did last winter. They paid $3.50 per acre for tops that went seven tons per acre, making 50c per ton for tops in the field. The cost of hauling to silo depends on the distance, say ordinarily $1.00 per ton. They can be tramped or packed down for 10c per ton. Our farmers figure that one ton of siloed beet tops is worth one-half ton of hay. Bedford says that by feeding twenty to thirty pounds of siloed beet tops per day to steers that the steers will only eat one-half as much hay, so if you reduce your hay fifty per cent at $14.00 per ton, as at present, and increase the feeding value of all your feed by a ration of siloed beet tops you can readily see that siloed beet tops is worth half as much as hay or $7.00 per ton, and they, at the present price, cost only about $1.60. Estimating that it costs $1.00 per ton to haul them to silo (Mr. Bedford hauled about 800 tons for 50c per ton), and 50c per ton in the field, 10c per ton for tramping by leading horses on the tops, the total cost per ton for beet top silage would be $1.10. We figure that an average acre of beet tops well taken care of by siloing when green is worth as much for feed to fatten cattle as an average acre of alfalfa, as beet top silage is worth one-half as much as alfalfa hay per ton and we get twice the tons of green tops as we get of cured alfalfa hay. This is a feed that will give good gains on cattle without grain and with a long feed such as farmers should have in order to accumulate manure so as to keep his farm in a high state of production.

I will say in conclusion that there are not many of our farmers as yet that are siloing beet tops, as a great many of our growers are tenants, yes sixty per cent are tenants, and beet tops are getting to be worth so much that they are considered a part of the crop and are sold to feeders for fall and winter pasture. Some farmers haul them to the yard and feed them in racks like hay. By letting the tops stay in the field scattered over the field and allowed to dry, you lose 75% of the feeding value of the tops. I will say that you do not, in my opinion, lose but very little of the weight of tops by siloing and by siloing the tops they gain in value for feeding purposes three to one.

I hope your farmers will soon adopt such methods as are best to keep the soil in a high state of cultivation, and by this means enjoy two crops per year, one farming and one feeding.

Wishing you best success, I am

Yours very truly,

H. Timothy, Agri. Supt.

———o———

Salt Lake City, Utah, Sept. 5, 1917.

The question of farmers getting livestock to feed upon their land was discussed last winter at the various meetings of the farmers and encouraged. However, since that time the hard winter and backward spring killed so many of the old sheep and a very large percentage of the lambs that investigation shows that it is impossible to secure lambs for feeding purposes at a price that would justify, that is, to any extent. The Sugar Company had an experienced sheep man look into this matter with a view of assisting the farmers this summer. He reports that the conditions are very unfavorable for the securing of lambs for feeding purposes, so far as he is able to discover; however, should we be successful in locating any at a price and in such quantities that would justify purchasing we shall be glad to advise the growers through the columns of the UTAH FARMER. Some of the growers may be able to find some cattle and sheep to feed upon their farms.

Mark Austin,
Gen. Agr. Supt. Utah-Idaho Sugar Co.

We Want More
Sweet Milk
Sweet Cream
Churning Cream
Write us for prices
Nelson-Ricks Creamery Co.
359 Eccles Ave Salt Lake City

THE MODERN METHOD of
IRRIGATING ALFALFA

The indications are that all prices will continue to advance, and it will be cheaper to install your irrigation system now than it will be later on. Do not wait until next year to figure out what you would have made if you had acted now.

In spite of the high prices and shortage of all manufacturing materials, we have a full supply of all Irrigation Appliances on hand at convenient distributing points all over the Pacific Coast, and are prepared to make prompt deliveries throughout the season. Don't delay. Time is money. Write today.

KELLAR- THOMASON CO.,
1230 East 28th St., Los Angeles, Cal.
"Originators of the Valve System of Irrigation"

Bales at Highest Speed—Lowest Cost

UNBEATABLE records for baling greatest amount of hay in the shortest amount of time and at lowest expense for power and crew being made constantly with

The Admiral Motor Hay Press—The Hay Press With the Hustle

Has the hurry built right into it. Simple as A B C. Free from needless parts. Smooth running—easy on the engine that runs it. Engine absolutely dependable, thoroughly tested for all conditions of field work. Plunger operates on the power which comes through a long lever working against the sharp grip behind the plunger head. Result, each stroke is powerful, with no back kick. Many exclusive features. A big money maker for the man who uses one. J. N. Inman & Sons, (Haybalers), Independence, Mo., say: "Bales 90 80-lb. bales in 55 minutes from windrow, and 70 70-lb. bales in 50 minutes from stack. Have made big money." Hundreds have had the same experience.

FREE—Big Hay Press Book, "Leverage Does the Work." Postal today brings you copy by return mail.

Make Big Money Baling With an Admiral

Admiral Hay Press Co., Box 55, Kansas City, Mo.

SOLD BY UTAH IMPLEMENT-VEHICLE CO., SALT LAKE.

Save the Grain

Don't let rats, mice, bugs and rain ruin the Nation's bread. Your country needs the food—you need the money. Be prepared to hold the crop if conditions warrant it.

BUCKEYE GRAIN BINS

$60 and up

200 TO 5,000 BUSHELS

Saves insurance cost; loss from rain and snow; loss from mold; loss from thieves.

Write Today—Our Stock Is Limited

There is nothing of the "tin-can" about the Buckeye. It's the "CRIB WITH THE STEEL RIB." Built of heavy galvanized sheet steel, double braced and tight; will last for many years.

THE PIERCE COMPANY
[illegible] Bldg., Kansas City, Mo.

Tested and Accepted

Stockmen throughout the West are adopting Sunripe Stock Feed as the economical and profitable feed for their stock.

SUNRIPE

Stock Feed

a scientifically balanced ration of grain and grain products, and cotton seed meal.

Send for booklet "Feeding for Results." It's FREE.

Utah Cereal Food Co.

Ogden, Utah.

Preserved Fruit

is nourishing and energizing. And it's mighty palatable, too, when winter bares the orchards and berry patches. NOW is the time to fill your jars, glasses, bottles and crocks. Be sure you use

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

made from sugar beets raised by Utah and Idaho farmers.

At all dealers in 10, 25, 50 and 100 pound bags. "Buy it by the Bag."

Made by

UTAH-IDAHO SUGAR COMPANY.

SEED TREATMENT WILL SAVE MILLIONS OF BUSHELS OF WHEAT AND RYE

The Case for Seed Treatment

Over 3½ per cent of the wheat crop and 1 per cent of the rye crop is lost through smut.

Seed treatment with formaldehyde solution is practically 100 per cent efficient except in a few sections where the soil is badly polluted with smut spores.

The formaldehyde treatment costs less than 5 cents per acre for materials and labor. To this must be added in extreme cases the cost of 20 per cent of the seed grain, the germinating power of which may be destroyed because of seed injury.

In every case the entire cost of the treatment together with possible seed injury is much less than the value of the increased yield which it assures.

Now that, because of the world shortage, every bushel of wheat and rye counts for more than ever before, the safeguarding of the next crops of these grains against disease by the treatment of seed before planting is of greatest importance. It is estimated that the average annual loss due to the smuts of wheat and rye amounts approximately to 27,500,000 bushels. This is equal to about 3½ per cent of the entire yearly wheat crop and is regarded as a conservative estimate, since only smutted heads actually lost are considered. The increased number of heads which healthy plants would have thrown out were not taken into account. The loss to the billion-bushel wheat crop, harvested next year would, at 3½ per cent, amount to 35,000,000 bushels. With wheat selling at $2 a bushel this would amount to an exceedingly high tax on the farmers of the country.

Treatment of Seed.

Treatment of wheat against stinking smut is fairly easy, not expensive, and fully 95 per cent effective. The efficiency of the treatment is, in fact, practically 100 per cent in most of the wheat-growing regions. The percentage of efficiency for the country as a whole, however, is reduced by the fact that in large regions in the Pacific Northwest the soil is polluted with smut germs to such an extent that the effects of seed treatment are negatived. Seed treatment costs not to exceed 5 cents an acre for materials and labor. To this cost, however, must be added the cost of grain, the germinating power of which may be destroyed by the treatment. This amounts at the most to 20 per cent. In every case the value of the wheat saved by treatment would amount to several times the cost of treatment.

Statistics show that the average annual loss of rye from smut is about 1 per cent—considerably less than the loss of wheat. It is well worth while, however, to treat rye seed also.

Method of Treating Seed.

Several methods of treating seed for the destruction of smut spores are in use, but the best, it is believed, is the formaldehyde treatment. The grain should first be cleaned thoroughly with a fanning mill so that smut balls, shriveled grain, chaff, etc., will be removed. After the grain is clean it may be spread on a floor or a tarpaulin in a layer or pile several inches thick and sprinkled with a solution of formaldehyde made by mixing 1 pound of commercial formaldehyde with 45 gallons of water. An ordinary sprinkling can or a spraying machine is used and the grain is shoveled over and over until every kernel is wet. The grain is then placed in a pile and covered with sacks, blankets, or a tarpaulin for 2 hours or over night. It is then dried sufficiently to be run through the drill, after which it may be sown. If the grain is not passed through a fanning mill it should be placed in a vat or tank of the formaldehyde solution instead of being sprinkled. The smut balls will rise to the surface and may be skimmed off.

If the grain is not to be planted immediately, it must be dried sufficiently to prevent spoiling when placed in bins. If planted while damp and swollen, more grain by measure must be used to allow for the expansion.

Our Service

And What It Means To You

YOU ARE RUSHED FOR TIME—
A MACHINE PART BREAKS—
AND THEN—

Every Hour of Delay Counts. Your Crop Is In Peril. How Soon Can You Get Repairs?

If you bought your farm implements from pictures in a book, your distress can easily be pictured, when the rush of work is on and an important machine part breaks.

You can see the repair parts, too, in pictures, but you can't see the repairs themselves—not for days—days when you can almost feel real money slipping from you.

We sell implements that are built in every part to stand the strains of operation. They have made their great name in the world because of their quality. Yet, sometimes in the rush of work, when men and machines are overtaxed, even our implements may need repairs.

Our service to you takes care of these accidents—quickly. We carry repairs in stock—right here among you. Repairs not carried, we get in a jiffy. Getting repairs to you in a hurry is one of the special features that make our service especially profitable to you.

If one of our implements should happen to break, phone us promptly, just as you would phone your doctor when a bodily injury occurs. You will find that our repair service saves you dollars when time means dollars.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

THE FEDERAL LAND BANK OF BERKELEY

George Thomas.

Numerous inquiries have reached me here at Berkeley in regard to supposed interviews given by me and also about the ability of the Federal Land Bank of Berkeley to furnish money to the farmers of Utah. As the inquiries come mainly from farmers I avail myself the generous offer of the Utah Farmer to answer them all at once.

I gave only one interview and I was not responsible for some of the important statements in that one as it appeared. So a large part of the reputed interviews are fictitious and many of the statements in them absurd. For example where I am reported as working on a new rural credit system and others like it. It will be time enough to consider a new system when this one has been tried out and proven a failure.

In regard to the ability of the bank to furnish money I cannot answer that question with any degree of accuracy therefore I prefer not to answer it at all. It depends in the main, upon the new officials and also upon the sale of the bonds of the bank. The new officials should be given a fair chance to show what kind of a machine they can build to do the work. The applications in the bank now amount to about twelve million dollars. If the bank loans $250,000.00 a month it will take four years to comply the present requests; if 500,000.00 two years, and if a million dollars, one year. Some will get their money earlier, some later. As to just how long the wait will be or when the money will come, I do not think anyone can say. The significant point for the farmer to bear in mind is that he should not count upon the money at any certain time. He should arrange his business affairs so far as he can, to enjoy the benefits of the act when it comes to him, but not to endanger his property by taking any chance of foreclosure in case it does not come to him as early as he expects.

—o—

DO YOU KNOW THAT—

The cost of a breakfast of grapefruit converted into oatmeal with cream and sugar would sustain life ten times as long.

Two boiled eggs for breakfast do you more good than twelve times their cost invested in strawberries.

The price of an oyster cocktail invested in codfish buys twenty times as much body food.

One glass of buttermilk contains more food than 5 glasses of beer.

Mushrooms at 60 cents the portion would buy 10 loaves of bread with forty times the nutriment.

We would save not only cash but health if we ate less.

If you put the 65 cents you would pay for a modest amount of asparagus tips into baked beans and bacon you treat yourself to twenty-five times the life-sustaining necessity.

A dog would starve to death on peach melbas at 30 cents each.—Exchange.

Hill-Climbing "Pep"

Does your car take to hill-climbing as readily now as it did when you bought it? Can you climb a fairly steep grade on "high"? Before it starts to "fall off"; be sure you are using the correct lubricant. Test

VICO Motor Oil

a few times, and see how it reduces the "load" of your car and how it reduces the general cost of operation. This oil may be had in three weights—light, medium, heavy. "Every drop counts."

Utah Oil Refining Co.

SALT LAKE CITY, UTAH.

HOME

THE STEAM CANNER

By Gertrude McCheyne State Home Demonstration Leader.

We offer the following suggestions for the benefit of communities and persons using the steam canner:

Filling the Canner: Place about two inches of water in the canner, and have it nearly to boiling point; the water should not come above the crate holding the jars. The jars will be warm since boiling water is used to fill them. Clamp the canner firmly and place over heat. Steam should generate at the rate of five minutes to five pounds pressure. If for any reason the stove is not in good condition and there is delay in getting up pressure, reduce the time of processing. If the water was boiling, cooking begins as soon as the cooker is clamped down.

To prevent escape of water and juice: Screw cover of bottles almost tight, allowing about an eighth of an inch to turn after the bottles are removed from canner. Keep the pressure constant. When it raises and lowers, a vacuum is created, causing the liquid to condense and escape as steam. When the processing is finished, remove cooker from heat, and allow pointer to drop to zero without opening the stop cock or touching the weight.

Jelly Making: Apple jelly made under steam pressure as compared with open kettle method.

First test, Steam Pressure: One gallon Red Astracan apples, two quarts of water, brought to boiling point, canner closed, pressure raised to ten pounds, lowered at once. 10 2-3 cups of juice, 10½ glasses of jelly.

Second test, Steam Pressure: Same method and amounts of material used Final result, 12 glasses of jelly.

Open Kettle Method: Same amount of material used, cooked to pieces. Kettle fitted tightly. 7 cups of juice, 7 cups of jelly.

Do not put the canner away after the season for vegetables and fruits is over, but use it in the bottling of meats, and the making and bottling of soup stocks. When there is some public function at which food in quantity is to be served, use the canner. The food may be placed in a dish and set in the crate or if a covered receptacle is used, the crate may be removed and the pan set in the wtaer. Do not use more than two inches of water, and have it boiling hot.

Do not forget that in using any new article it takes some practice to get accustomed to handling it. This steam canner is a thoroughly standard article and the use of one is an important step in economical conservation, since it saves food, time, labor, and gives surer results.

COMMUNITY CANNING IN THE COUNTRY

Amy L. Merrill.

Morgan County has started a splendid work in Community Canning and Conservation. The Central Committee has worked hard to get it generally understood. The county Commissioners have appropriated money to buy the bottles and the women are to provide the material and do the work to have on hand for winter a large quantity of available food for the community. The work is so new that some of the communities hardly understood the proposition, but one little town certainly got the right understanding.

While visiting Morgan County recently as Home Demonstrator, I spent one day in each of the wards. The special project I was working on was canning. Some wards did entirely individual work but when I came to Milton they had their bottles from the County and plenty of vegetables, in fact, more than we could possibly handle for the day. The Central Committee had asked for two dozen quarts of beans, two dozen quarts of beets, etc., enough to make up ten dozen quarts of fruit and vegetables besides five dozen glasses of jelly. On that day, however, we canned twenty quarts of beets and thirty-two quarts of beans for the community, besides seven quarts of peas for individuals.

In doing community work it is best to get the materials together early so that no time is wasted waiting around. Have a good stove with plenty of fuel and quantities of water near at hand with much hot water. The work when started with energy early in the day accomplishes much more than the rush when time to leave.

AN EXCEPTIONAL CELLAR THAT SHOULD BE THE RULE

Amy L. Merril..

Why leave all the nice things to be said after one has finished life's sojourn upon the earth? Why not tell of a living example that should be heralded abroad as an ideal winter's supply stored during the season of plenty?

During my recent visit to Morgan County, as Home Demonstrator, I had the rare privilege of visiting Mrs. Charles Porter of Porterville, the mother of two of the Utah Agricultural College students and teachers. Mrs. Porter took me to her cellar, which is not very different from hundreds of Utah cellars except in what it contained. She took a little key from her pocket and opened the cupboard door; I did not blame her for having it locked as the cellar was not locked itself. She kept it as something choice and valuable as most people do their jewels—jewels indeed did that cellar contain!

Many bottles were left over from last year. Arrayed on the shelves were bottles of every vegetable that grows in her garden. There were the beans, peas, turnips, and carrots; there were beets, corn, squash, parsnips and cauliflower; there were jellies and preserves, fruits of all kinds and pickles, and I doubt not but that she had potato somewhere just to see how it would can. Though she had no meat at that particular time, she does later put up her chickens, and when killing time comes she cans fresh pork. When they get a large piece of beef, Mrs. Porter cans most of that, and when she gets an extra mess of trout she fries the trout, then put it in the bottles and cans it for the winter.

Imagine having a quart of squash ready to make squash pies any time of the year you would care for them! Think of having a chicken dinner for unexpected company fifteen or thirty minutes after they arrive! How nice it would be on the farm to have fresh pork every once in a while instead of such quantities of cured meat!

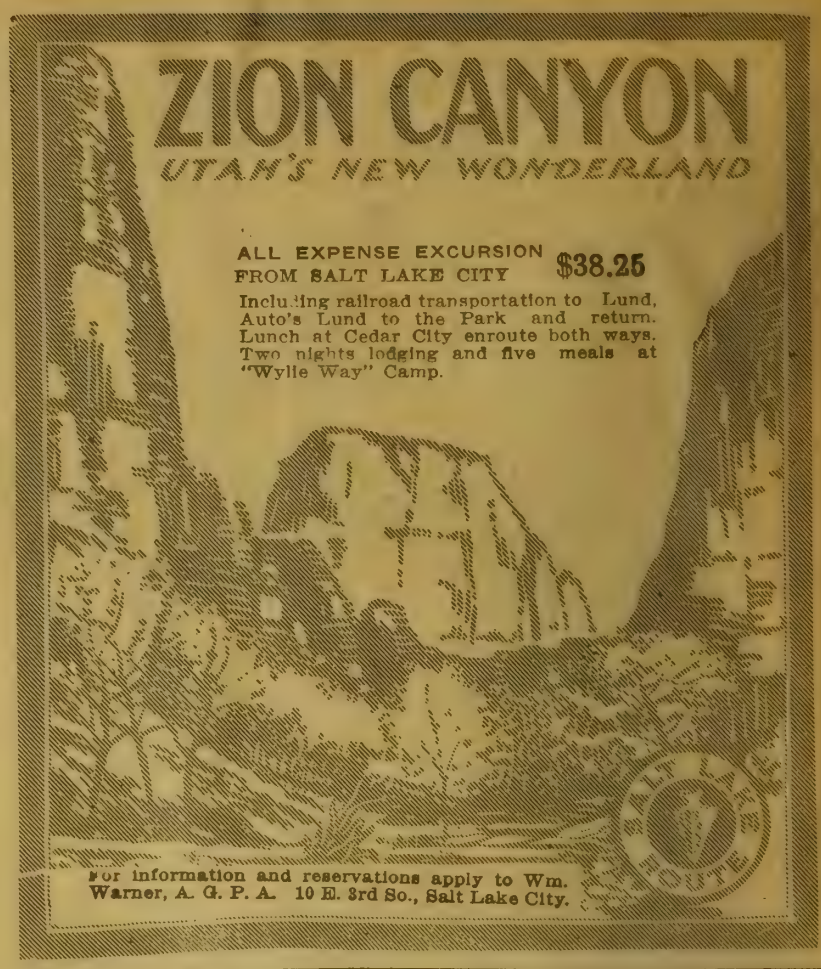
During this year of uncertainties can we not take advantage of every article of food and save it for use for the future? Can we not all take hint from this splendid store and increase our own where it is possible? It is a splendid example!

WAYS OF PREPARING CORN

By Gertrude M. McCheyne.

Having been asked to conserve wheat, we naturally turn to the great American cereal, corn. As a nutritional substitute we find that it does not supply certain of the proteins in quantity to make it a complete substitute. But since it is used in a mixed diet and is usually accompanied with eggs, milk and meat, we do not need to consider this as a problem.

There are many delicious ways of preparing corn. Steamed or boiled on the cob is one of the most common. Most people boil it too long. If potatoes are being boiled, the cobs may be placed on top and allowed to steam for about ten minutes. A Southern method is to cut the kernels from half dozen ears and turn into the browned fat from bacon. Add half a cup of water, cover and cook slowly till tender. Corn oysters are made by adding a plateful of corn to a stiff batter and dropping small portions into deep fat. Corn pancakes are a change as a breakfast dish. Make a pancake batter and add enough corn to stiffen. This mixture may be baked or fried. Corn custard pudding makes a nutritious luncheon dish. Make an ordinary custard mixture and add 1½ cupfuls of cooked corn. Bake in a moderate oven. A soup which will serve as the main dish of a meal, is made by cooking a small onion in 1 tablespoonful of butter or other fat, and adding 1 tablespoonful of flour and two cups of skim milk. Allow it to come to scalding heat. Add 1½ cups of cooked corn. Corn chowder is made as follows: Fry a 1½ inch cube of salt pork and 1 sliced onion; strain into stewpan. Parboil 4 cups of cubed potatoes, drain and add to fat with two cups of boiling water. Cook till potatoes are soft; add 2 cups cooked corn and 4 cups scalded milk. Tomatoes and corn, using one third tomatoes stewed and seasoned. Cut corn from cob cooking till nearly dry, mix and serve. Corn meat pie is made of left over corn and minced meat mixed, and seasoned and moistened with water or stock. Put in a baking dish and cover with mashed potatoes, which may be browned in top of oven. Eggs, corn and tomatoes may be combined in a stew. Season and cook tomatoes thoroughly, add to a quart of stewed tomato a cup of cooked corn and beat in two to three eggs, removing from direct heat. Serve with toast.



When you answer an advertisement always mention the Utah Farmer.

COMPOSITION OF THE EDIBLE PORTION OF TYPICAL FOODS.

Food Materials	per cent. Water	per cent. Protein	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Calories per lb.
Beef fat, without visible	73.8	22.1	2.9	.....	1.2	870
Ham, smoked, lean	53.5	20.2	20.8	.....	5.5	1245
Bacon, smoked	20.2	9.9	64.8	.....	5.1	2930
Salmon	64.6	21.2	12.8	.....	1.4	950
Eggs	73.7	14.8	10.5	.....	1.0	720
Milk	87.0	3.3	4.0	5.0	0.7	325
Butter	11.0	1.0	85.0	.....	3.0	3605
Oatmeal	7.3	16.1	7.2	67.5	1.9	1860
Rice	12.3	8.0	0.3	79.0	0.4	1630
Wheat, flour	11.9	13.3	1.5	72.7	0.6	1665
Bread, white	35.3	9.2	1.3	53.1	1.1	1215
Asparagus	94.0	1.8	0.2	3.3	0.7	105
Beans	12.6	22.5	1.8	59.6	3.5	.....
Peas	74.6	7.0	0.5	16.9	....	1023
Beans, string	89.2	2.3	0.3	7.4	0.8	195
Beets	87.5	1.6	0.1	9.7	1.1	215
Cabbage	91.5	1.6	0.3	5.6	1.0	145
Carrots	88.2	1.1	0.4	9.3	1.0	210
Celery	94.5	1.1	0.1	3.3	1.0	85
Corn, green	75.4	3.1	1.1	19.7	0.7	470
Lettuce	94.7	1.2	0.3	2.9	0.9	100
Potatoes	78.3	2.2	0.1	18.4	1.0	385
Spinach	92.3	2.1	0.3	3.2	2.1	1101
Tomatoes	94.3	0.9	0.4	3.9	0.5	105
Turnips	89.6	1.3	0.2	8.1	0.8	185
Apples	84.6	0.4	0.5	14.2	0.3	290
Bananas	75.3	1.3	0.6	22.0	0.8	460
Currants, dried	17.2	2.4	1.1	74.2	4.5	1495
Oranges	86.9	0.8	0.2	11.6	0.5	240
Peaches	89.4	0.7	0.1	9.4	0.4	190
Pineapple	89.3	0.4	0.3	9.7	0.3	715
Plums	78.4	1.0	.....	20.1	0.5	395
Prunes, dried	22.3	2.1	.....	73.3	2.3	370
Raisins	14.6	2.6	3.3	76.1	3.4	.....
Strawberries	90.4	1.0	0.6	7.4	0.6	180

OW TO RENOVATE AND CLEAN

Some helpful suggestions by the epartment of Domestic Arts Utah gricultural College.

Renovating Straw Hats.

Natural colored Straw.—Hats of lan, leghorn, etc., in natural color ay be cleaned with a paste of the ice of one lemon and two tableoonfuls of sulpher. Rub the hat oroughly with this paste and when y brush off the powder.

White Straw.—White straw hats inuding panamas may be cleaned with weak solution of oxalic acid water. ssolve a tablespoon of axalic acid in e pint of water. Scrub the hat ickly with the solution using a stiff ush. (Do not put the hands in the id). After the hat has been cleaned, ice the acid off by going over the t with a cloth wet in clear water. oid getting the straw too wet as this uses the hat to lose its shape. When arly dry the hat may be pressed htly under a damp cloth. Prepared eaners for white straw may be purased at the drug stores. Panamas ay also be cleand by washing in soap d water.

Colored Straws—Colored straws if t faded may, be freshened by washg with a sponge wet in wood alcohol. is method is very good for black aws. Wood alcohol, being poisonous, ould be kept away from children.

To renew faded straw hats.—Badly led or soiled snapes can be dyed the me or a darker shade with one of e several reliable hat dyes for sale drug stores. When carefully applied e hat may be made to look like new.

To Stiffen Straw.—Shapes which ve lost their stiffness may be stiffen by pressing lightly under a damp oth. Never press directly on any aw; have a cloth between the straw d the iron.

To Change the Shape.—To change e shape of a straw hat dampen the t and while soft and pliable, bend o desired shape. Catch up brim ere desired with strong thread. ave until dry.

To make a brim droop, hold the hat and press a bit of the under brim a time. The movement should be leways from the crown outward.

How to Freshen Velvet.

Velvet may be freshened and inkles removed by steaming. To eam, put a wet cloth over a hot iron d draw the velvet back and forth rough the steam, having the wrong de of the velvet next to cloth. Brush th a soft bristle brush to raise the le.

Spots may be removed from velvet d plush by sponging with chloroform ever use in a closed room). Chlororm will often restore color to faded aterials.

Cleaning Felt Hats.

Felt hats of any color may be cleaned with sandpaper. Cover a small wooden block with No. 00 sandpaper and use the block as a brush. Begin at center top of hat and proceed in a circular direction until the whole hat has been cleaned. Remove the sandpaper, cover the block with velvet and go over the hat as before. The velvet will smooth down the felt. If the velvet block is rubbed on a hot iron and then on a block of paraffin wax it will be still more effective.

White felts may be cleaned by rubbing with French chalk, powdered borax, and cornmeal.

How to Clean Lace.

Silk laces should be dry cleaned or washed in gasoline. Cotton laces can be washed in soap and water. Fill a fruit jar half full of warm soap suds or borax water. Put lace in jar and fasten top securely. Shake well until lace is thoroughly washed. Refill jar with rinse water and rinse by shaking the lace in the jar. Take out the lace and spread it on a dry cloth pulling the scallops into shape. When dry, the lace may be pressed lightly. In washing any kind of lace the main point to remember is to avoid rubbing.

To Freshen Artificial Flowers.

Soiled flowers become freshened and stiffened by shaking them over a steaming cloth. Faded flowers can be dipped into a tinting preparation or they can be touched up with a small paint brush after which they usually look very new. To make the tinting preparation, disolve oil paint in gasoline. The oil paint can be bought in small tubes in a great variety of colors. Such things as chiffons, thin silks, malines and feathers can also be tinted in gasoline and oil paint. Tinting is different from dyeing, and only light shades can be produced—red paint tinting pink, etc. Tinting should never be done near a fire or in a closed room. Always test a sample before putting in the article to be colored.

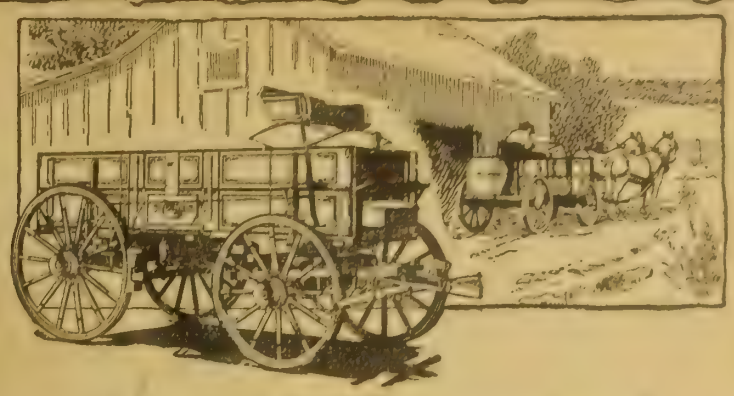
HOW TO KILL MOSQUITOES

Mosquito time is here; Gird on your swatting armor and go forth. One moment, however, before you go —"the female is more deadly than the male."

"Among mosquitoes the members of the 'fair' sex are fierce blood suckers who inject an irritating poison into our skins, and they may accompany the dose of toxin with a few fever germs. The males lead a comparatively tame existence, subsisting on the juices of plants and fruits." So says a member of the University of Wisconsin biology department.

"The female mosquito gorges herself with blood," he continues, "in order that the eggs may have abundant nourishment. She deposists her little egg raft on the surface of quiet water during the night and it floats there until the larvae hatch. The larvae are the 'wigglers' or "wiggletails' which are seen in ponds and rain water barrels the world over. Though mosquito larvae always develop in water, they must breathe air and frequently come to the surface. After a few days the larva sheds its skin and becomes a bigheaded pupa which rests at the surface until it splits up the back to allow the adult mosquito to emerge. This emerging business is a delicate operation which cannot be carried out successfully during windy weather. That is one reason why there are more mosquitoes on quiet evenings.

"The best way to get rid of mosquitoes is to destroy their breeding places, for the adults never fly far. This not only means draining swamps and filling in ponds, but gathering up tomato cans, putting netting over horse troughs and rain water barrels, and watching the eave troughs. If it is impossible to get rid of standing water near your premises, oil placed on ponds will kill the larvae when they come up to breathe. Kerosene or any light fuel oil will serve for this purpose. About one ounce of oil will cover fifteen square feet. Applications should be made once a week."



Capacity Guaranteed

TELL the dealer you want a wagon that the manufacturer will guarantee to carry your biggest load. If he is up to date, he will show you a **Weber** or **Columbus** wagon with its capacity stenciled in plain figures on the rear bolster. That is the new idea for protecting you in your purchase of a wagon.

When you bought by skein size, you could not be sure that you were buying the most economical wagon. Now you can be sure. Every **Weber** and **Columbus** wagon that leaves the factory is guaranteed by the manufacturer to carry a known load over the roads that you have to travel.

Nor is that all you get when you buy a **Weber** or **Columbus** wagon. The folding end gate and link end rods save you a world of time. The fifth wheel, which only **Weber** and **Columbus** wagons have, makes your wagon run easier and last longer. Write us for complete information about these wagons. You'll be surprised at the number of good features they have.

International Harvester Company of America
(Incorporated)

Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Parowax

No Chance For Spoiling

Fruits, preserves and jellies simply cannot spoil if you seal the jars and glasses with Parowax.

When the cap is on, just dip the top of the jar in Parowax. To seal jelly pour Parowax in the top of the glass. What could be easier?

Parowax keeps out air. Prevents fermentation and mould.

Parowax is guaranteed under the Pure Food and Drugs Act. In handy one pound packages from all grocers and druggists.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)

Denver Pueblo
Albuquerque Boise
Cheyenne Butte
Salt Lake City

Are You Ambitious?

IF you have the right stuff in you, I will make you a practical, skilled auto-mechanic able to command a salary of

$5 to $15 a Day.

There never was an opportunity like the present. The war is stripping the country of skilled mechanics. The demand is increasing daily for high-class men. The right kind can get almost any salary. In my school you learn and become expert by actually doing the work. You do all kinds of machine shop repair work—forging, vulcanizing, ring fitting, everything. You have special training in magneto, storage battery, self starter, electrical equipment and every kind of repair and operating work. Nothing is overlooked. If you have it in you, I will turn you out a skilled, high-class auto-mechanic ready to drive and repair anything from a hospital ambulence to a farm tractor.

Send for my Big Free Catalog with full information today. Make more money and feel that you are a factor in the big things now doing. Don't delay for that means lost opportunity and lost money. The men are needed today.

E. J. SWEENEY, President,
SWEENEY AUTOMOBILE AND TRACTOR SCHOOL,
1211E. 15th ST., KANSAS CITY, MO.

WORKING UP BUSINESS

A bright-eyed little boy in a sailor suit saluted the occupants of a passing motor car so quaintly that they stopped to give him sixpence.

"You're very polite, little fellow," the lady motorist said. "Do you salute all the strangers who pass in the same way?"

"No, no, ma'am, only motorists," the boy stammered, fingering his sixpense nervously. "Father says I've to be polite to them, because motor cars bring him trade."

The lady seemed disappointed.

"What is your father's trade, my little man? Does he repair motor cars?

"No, ma'am, he's an undertaker," was the little fellow's response.

"Doesn't it strike you as disgraceful the way young women are displaying their ankles?"

"Ankles, granny! They're going out —now it's knees,"—Life.

The Modern State Fair

Written for the Man Who Will Read.

When we enter upon the discussion of Fairs, we are referring to them in their modern sense. Fairs are spoken of in the history of southern, eastern and central Europe, as places where products of all kinds were brought together for barter and sale.

The object of tne modern fair is entirely different. The value of comparison of products of the farms, both in agriculture and livestock, is one of comparatively recent origin. More than a century ago, in the valley of the Teeswater England, the farmers, being desirous of improving their cattle, began comparing the choicest specimens of each other's herds. They were brought together for this purpose, having in mind a better beef animals and also a better milk producer, combined. From these small beginnings, the great and popular breed of Shorthorn cattle was founded. Likewise, other breeds of stock were added to these fairs, as they were then beginning to be called.

The advantage to be derived from thus comparing animals, became perfectly obvious and apparent. The people learned the great practical value of comparing like things. Agricultural products of the soil were also added to the fair until it became an allaround agricultural and livestock fair. It was purely for educational purposes, and since every generation has to learn for itself, it is as valuable today as it was to the cattle producers of the Teeswater.

How Standards Are Made.

It is by comparison that standards are made. If it were not for the fairs, how would people ever see these samples which set the pace for all and make and create standards? How can anything become a standard except by comparison? When a visitor at a fair, sees the prize winner selected from a class of cattle, he at once acquires a mental picture of the standard set by that show. By trying to equal or excel it, is a large factor in his success in business.

What is true of this particular class of this particular breed of cattle, is true of every other breed of livestock, and in every other class of every other department of the fair. It is thus the people become educated along all the various lines pertaining to agriculture and livestock.

To carry the idea of standardization still further, with what has been said about agriculture and livestock holds good also, in the industries. Consequently, the manufacturers find the fair a most valuable place to display their machinery and all classes of industrial products with a view of educating the people to what they believe to be the best.

Thus the fair has grown until it touches every useful employment of mankind. To visit and study a great fair, gives one a liberal education. No matter what occupation a man or woman may follow, they can learn something more by attending a great modern fair.

The American Standard Bred Horse.

The great American standard bred horse has been made on the American turf. Had it not been for the fairs taking on this branch of industry in animal production, the great American harness horse would not have been.

In the days of Washington, Jefferson, and other founders of our country, trials at speed were fostered by them, and they had various race meetings. It was soon discovered that the race meetings and the agricultural and livestock fairs, having like objects, should be held at the same place and time, and thus racing, with a view to developing a good horse, became one of the most attractive factors of the fair. The Kings and Queens of England, likewise, fostered racing as a means of developing, not only the standard bred and harness horse, but also the thoroughbred or racing horse. Their efforts were not only expended on the turf of England, but were also effective in Canada, where annual appropriations have been made for the purpose for many years.

It was by these trials of speed that the standards were made, and by mating winners with winners, that the standard was advanced and is still advancing year by year. The only objection ever found or made to racing horses, was that certain men of sporting proclivities were inclined to bet on the results, but betting is now outlawed practically everywhere in America, and the race is for the entertainment of the visitors and for the benefit of the breed.

It is perfectly obvious that no other method could have been devised to ascertain the best, except by trials of speed. The fundamental principle of breeding in all livestock, is that like begets like. Thus, when winners of races are mated all the breder's hopes and expectations are for the progeny excelling its ancestor.

It is By Showing Shorthorns that the Best Shorthorns are Picked Out.

It is by snowing Shorthorns, that the best Shorthorn is picked out. Then, by mating the best with the best, a still better Shorthorn is produced. What is true of Shorthorns is true of the Hereford, Aberdeen, Angus, Galloway and every other breed of cattle. What is true of cattle is also true of hogs, sheep and all the various breeds of draft horses.

When the prize winning Percheron at the International Livestock Show of Chicago, sold for $10,000.00, the price was paid because that particular Percheron was the best Percheron in America. Great prices are paid for the best, and only from comparison at the great shows, can the best be ascertained.

As much as ten to fifteen thousand dollars has been frequently paid for great prize winners in Shorthorn, Jersey, Guernsey, Holstein, Hereford, and other breeds of cattle. These prices are not paid by philanthropists—they are paid by breeders who are ambitious to breed on and produce still better.

State Fairs Great Factor in Improving Stock.

Thus it has been found that fairs have served a most useful purpose in the up-building of the livestock industry. Farmers and livestock men throughout the length and breadth of our country, nave learned that the cheapest pound of beef they have produced, is the one that was bred upon the animal; that the best pound of mutton and the best fleece was that which was bred upon the sheep, and that the best horse they have produced was by breeding to the best available or obtainable.

Early maturity of livestock has been brought about by breeding and comparison. Consequently, instead of sending steers to market at from four to six years old, as was once the custom, the highest price is paid for the baby beef and two and three years old.

Instead of marketing hogs from fifteen months to three years old, what is most desirable nowadays, is to market them at seven to eleven months, at weights from two hundred fifty to three hundred fifty pounds.

Marketing for Fat Stuff.

When it comes to marketing fat stuff, it is found of course, that the best animal is produced by good breeding, crossed with corn crib, alfalfa hay or ensilage. The same may be said of milk producers. The best bred cow in the world will not produce a plentiful flow of rich milk unless she is properly cared for and properly fed. All these facts and many, many more, are brought out by the modern fairs. The man who cannot get his money's worth by attending a great fair, must be both blind and deaf.

WEAR OUT THE OLD FIRST

Father—Tommy, go out to the barn and hitch the horse to the old sleigh.

Son—Why not the new sleigh, father?

Father—Wear out the old first, is my motto, my son.

Son—Well then, father, you go out and hitch up the horse.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

We have for sale this week some of the best buys in farms we have ever offered to the buying public.

40 acres right in the center of the Bear River valley, surrounded by some of the best farms there are to be found in Utah. This land has a full water right from the Bear River canal right on the main county road; has been farmed for twenty years, very successfully, first-class crop this year. This property can be had for $115 per acre. A small payment down, ten years on the balance with 6 per cent interest. If you are looking for a farm that will pay for itself soon, this certainly will appeal to you.

One mile west and one-half mile south of Tremonton, right near the beet dumps, we have 40 acres of beautiful land, full water right in the Bear River canal You can haul your products from the farm forty rods to the railroad station. This property is under high state of cultivation and has a first-class crop this year. This can be had for a small payment down and ten years on the balance with 6 per cent interest at $130 per acre.

We have a 60-acre farm, good 6-room house, first-class orchard, right on the main county road on one side and the Lincoln highway on the other, making a very desirable place for a home on a farm. This property raised this year enough crop to pay at least one-half the purchase price. We are offering this farm for $140 per acre. One-fourth down, ten years on the balance, 6 per cent interest.

These farms have been cultivated by expert farmers for a good many years and are under the very highest state of cultivation. The people owning this property live in Illinois and are sacrificing the same.

If you ever desire to go into the dairy are cattle business we certainly have something that will appeal to you. Right on the main line of the Oregon Short Line, in the north end of Cache valley, we have secured several beautiful farms. We have one farm there containing 100 acres of grazing land and approximately 200 acres of pasture land. This property has a fine eight-room house, large barn that will hold thirty or forty head of cattle and fifty or sixty tons of hay. A good granary, good wagon sheds, hog houses, chicken coops, corrals and numerous other out-buildings; good family orchard, large shade trees around the house, beautiful lawn with a spring of good water piped to the house for domestic purposes. This property is on the Yellowstone highway, within a half a mile of a high school and grade schools, church, stores and railroad station. In fact, this property is right near one of the nicest little towns in northern Cache valley. This property can be had for $130 per acre for irrigated land and $10 for the pasture land, 10 per cent of the purchase price down, ten years on the balance.

In the same locality we have another farm, sixty acres of irrigated land, with no improvements. This farm has been cultivated for a good many years and has raised and is raising first-class crops. This is right near the station and town.

We also have 100 acres of pasture land in connection with this. We are asking $100 per acre for the irrigated land and $10 per acre for the pasture land on the very easy terms of 10 per cent down, ten years on the balance.

We also have in Cache valley a farm containing seventy acres. This farm has at the present time a beautiful stand of clover and alfalfa; located on the county road near a good town. This property can be had for $110 per acre, 10 per cent down, ten years on the balance.

In the Bear River valley we have 240 acres of land, sixty acres of irrigated land, the balance, the same land without a water right. However, water right could be purchased at $50 per acre. The ground is all first-class and in a good location. We are offering this land for $150 for the irrigated land and $50 for the dry land. We will consider exchanging this property for Salt Lake real estate.

We have 320 acres of dry farm right in the center of the Bear River valley. This land is all subject to irrigation and water can be purchased. This property raised a first-class crop this year and the wheat sold for about $40 per acre. We are holding this property at $70 per acre. We also would consider some exchange of Salt Lake property.

KIMBALL & RICHARDS
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.

Phone Was. 963.
FARM AND RANCH DEPARTMENT.

YOUR CHANCE TO MAKE SOME MONEY

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

OUR PROPOSITION

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. ALBERTSON
604 Dooly Building
Salt Lake City, Utah.

FOR SALE—REAL ESTATE

Ninety acres fruit and stock farm near Ogden, 30 acres in choice fruit, $1,000 in tools and implements. Full water right. Will sell with or without this years crop. One-half of purchase price can run at six per cent. Will consider trade for desirable city or farm property.

O. A. KENNEDY
Utah Nat'l. Bldg. Ogden, Utah

IDAHO RANCH BARGAIN

200 acre irrigated cattle ranch, adjoining open range and two miles from forest reserve. Has 125 tons hay, 20 acres grain, 5 acres of potatoes, 12 horses, 26 cattle, 22 hogs, 150 chickens, harness, wagons and all the machinery needed. Price $12,000. Good terms.

FEDERAL LAND CO.
Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district a a good buy. Ed. Pearson, Route A., Delta, Utah.

HOMESTEADS

For the best homesteads in Utah, write

GEORGE A. COLE
Monticello, Utah.

When you answer an advertisement always mention the Utah Farmer.

INCREASED WHEAT ACREAGE IN IDAHO

In spite of strenuous efforts made last spring to conpensate for the extensive winter killing of fall-sown wheat by unusually heavy sowing of spring wheat it is perfectly evident now that the wheat crop of 1917 the country over is far below the normal. Instead of the 800,000 bushels confidently expected earlier in the season the country will produce this year but 650,000 ,000 bushels. What is true of the whole country is particularly true of Idaho insofar as her yield of winter wheat is concerned. Her 1917 crop will approximtely be 6,000,000 bushels only as against an average yield of 10,000,000 bushels for the years 1911 to 1915 inclusive. It is too early yet to state definitely her yield of spring wheat, but it is safe to say that it cannot, because of the extremely unfavorable weather conditions that prevailed during the growing season, bring the total yield of wheat in the state up to the normal. Abnormal conditions created by the war demand that steps be taken at once to insure for the next year the greatest possible production of wheat and other bread stuffs to provide for the wants of our own country and for those of our allies across the waters.

The federal department of agriculture has initiated a definite and perfectly logical program for increasing the country's yield of wheat in 1918. The first step in the program involves a general increase in the country's acreage of winter wheat. In keeping with that program Idaho is being called upon to increase her acreage of winter wheat from fifteen to twenty per cent over that of last fall. Some of the states are being asked to increase their winter wheat acreage much more than that. Oregon, for instance, is asked to increase hers fifty per cent over that of last year, and Montana is being asked to increase hers by twenty-nine per cent. A suggestion to increase the acreage that is normally given over to spring wheat doubtless will come later, assuming, of course, that no more than the average amount of winter killing of the fall-sown wheat occurs. Adoption of the program by Idaho will mean a winter wheat areage this fall of 405,000 acres as against 346,000 acres in the fall of 1916. Assuming that the winter wheat acreage of 1916 was sown by 3460 wheat growers, each one this fall will have to sow but twenty acres more than last fall to insure for the state her allotted acreage of winter wheat for 1918.

There are, we believe, a number of perfectly good reasons for urging upon the wheat growers of this state a general falling into line with this campaign for increased winter-wheat production:

1. The state is already a heavy producer of winter wheat. Increasing her acreage, especially in sections where winter wheat is already largely grown, involves neither radical changes in her system of farming nor heavy expenses in the matter of securing suitable harvesting machinery.

2. Winter wheat ordinarily yields more than spring wheat in bushels per acre. In average yield of winter wheat, too, Idaho stands highest among the states; her average yield being 27.7 bushels per acre as against 15.6 bushels per acre for the entire country.

3. Winter wheat is usually sown at a time of year when other farm work is not particularly pressing.

4. The partial replacement of spring with winter wheat on irrigated projects whose water supply is none to abundant would result in an appreciable saving of water for other crops. Winter wheat requires less irrigation water than spring wheat because it can make better use of the winter and early spring precipitation.

5. Winter instead of spring wheat for the truly dry-farmed areas is by far the best practice. This state has extensive areas of land that can be farmed in no other way than by dry-farm methods.

6. In north Idaho, where the rainfall is eighteen inches or more, there can be, at least temporarily, a partial abandonment of the practice of bare summer fallowing.

7. A price that appears now to be fairly remunerative is guaranteed for the crop of 1918.

8. In the need of the nation for a greater production of bread stuffs there is for the Idaho farmer an opportunity for effective, patriotic service of the highest order.—J. S. Jones, Director, Idaho Experiment Station.

RESERVE BANKS MAY LEND MONEY ON WAREHOUSE POTATOES

The potato crop this year will be a large one, owing to the facts that they sold at such high prices at planting time and the emphasis that was given by the President at that time to increase the food supply.

For the benefit of the potato growers the Food Administration and the Federal Reserve Board have agreed upon a plan for classifying potatoes among the non-perishable staples.

Under the regulations of redis counts covered by section 13 of the Federal Reserve act, loans upon warehouse receipts for potatoes may now be rediscounted at the Federal Reserve Banks and thus became negotiable paper throughout the country at the Federal Reserve rates, which in most states is 3½ per cent.

The men who have worked out the scheme believe that it not only will stabilize the market and encourage production by assuring the producers the means with which to finance their potatoes, but will have the added effect of stimulating proper storage, and thus make for a minimum of waste.

If your local bank is not able to help you or does not understand the conditions of this storage plant, write to Utah Agricultural College or the State Council of Defense.

REPORT OF THE WELLSVILLE COW TESTING ASSOCIATION FOR THE MONTH OF AUGUST 1917

By LeRoy W. Hillam.

Though August is perhaps the worst month of the year for the dairy cow, the Wellsville Cow Testing Association made a very creditable showing during this month. The association average for the month was 731 pounds of milk and 29.2 pounds of butter fat, .6 of a pound of fat lower than the average of last month. Considering the oppression of heat and the large number of flies and the drying up of the pastures, this is a very good, showing for the month. This month 64 cows are on the "Honor Roll" each having produced over 40 pounds of butter fat for the 31 day testing period. This is a decrease of six over last month. 73 cows made over 1,000 pounds of milk.

The leading cow this month is a grade Holstein "Beauty" belonging to C. W. Parkinson, she having produced 1,240 pounds of milk testing 5.1 per cent making 63.2 pounds of fat. Second place for the month is a native cow No. 12 owned by LeRoy W. Hall. Her production was 1,566 pounds of 4 per cent milk making 62.6 pounds of fat. Next to this and third place is John Stuart's "Rosie" with 1,420 pounds of milk testing 4.4 per cent making 62.5 pounds of fat. During the last four months this cow has lead the association twice and has been second place twice, a remarkable showing for this time of the year. Fourth place goes to Mr. D. A. Leishman's Shorthorn cow "Wart." She produced 1,369 pounds of milk testing 4.4 per cent making 60.2 pounds of fat.

The high herd average again goes to John Darley's Jerseys. These 21 cows averaged 970 pounds of milk and 44.6 pounds of fat. Second place goes to John Stuart's herd of 11 Holsteins with an average of 37.6 pounds per cow. D. O. Neilson's 6 Holsteins are third with an average of 35.4 pounds of fat.

Mr. Israelson and Mr. Savage, both at Hyrum have completed their silos and much will depend upon the success of their feeding this winter for the construction of more silos in the community next year. Mr. C. W. Parkinson has purchased a valuable Holstein bull calf from the Utah Agricultural College, while the Green brothers are contemplating the purchase of a pure bred Holstein bull at Richmond. There were six boarders disposed of during the month.

Berkshires For Fall Breeding

from

BALLAMOAR FARMS

50—Spring Boars and Sows to Select From—50
Our 1917 Crop is Equal to Former Ones.
Write for Prices.

Caine Livestock Co.

RICHMOND UTAH

$40.50 Los Angeles and Return

Tickets on Sale Daily

June 15th to Sept. 30th

Diverse Routes Via Rail and Steamer, Including San Francisco

Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.

Stopovers at All Points. No Validation Fee.

Final Limit October 31, 1917.

SALT LAKE ROUTE

For Reservations and Routings, see Local Agent, or Address

WM. WARNER, A. G. P. A., Salt Lake City, Utah.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new grand herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Durocs."

FOR SALE

A 20 H. P. International Harvester Tractor Engine, less one-third cost price. Engine now $700.00, 5-disc plow, $75.00. See outfit at work. Also big Engine Disc Harrow, New Spring Tooth Harrow, Small Disc Harrow and one Mower.

HENRY SCHEPERS
Sells, Skull Valley, Tooele Co., Utah.

FOR SALE

Registered Duroc Jersey Pigs, just weaned, from prize-winning sows and Richard's Defender Boar. The best Duroc blood in the West. Orders also booked for "Path-finder" pigs from "Defender" sows. Prices very reasonable.

VICTOR R. FISHER
Oxford Idaho.

BROWN BROKERAGE COMPANY
Eccles Building, Ogden, Utah.
Our business is selling in car lots.
COTTON SEED CAKE & MEAL
CORN, OATS, HAY, STOCK FEED
Provide against uncertainties of transportation by anticipating your requirements early.

FOR SALE

Registered Duroc Pigs, grand-daughters of noted Defender and guaranteed, $15.00 each while they last. Have been crowded along. Reference: First National Bank, Ogden, Utah. Write

LIONEL THATCHER
Ogden Utah

MAN—To wear fine suit, act as agent; big pay, easy work, Banner Tailoring Co., Dept. 738 Chicago.

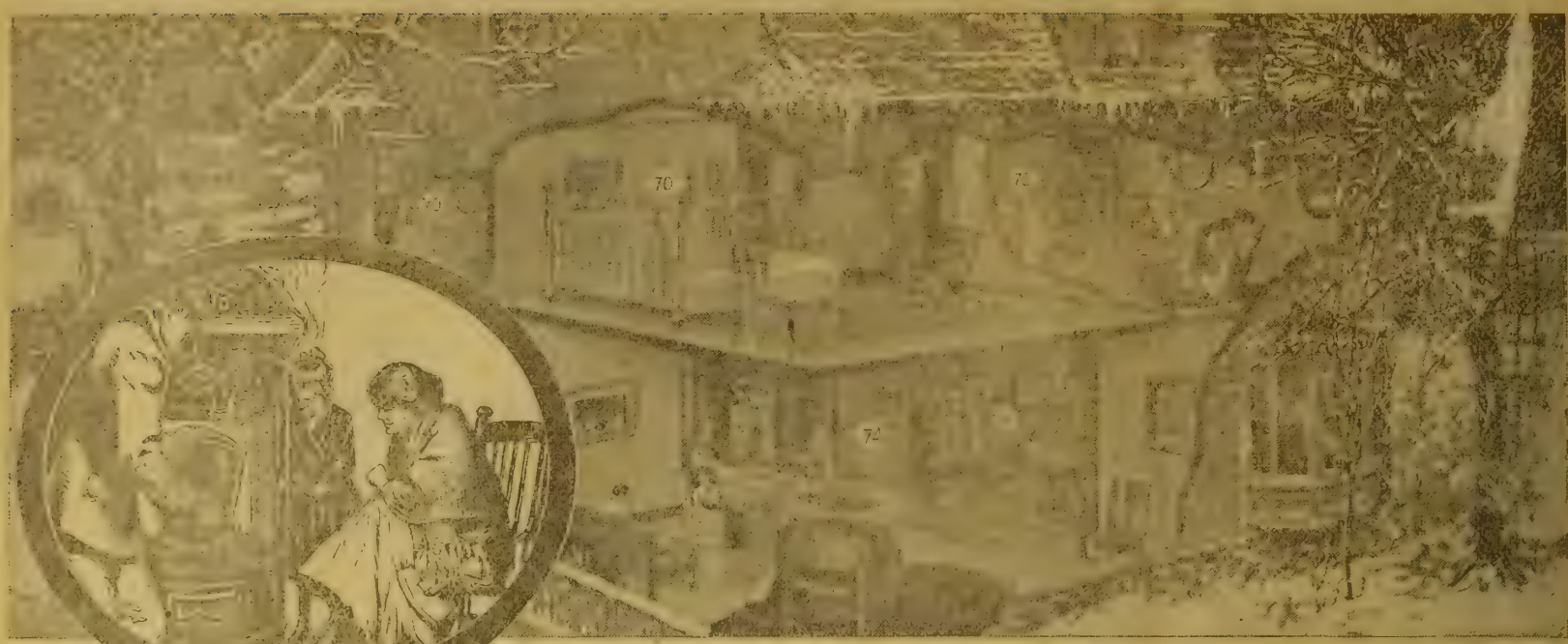
WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100	Butter Wrappers	$ .90
200	Butter Wrappers	1.25
500	Butter Wrappers	2.00
1,000	Butter Wrappers	3.00

Check or money order must accompany order.



Use All Your House All Winter

Why not use *all* of your house instead of only one or two rooms heated with stoves, while the cold bars you from the rest of your home?

For about the same expense or less you may have comfort in every room, see your family expand in happiness and broaden their lives in its genial warmth, and insure the health and well-being of your household.

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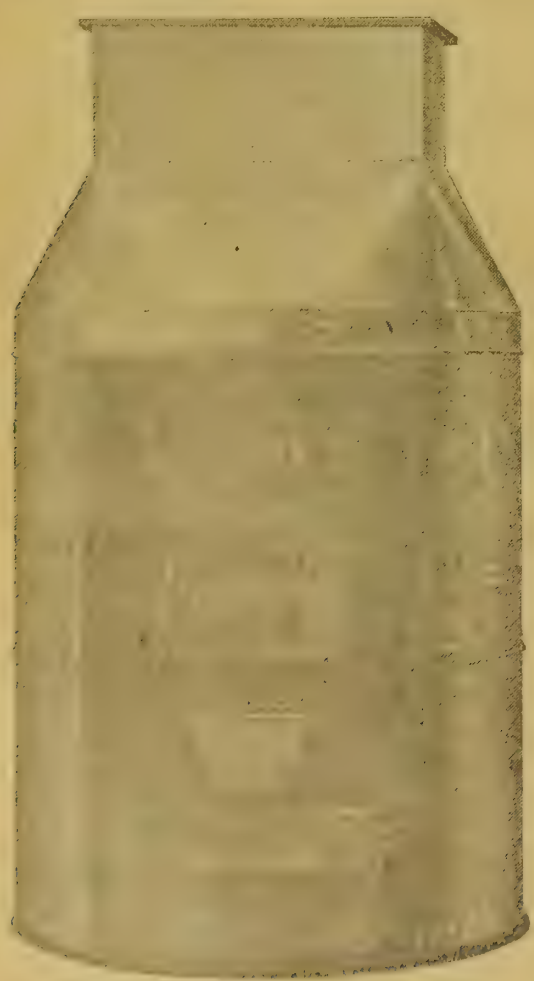

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Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 7 LEHI AND SALT LAKE CITY, UTAH SEPTEMBER 15, 1917

Many Farmers Go On Excursions

Henry Iverson.

The automobile excursions for farmers has been very popular this year. From every county, where there is a County Agricultural Agent or Farm Bureaus, the farmers have gone on one of the educational trips.

Some of these excursions have taken several days, covering several hundred miles. The farmer with his automobile, however, thinks nothing of a few hundred mile trip, if he can see and learn something that will help him in his farming business.

A pleasing thing about these excursions is the entertainment. If a number of farmers from a county have been on one of the trips and enjoyed the hospitality and entertainment of another part of the state, they want to make the visitors of those coming to their county just as pleasant and profitable as possible.

On many of these trips the County Agent and a committee meet the visiting farmers at or near the county line and make the trip through the county with them. An exchange of places in autos is made so that one of these farmers is put in nearly every visiting auto and he is able to tell them all about the county as they pass through it. Another enjoyable feature on many of these trips is the "feeds." Think of a man coming from a section of the state where cherries are not grown, being turned loose in a big cherry orchard to eat all he desires. Fruits, melons and other "feeds", arranged by the local Farm Bureau members, are always enjoyed as part of a dusty automobile ride.

The important things, however, of these trips are what visiting farmers see and learn. They see how different farm work is done, to the way they are doing it. How other machinery and implements are used to the kind they are working with. Labor-saving ideas are often learned such as new methods in putting up hay, stacking, raking or loading.

Visits are made to certain farms and the owner or some one selected, tells of farm operations; how it is conducted and how they make their money. Usually each visit is made to study some certain farm work such as cattle or sheep feeding, dairying, good beet field, purebred livestock, etc.

Farmers, on returning home, go at their work with renewed effort and often change their plans because of some improvement they have seen or learned.

Drainage tracts are visited, and how water-logged land can be redeemed and profitably farmed, is explained. Stock yards, manufacturing plants, were visited.

When a farmer who is just starting in the dairy business visits a modern dairy farm and sees how things are done he goes home with the idea of improving his conditions. What can be done by testing, and having only profitable cows was shown the farmers when they visited dairy herds of 16 to 24 cows that the milk check was never less than $400.00 and often near the $500.00 mark.

Farmers who only cultivate 40 to 80 acres of various crops were surprised to see in other sections 50 to 100 acres devoted to a crop of sugar beets, potatoes or hay, all in one piece.

The farmers who go on these educational agricultural excursions are usually the progressive kind. They want to gather new ideas which they can put into practice on their farms, and in this way make their farm produce greater revenues through better livestock, and better methods of harvesting and marketing. The most significant fact connected with these inspection trips is the opportunity for farmers to see what others are doing, to learn new methods.

Each one goes home better satisfied with what he is doing or he takes home new ideas and methods that will make him a better farmer.

The many trips this year have been very successful. Each year an improvement can be made if the County Agents will talk over with the farmers what they want to see and plan accordingly. Let the County Agent when they get together talk over these excursions and profit by any mistakes made and plan to improve them each year.

These excursions are educational and helpful and every farmer should go on one of them.

SOME "SNAP SHOTS" TAKEN ON THE AGRICULTURAL EXCURSIONS.

Some automobile drivers did not keep the road.
Listening to the farmer tell how he produced the crop.
A flowing well that is an irrigation stream.
Eighteen cows that bring over a $400.00 milk check each month.

DO NOT NEGLECT YOUR FALL PLOWING MAKE A CAREFUL AND CLEAN HARVEST

University of

Beet Tops

H. Mendelson.
(In "Through the Leaves")

The beet tops are a very considerable part of the total product of an acre of beets.

An acre of beets yielding about thirteen tons of beets will produce about nine tons of green tops if there is no leaf spot or hail. These nine tons of tops contain about 15 per cent or 1.35 tons (equals 2700 pounds) dry matter and 7.65 tons water.

The dry substance of the tops consist of about

10.5% digestible protein
1.2% digestible fat
36.0% digestible carbohydrates
7.0% digestible fiber

Ordinary alfalfa hay analyzed by the same methods contains, according to Henry's Feed and Feeding:

10.6% digestible protein
0.9% digestible fat
27.0% digestible carbohydrates
12.0% digestible fiber

So far as these conventional analyses are concerned there is not much difference between the two except that the alfalfa contains more fiber. However, the beet tops contain a great deal more potash, which scours the animal, if it has unlimited access to the green or dry tops. Also, according to the weather during the beet harvest, the tops contain varying amounts of dirt, which are not of benefit to the animal. Therefore, the feeding value of beet tops fluctuates more than that of other feeds which are obtained in clean form.

The final value of a food consists not of what is in it but what you get out of it. If the tops are transformed into mutton or beef they are certainly more valuable if the resulting animal sells for 10c per pound than when it sold for 7c per pound. This means that beet tops today in common with all other farm produce have a much higher value than two or five years ago. This is frequently forgotten when calculating the returns from an acre of beets. Anyway, beet tops are worth more today than they ever were. While better use is made of them every year, there are still some farmers who do not make as good use of them as possible.

Yield of Tops Per Acre.

Unfortunately, there are very few accurate figures available referring to the actual yield of tops under different conditions. A common saying among farmers is that an acre of beet tops furnishes feed for one steer for 100 days.

If the average yield of 1700 pounds dry matter per acre, mentioned above, is obtained, it would allow one steer 27 pounds dry matter, which is a little more than usually consumed by a 1000-pound steer. A common feed per head per day is 100 pounds of pulp and 15 pounds of hay, equals 23.5 pounds dry matter.

Our Agricultural Superintendent, Mr. Heldt, at Scottsbluff, fed, last year, 210 steers with beet tops, hay, molasses and cake. The tops were weighed. He obtained two tons of dry tops from a field averaging 12 tons of beets. The steers ate on an average 18.5 pounds of dry tops per head per day. Mr. Heldt stated that the steers liked to eat more tops, but if allowed to they did not gain as much as when limited to a certain amount.

However, leaving aside the wisdom of allowing the animal to eat such quantities of beet tops, 100 days feed for one steer seems a fair expression of an average yield.

With dairy herds, which on the whole are fed more rationally than other animals, an acre of beet tops often lasts considerably longer than 100 days, mainly because dairy men have found out that feeding an excessive amount of beet tops does not maintain the maximum production of milk. The reason for this may be that tops are too bulky in proportion to their real value, so that the cow, while keeping her stomach filled, does not get enough nourishment for maximum production.

A considerable number of steer feeders also express the opinion that beet tops must be fed in limited quantities and supplemented by other feeds in order to get the best results.

Fluctuations of the Yield of Beet Tops.

There is an impression that some fields run more to tops than others. This is true to a certain extent. While big crops of beets cannot be produced without big tops, it is also true that the higher the fertility of the land the higher is the yield of tops in proportion to the beets harvested.

The seven year average on a German experimental farm shows the following interesting figures:

Fertilizer Used	Tons per acre Beets	Green tops	Lbs. tops per 100 lbs. beets
Stable manure, nitrate, phosphate and potash	19.2	16.3	85
Stable manure alone	17.5	10.8	62
No manure	14.1	7.0	50

While the use of stable manure and commercial fertilizers increased the yield of beets five tons per acre over the unmanured fields, it increased the yield of green tops by nine tons.

The yield of tops in proportion to that of beets also varies from year to year, frequently depending on the state of maturity. The beet tops usually increase in size up to about 100 days after thinning. Thereafter they remain stationary for a while and actually decrease in weight if the beets really mature. The beets, of course, increase in weight all the time if fertility and moisture content of the soil permits it. So it happens frequently that the average weight of the green top of one beet is by August 15th 1½ pounds, while the beet weighs about three-fourths of a pound. The tops at that time frequently weigh twice as much as the beet.

By the middle of September the beets in the same field weigh 1½ pounds each and the tops the same.

By the middle of October the beets will average 2 pounds each, while each top will weigh probably a little less than 1½ pounds.

Beet fields in one district in the second half of August look very much more alike than at any other date, because almost all of them, regardless of the date of planting, have reached the maximum growth of the tops, unless leaf spot or lack of water have created abnormal conditions.

Beets cannot be considered matured unless they have at least 16% sugar. In unfavorable years, like last year, many fields do not test that high.

How much the yield of green tops per 100 pounds beets can vary in different years can be seen from the records of the Experimental Station mentioned above. Since the beets are not irrigated, the fluctuation of the rainfall naturally influences these yields very much:

Fields Receiving Stable Manure and Nitrate.

Year	Tons per acre Beets	Tops	Green tops Per 100 Lbs. beets	Top dry substance Pounds Per acre	Per 100 Lbs. beets
1906	25.3	24.0	94.8	5890	11.6
1908	20.4	18.7	92.0	5630	13.8
1907	20.3	17.2	85.0	5020	12.3
1909	18.0	15.3	85.1	4350	12.1
1903	16.1	9.8	60.5	3490	10.8
1904	11.7	7.8	66.9	3190	13.6

During these years the yield of green tops per 100 pounds beets varied between 95 and 69 pounds. The years with high yields gave a high percentage of green tops, while the years with lower yields of beets gave a rather low percentage. However, green beet tops contain in different years varying percentages of moisture. Usually a rank growth of tops has a high percentage, while a small growth of tops has a low percentage of moisture.

In the records quoted above, the rank growth in the year 1916, furnishing 95 pounds green tops per 100 pounds beets, the tops contained 57.8% water, while in 1903 with 60% green tops they contained only 79.7% water. Therefore, the yield of top dry substance per 100 pounds beets harvested does not differ as much as that of green tops. In 1906, 11.6 pounds of dry tops were harvested per 100 pounds beets; in 1903 it was 10.8 pounds.

In the Scottsbluff feeding operations, mentioned above, a yield of 16.5 pounds of dry tops per 100 pounds beets harvested were actually hauled off the field. Of course these tops contained a considerable amount of moisture.

That the state of fertility of a field influences the relative yield of tops can be seen from the following figures obtained in a German experimental station:

Yield of Green Tops per 100 Pounds Beets Harvested.

Year	and Nitrate	Manure Alone	No Manure
1906	94.8	73.6	58.0
1908	92.0	61.5	78.3
1907	85.0	63.0	58.0
1909	85.1	68.0	49.6
1903	60.5	48.9	49.2
1904	66.9	57.6	47.7

The relative yield of beet tops was increased every year by the addition of nitrate. Two years out of six the fields receiving no manure or nitrate produced the lowest relative yield of tops. However, an increase in the relative yield of the tops, as well as the absolute yield, was in most cases accompanied by an increase in the yield of the tops, as well as in the absolute yield, was in most cases accompanied by an increase in the yield of beets, as can be seen from the following table:

Tons Beets and Green Tops Per Acre.

Year	Manure and Nitrate Beets	Tops	Manure Alone Beets	Tops	No Manure Beets	Tops
1906	25.3	24.0	24.1	17.8	19.4	11.2
1908	20.4	18.7	18.9	11.7	13.1	10.5
1907	20.3	17.2	49.2	12.1	15.7	9.1
1909	18.0	15.3	15.4	9.4	12.3	6.1
1903	16.1	9.8	14.1	6.9	13.2	6.5
1904	11.7	7.8	11.3	6.5	9.7	4.6

Therefore it can be stated, big crops of beets cannot be grown without big tops, but the beets do not grow bigger in the same proportion as the tops grow.

To what extent the minerals absorbed by the beet are accumulated in the tops can be seen from the following figures:

The seven-year average of the fields receiving manure, nitrate, phosphate and potash, was—

19.2 tons beets
16.3 tons green tops

This material contained:

	Lbs. Nitrogen	Lbs. Phos.	Lbs. Potash
In the tops	109	31	134
In the beets	72	26	78
Total	181	57	212

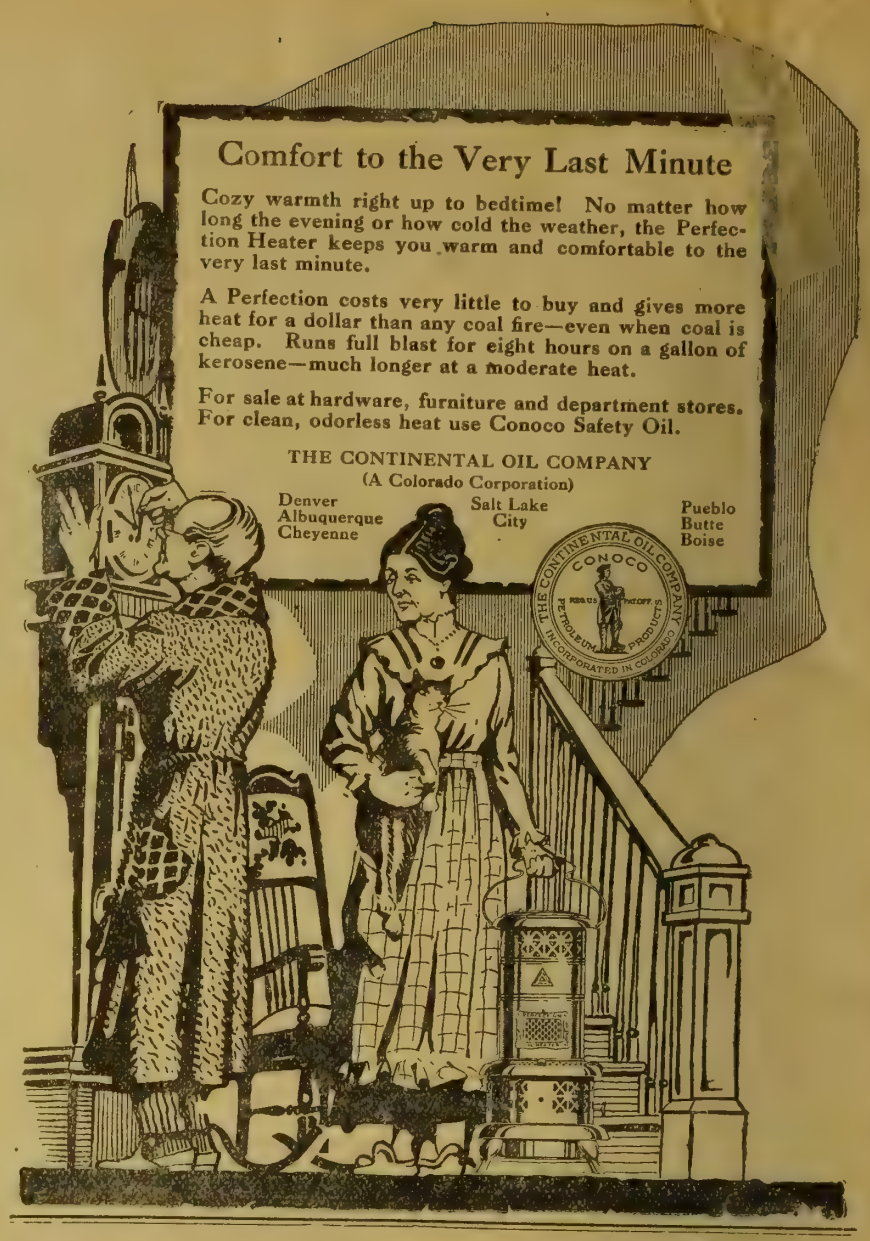
The tops contained more of the mineral plant food than the beets did.

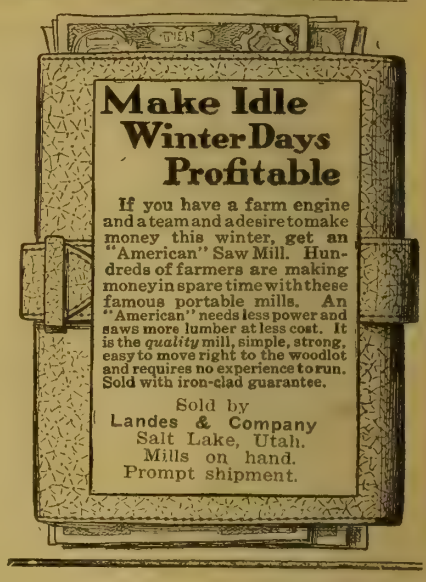
To Sum up:

The composition of the dry substance of beet tops somewhat resembles that of alfalfa hay, although it may not have the same food value.

The yield of green tops of a normal field may be assumed to average 75% of the weight of beets. This will be

(Continued on page 10)





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VOLUME XIV. LEHI, UTAH, SATURDAY, SEPTEMBER 15, 1917 No. 7

Marketing The Dairy Products From the Farmers' Standpoint

Sterling E. Price.

With the rapidly increasing demand for dairy products one would think the dairy farmer is becoming rich by leaps and bounds, but as we go into the facts of the case we find that this is not so. It is not the farmer who is benefiting by these great strides in the dairy market. True, the farmer has had an increase in the price paid him for his dairy products but food prices have soared far beyond any corrosponding increase in price of the products, made from these foods. If the farmer is to stay in the business something must be done to pay for the great amount of the high-priced food that is being consumed by the dairy- cow. There are three great problems that will decide this. They are:—Increase of yield per cow, better and more economical feeding, and better marketing. The last named will be considered here.

The profits from dairying are twofold (1) Direct profits realized from the sale of milk, cream, butter, and cheese, (2) indirect profits occuring from an increased fertility of the land and the consequent increased productiveness of the same.

By feeding raw materials of the farm to dairy cows we are not only manufacturing high priced products as compared with the value of the raw material but we are retaining on the farm that valuable by-product, the fertilizer, which contains about 75 per cent of the fertilizing constituents originally present in the feed. Where only butter is sold practically all the fertility is retained, and where cream is sold at least 95 per cent of the fertilizer is retained upon the farm. In Illinois, $7,000,000 is annually expended for fertilizers. Had the farmers of Illinois followed the dairy business more closely in early days, they would be saving today at least $5,000,000 annually.

In general, the great problem of marketing dairy products lies with the producer and not the retailer, creameryman or jobber. After carefully studying the problem we find that it is due mainly to a lack of an efficient system of distribution and marketing knowledge. It is because of the lack of a marketing plan that the present day average dairy can not claim to be a business, but simply an occupation.

We have innumerable successful manufacturing establishments but where can one be found where all the thought is given to production and no attention given to marketing the product.

Many farmers attribute marketing difficulties to the presence of so many middle men, but it must be remembered that these agents have come into existence to perform services that the farmer has failed to perform himself. If the farmer will not or cannot arrange to finance his business, he must expect to pay others to do it for him. This of necessity calls into existence a class of speculators who perform this work but not free of charge. The retailer or consumer will not stand this cost so the farmer must.

Where pastures were abundant and land cheap the farmer could stand this practice but times have changed. Land has trippled in value and prices of feeds increased about 85 per cent in the last decade. The New Jersey Experiment station after running an experiment on 40 cows for 7 years gives the average cost of producing 100 pounds of milk as $1.03, C. L. Peck gives the average, cost of producing 100 pounds of milk in the U. S. as $1.08 for 1911. N. Y. Geneva found it to

(Continued from page 3)

MARION LOGANESS 272176.
Bred and owned by Utah Agricultural College, calved at the age of 2 years 6 months. Seven days record 343 pounds of milk 12.57 pounds fat. Best day 57 pounds of milk. First 30 days she produced 1,621 pounds of milk.

Wheat For Our Allies

By F. S. Harris.

It is pretty generally conceded that the result of the war will largely be determined by bread. The group of nations whose food supply remains ample after the supply of the other group is exhausted will probably be victorious in the struggle. This means that we must do all we can to assist our allies by supplying food as well as by furnishing fighting men and ammunition.

Since the beginning of the war the need for American-grown wheat in Europe has steadily increased and will continue to increase during the period of the conflict. At first we were easily able to supply the demand from our ample store, but as the demand increased, our reserve has gradually decreased till at present our allies need more wheat than can be supplied from our surplus. This means one of two things: Either our production must be increased, or there will be a shortage; and a shortage of bread will endanger the chances of success of the United States and her allies in the greatest war of all time.

If we were engaged in an ordinary conflict to settle a minor point of territorial boundry or national infringment, success would not be so important; but we have assumed the role of defender of the liberties of mankind and have decided to give our all, if need be, to insure the people of the world the justice and representation in government for which our forefathers fought and bled when our nation was founded. Thus, we are fighting for the greatest prize the world can offer, and we can well afford to make every human effort to succeed. If success depends on increasing our wheat production, then in the name of goodness, let us increase our wheat even though it means sacrifice in other ways.

The compensation offered by the law or supply and demand is such that no sacrifice will be necessary in increasing the production of wheat, for the price the farmer will receive for his crop will be ample reward for every effort he puts forth. Never in the history of the nation has there been such an opportunity to make money raising wheat. Even in the days when practically all work had to be done by hand the price was no so high as it is at present.

We do not advocate abandoning all other crops; on the contrary the ordinary balance in running the farm should be maintained. Hay, potatoes, sugar-beets, and vegetables must continue to be raised in large quantities. The increase in wheat should come from better methods of handling the crop on old land and from adding to the cultivated area land that previously has not been producing.

Much of this non-producing land could not be made to pay when wheat was sixty cents a bushel, but with the price raised to two dollars, there will be a handsome margin of profit.

Let every patriotic citizen lend his influence to help out the campaign of the government to increase during the 1918 the wheat supply of the country; not that we are afraid of starvation, but by supplying our allies with bread we help to insure their success and ours.

Storing Vegetables For Winter

Dr. M. C. Merrill, Horticulturist, Utah Agricultural College.

I. General Principles.

From the standpoint of garden production this season has been one of the most interesting the country has ever experienced. Following a winter which was marked by soaring prices for foodstuffs; following the declaration of war in the early spring when our nation became one of the combatants in the great conflict; and spurred on by pitiful appeals for food from the starving nations of Europe, the people of the United States took off their coats, rolled up their short sleeves, and got busy in the back yard, the garden and the vacant lot as never before. It was an inspiring sight to behold, and great was the satisfaction among the toilers during those balmy days of spring when they massaged the face of Mother Nature and saw her later respond with smiling crops and golden harvests.

But the planting, cultivating, weeding, and watering of the crops were only half of the joy of the service rendered in behalf of the liberty of the world. The other half of the service consists in the utilization and conservation of the food supplies thus produced. So amid the proud gathering of bounteous yields from the garden this summer by the victorious "Soldiers of the Commissary" there has been the harmonious rattle of glass jars, canning paraphernali, drying apparatus, and kitchen utensils by that splendid army of the "Conserve Corps" which has been such a bulwark of strength in the battle of preparedness. On every hand the work is going merrily on while the merchants are kept busy supplying the jars and materials.

The yield of produce is so large, however, that neither by eating nor by canning can we hope to dispose of all that we have raised this year. Nor would it be wise to try to do so. There is the storing of vegetables for winter that should always have a place in our annual practice. Yet despite the fact that it is so desirable to have a winter supply of vegetables and thus insure an almost continual source of pleasure throughout the year in the change of our diet, there has been remarkably little research carried out to determine the best factors, conditions, and methods of storing vegetables for winter use on the farm or in the home. As a result, we are still following very largely the methods used by your forefathers for this important work. Where the harvesting and storing of vegetables are not properly done there is a great loss of potential food due to decay or fermentation in the storage pit or cellar.

As the season for storage will soon be upon us it benooves us to consider this subject seriously and at once. How and where are we going to store our surplus produce? Are our bins, cellars, pits, or storage houses in a neat, clean, sanitary, and orderly condition? Have we any repair work, remodelling, or enlarging to do on our storage places? If so, let us up and at it today. Tomorrow may be too late.

Because of the fact that each vegetable is more or less a law unto itself pertaining to the best conditions of its storage, and because the conditions over the State are so varied, it is difficult to state in a brief article the specific principes that underlie the storage practice for each vegetable. We must speak in general terms, then in this article and indicate only some of the principles of wide application, leaving the treatment of the specific cases of storage practice for a subsequent article.

As the very best place to begin a thing is at the beginning, so the time

(Continued on page 11)

The Drainage of Irrigated Farms

By R. A. Hart, Senior Drainage Engineer.

Devices.

Bulkheads and outfalls.—The outlet of a drainage system should come in for more consideration and attention than usually is given to it. If the tile line discharges into a deep ravine or river channel at some distance above the water level an outfall should be provided. This may consist of a corrugated iron pipe extending far enough out over the bank to discharge the drainage water directly into the stream without striking the bank and causing erosion. The other end should be anchored by means of a concrete wall and a careful connection with the tile line must be made so that water will not find its way along the outside of the conduit. The last few joints between tile should be cemented.

If the drain discharges at or near the water level or bottom of a channel a concrete, brick, or timber bulkhead should be constructed to prevent injury from frost and from the caving of the banks, and to prevent the washing out of the tile line at the lower end. Care should be taken that it has a good foundation, in order that it may not be undermined. A network of heavy wires or small rods of copper or galvanized iron should be placed across the outlet to keep out small animals.

Manholes.—A change in direction of a line of tile should be made gradually by a smooth curve, or a manhole about 4 feet square should be installed at the point of change. If the soil contain much fine sand, a combination manhole and sand trap should be located at such a point, as well as at every change from a steep to a lighter grade. Such a device serves as an observation well in which the flow may be seen and the general conditions of the system watched. It also serves as a settling basin for any sand or silt that may be carried by the drain, and if the trap be made to extend a foot or two below the drain, a chamber is formed in which a considerable amount of sediment is held until it can be removed. The manhole may be provided also with a surface inlet to make it possible for the drain to take care of surface water and, if desired, to provide for flushing the drain. As a manhole proper it provides a means for the operation of a root-cutting or drain-cleaning device operated by sewer rods. If it is expected that such work will be necessary, the drains should be laid out in straight lines with grades as uniform as possible, and a manhole should be provided at each junction, change in slope from steep to a lighter grade, and on straight sections at intervals of not to exceed 500 feet.

On straight lines a manhole may be made long and narrow, but at a junction or turn it should be made square to facilitate the operation of rods and to prevent the sediment from being carried across the trap. Brick or concrete is preferable, but lumber often is used. Recently a manhole built of corrugated iron has come into use and presents many advantages. When built of lumber, 2-inch material should be used. In most places the manhole should be provided with a bottom and it always should be fitted with a cover that can be locked down.

Observation wells.—If little sand be present, rendering sand traps unnecessary, it still is desirable to provide for obeservation of the flow at points throughout the system. Nothing serves this purpose better than a vertical stack of large-sized tile or second-grade sewer pipe, extending from a little above the surface of the ground to a foot or more below the tile line, and having holes cut in the lower length to accommodate the drain. As may be seen, a small setting space is provided, from which sediment may be removed with a telephone spoon. A cover always should be provided and the joints should be cemented. This device costs little and occupies small space. If desired, the top section may be removed subsequently, a cap provided for the second section, and cultivation be carried on directly over the top. Such a device also may be installed for inspection purposes between regular manholes.

Surface inlets and flushing wells.—A vertical stack of tile or pipe is useful also as a surface inlet or flushing well. The bottom should be paved with coarse gravel and the top provided with an iron grating and a mound of gravel or crushed stone. The backfill should be well compacted around the stack. Such an inlet should be installed wherever a drain crosses a depression or flat, so that the waste water or storm water may not pond long enough to puddle the soil or "burn" the crop. During irrigation the entrance of water may be prevented by throwing up a circular ridge of earth around the mound. One of these devices also should be used at the upper end of each branch line. The first few length of tile in the drain should be a size larger than the tile designed for the drain, so the water will not be retarded in its progress into the drain.

Flumes.—Flumes should be provided for all canals and ditches that cross under drains, and care should be taken to prevent large quantities of water from flowing across drains, particularly during the first few seasons after the installation of the system.

Relief wells.—The source of damaging water often is in some deep, pervious stratum, and the movement is upward. The stratum is connnected with a higher lying source of supply, and the water is under pressure. Ordinary methods of drainage avail little since the damaging water rises between drains, however closely they may be spaced, and it is not unusual to find water standing on the ground surface within 10 feet of a drain 6 feet or more in depth. The source of the water may be in gravel, sand, stratified shale, sand rock, or lava. A pressure condition has been found even where the only change in subsoil conditions was in the nature of the clay strata.

To meet the condition it is necessary to install relief wells connecting the pervious stratum with a tile drain laid at ordinary depth. The pressure causes the water to rise through the relief wells which act as vertical drains. The sole purpose of the ordinary drain is to carry off the water brought up by the relief well, and it accomplishes little or no direct drain-drainage. With the pressure relieved at the drain level the damaging water no longer can make its way to the ground surface within the area affected by the well or system of wells. It is necessary in each case to determine the required number and spacing of the wells and the best indication is the effect of one well upon another.

An earth auger may be used for the installation of relief wells in ordinary soil, but in shale or rock it is necessary to use a well-drilling outfit. Often it is necessary to drill to a depth of fom 20 to 50 feet. Usually relief wells must be cased. A vertical stack of tile or an iron pipe may be used for this purpose. Wooden tubes also have been employed. The casings should be connected carefully to the drain line so there will be no danger that they will silt up in periods of inactivity.

Costs.

Owing to the great variety of conditions met in the drainage of irrigated lands, the cost of such work varies over a wide range. Chief among the many factors influencing cost are the size of the tract to be recalimed, its relation to surrounding tracts, the degree of wetness, nature of the soil, type of drain installed, opportunity of obtaining an outlet, availability of materials, distance from factories and from railway connections, quality and cost of labor, feasibility of using machinery, season in which the work is done, knowledge of the man in charge, and method of handling the construction work.

Experience in practically all the Western States, under many different conditions, shows that the cost of draining ordinary-sized farms having an average soil that is neither so hard as to require picking nor so soft that serious caving of the banks of trenches will take place, range from $15 to $30 per acre with the average $20 per acre. If hardpan, rock, or shale be present, or if the soil be fluxible, the cost may run up to $50 per acre, or even more if much tight sheeting of the trenches is necessary. In a few special cases drainage of small tracts in the midst of unreclaimed lands has cost between $75 and $100 per acre, but these costs represent situations that would not be encountered in regular operations.

In regard to costs per unit of length of drain it may be said that clay tile at the factory ranges in cost from about 1 cent per inch of inside diameter per foot of length for the smaller sizes up to about 2 cents in the larger sizes. Hand trenching for tile up to 12 inches in diameter, under ordinary conditions, ranges in cost from 10 to 25 cents per linear foot for an average depth of 6 feet, with the cost increasing about 50 per cent for each additional foot, while trenching in hard or fluxible material will run up to more than 25 cents per foot for 6-foot trenching. Rock work would of course be much higher. When tight sheeting is reyuired the work will cost 50 cents or more per linear foot. Machine trenching usually is cheaper than hand trenching, but few jobs have cost less than $1 per rod for ordinary soils and depths.

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GUARD AGAINST FIRE
Special Effort Should Be Made.

No more important problem confronts the grain growers of the northwest than that of preventing fires.

This is the belief of the state council of defense, which is co-operating with the growers the county authorities, the state insurance department and the large insurance organizations to reduce the menace of fire.

With the complete organization of local, county and state forces escape will be extremely difficult for any wilful trouble makers.

From the farmer's point of view the necessity for conserving the crop has not only the incentive of patriotism, but fear is expressed that if grain losses become out of proportion the insurance companies may be compelled to cancel all grain insurance as a matter of self-protection.

Preparation to combat fires necessitates the cutting of hay strips along the roads and around farms, and a fire-fighting equipment that can be brought instantly into action. One method is to equip an auto or light wagon with wet sacks, a number of 10-gallon milk cans, filled with water; plenty of shovels, a plow for quickly running furrows, and other fire extinguishing equipment to make a whole fire department, when properly manned.

No threshing machine should be allowed to operate without full fire fighting equipment, including at least two two and one-half gallon fire extinguishers and every "setting" should be protected by half a dozen plowed furrows.

---o---

Wide-awake bankers now recognize the silo as a wise investment and will gladly lend the necessary funds needed—especially if the silo is to be of modern fireproof construtcion.

---o---

When you answer an advertisement always mention the Utah Farmer.

"UTAH'S WONDERLAND"

Reached Via

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A vacation spent in Zion Canyon will be a pleasure long remembered.

For detailed information as to rates and reservations, write or call on:

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Do not let uneasiness regarding your valuables mar the pleasure of your vacation trip. Place them in one of our safe deposit boxes and forget them until they are needed. You can do this by mail. Write for particulars.

Walker Brothers Bankers

SALT LAKE CITY

DIGEST OF FOOD CONTROL BILL

By reason of the existence of a state of war, Congress has enacted and the President has approved a bill to "provide further for the national security and defense, by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel."

Scope of Food Bill Large

This act relates to "foods, feeds, fuel, including fuel oil and natural gas, fertilizers and fertilizer ingredients, tools, utensils, implements, machinery and equipment required for the actual production of food, feeds and fuel."

The President is authorized to use such agencies or persons as he may see fit to carry out its provisions.

Price Assurance for Wheat

A minimum guarantee for wheat of $2 a bushel is assured for the 1918 crop, but this guarantee does not apply to the 1917 crop. In addition the President may, during the period of the war, determine what shall be a suitable guarantee of the price of wheat in order to stimulate production. The import of this is that the government would have to support wheat at that price should unusually big world crop tend to force it down. This guarantees the farmer a fair price for his wheat in the face of unforeseen price-depressing emergencies. Authority is also given the President to change tariff schedules on wheat should conditions change and wheat start to pour into the United States in response to the attraction of the existing artificial price.

Provisions against Speculation and Hoarding.

The hoarding or monopolization of, the wilful waste for the purpose of enhancing the price of, or the entering into a conspiracy for the purpose of interfering in certain enumerated ways with the production or distribution of, foods, feeds and fuels, is made unlawful. The President is authorized either to regulate or "wholly or partly prohibit, operations, practices, and transactions at, on, in, or under the rules of any exchange, board of trade, or similar institution or place of business" in order to prevent injurious speculation in foods, feeds and fuels.

Broad powers Given President

Whenever the President may find it essential, he is impowered to license all business relating to importation, manufacture, storage, mining or distribution of food, feed, fuel or other articles named. This does not apply to farmers or other actual producers or to the railroads.

He is also authorized to purchase, store, provide storage facilities for and sell wheat, flour, meal, beans and potatoes.

These provisions are in addition to the power granted the President to requisition any supplies he may need for the national defense forces. There is an exemption to protect supplies of foodstuffs reasonably required by the owners for use or consumption by themselves or dependents.

Power to Take over Plants

In order to supply the army and navy the President is authorized to take over and operate "any factory, packing house, oil pipe line, mine or other part thereof, in or through which any necessaries are or may be manufactured, produced, prepared or mined." Whenever the President deems the governmental need of such plants has ended they may be restored to their owners. Compensation, of course, is provided. In the clause authorizing the Presdent to operate plants it is provided that he may prescribe regulations governing the emplement, control or compensaton of employees employed in such plants, etc.

Distillation Banned

The "liquor" section of the bill forbids the use of "foods, fruits, food materials and feeds" for making distilled liquors except for non-beverage purposes and for the fortification of sweet wines. As to beer and wine, the President is given authority to stop their manufacture if he deems it essential to secure an adequate and continuous supply of food. Stocks of liquor already made, whether in bond or in stock, may be commandeered by the President for redistillation if such action is necessary to meet the requirements of the government. These two latter provisions are left entirely at the President's discretion.

Prices of Coal To Be Fixed

If deemed necessary, the President is auothorized to fix the price of coal and coke. This applies to wherever coal or coke may be sold and whether by producer or dealer. The President is further authorized "to establish rules for the regulation of the production, sale, shipment, distribution, apportionment or storage thereof among dealers and consumers domestic or foreign; said authority and power may be exercised by him through the agency of the Federal Trade Commission during the war or for such part of said time as in his judgment may be necessary."

If, in the President's opinion, any producer or dealer fails or neglects to conform to such prices or regulation, or to conduct his business efficiently under such regulation and control, the President is authorized to requisition such plant or business for the period of the war or such part of that time as may be deemed expedient.

Government May Buy Coal

In addition, the bill gives the President the option, if he should think that plan beter, of forcing all producers of coal and coke, either in any special coal field or in the entire country, to sell all their products to the United States or to some agency which the President may designate, and then let the United States or that agency distribute the coal and coke.

Nitrates for Fertilizers

Power is given the President to acquire such stocks of nitrates as he may determine to be necessary and find available for fertilizers, and to dispose of them to the consumer at cost plus expenses.

Bill Dies at Conclusion of War

The entire bill is automatically wiped off the statute books with the coming of peace.

HILL SELECTION OF POTATO SEED

There are many ways to increase production. One of the most important of these is the securing of good seed.

The hill selection of potato seed has proven a good method of securing better seed and an increased yield.

One farmer has selected his seed in this way. While the vines are still green he takes a stick and marks the ones he will dig. Later on he digs by hand the hills thus selected and keeps only the hills that come up to the standard he is working for. His yield has greatly increased during the past 5 years he has been hill selecting.

Continued selection of potatoes from the highest-yielding hills through several years will result in increasing the productivity of a variety. Yield, form and quanty of the tubers can be noted at digging time.

By selecting seed from the highest-yielding hills at digging time rather than by the usual method without regard to productivity, potato yields were increased nine percent in a test made at the Ohio Agricultural Experiment Station. A difference of 55 percent was found in the crop from seed chosen from the highest-yielding and that from the lowest-yielding hills.

When the best seed from the hill-selected potatoes was planted the second year, it yielded 26 per cent more than seed chosen in the ordinary way. The product of the highest-yielding hills was 228 percent more than that from the hills of lowest yield two years previous.

High-yielding hills grown under average fertility and moisture conditions of the soil and in a full stand of plants can be chosen when the crop is dug. Form and freedom from disease as well as yield must also be taken into account in the choice of seed potatoes.

Single tests may be misleading. A hill may yield unusually well because of its environment and not because of inherent tendencies. By continuing the selection several years and discarding inferior hills, those that owe their superiority to favorable environment will be weeded out and only the offspring from productive hills will remain.

CAREFUL SOIL PREPARATION WILL HELP THE WHEAT AND RYE YIELD

Special care to place the soil in good condition in preparation for planting wheat and rye will go a long way toward assuring the production of a bumper crop.

If winter grains are to be grown on land devoted to similar grains during the preceding season, the land should be plowed as soon as the old crops are removed and occasionally the surface cultivated to kill weeds until planting time. The plowing should be to a depth of about 7 inches. Just before planting time the land should be harrowed if fairly moist and free from weeds; otherwise it should be disked and harrowed.

Wheat and rye may follow practically any crop which may be got out of the way in time. Where a choice is possible, however, it is better to have these grains follow a cultivated crop.

If the wheat and rye follow a cultivated crop which has been kept free from weeds, it is best not to plow the land. The land may simply be disked and harrowed, harrowing to be performed again just before seeding.

Under all conditions drilling is preferable to broadcasting as a method of planting, and if the farmer has no drill of his own, it will be worth while for him, in most cases, to rent one. When a drill is used less seed is required, the seed are covered better and may be planted in contact with moist soil, and a more even stand obtained.

BACTERIOLOGY AND THE PUBLIC HEALTH

Why educate your boy and then let him die of typhoid fever? Why not, instead of the usual nursery rhymes, teach him a jingle which contains a very important truth, one which may be brought forth each day with renewed interest, such as the following:

"Oh, every fly that skips our swatters,
Will have five million sons and daughters,
And countless first and second cousins;
Of aunts and uncles, scores and dozens,
And fifty-seven billion nieces;
So knock the blamed thing all to pieces."

Or:

"Most injurious typhoid fly,
Drink with you no more will I;
When you settle on my cup,
I perchance bacteria sup;
After what I've seen today,
I would have you chased away,
I dislike those feet of thine,
What they-ve touched I shall decline;
Carrier of germ and spore,
Get thee hence; return no more;
Spreader of disease, begone,
Kindly leave my food alone."

Why not instill early the principles of Preventive Medicine and Hygiene and then, after the usual preliminary training have it continued in the university.

The science of Bacteriology is fundamental in that it touches human lief and activities at every point. The growth of bacteriology is largely a matter of contemporary history. In no single science can the rapidity of development be compared with that of bacteriology, nor can another science present as the result of development more far reaching consequences in its application to the welfare of the human race.

All university schedules offer a number of electives. Why not elect a subject which tends to the promotion of health, and be a booster for the health and, therefore, the happiness of the human race? The conservation of the public health is a paramount issue. There is great need for selective draft in this particular important field. Let it be hoped that no university student would claim exemption.

In the Department of Bacteriology may be found all the equipment usually provided in well appointed laboratories. Five of the leading journals pertaining to the subject, and all the Public Health bulletins published in the country are on file. —John J. Putman.

Mention the Utah Farmer when answering the advertisements.

CUTTER'S
BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:
10 dose pkge. Single pills $1.00
50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
50 dose pkge. Double Pills 6.00
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the addess cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Destroy all the weeds that have gone to seed, and wherever you can with safety, burn them so that the seed will not get scattered to produce another crop next year.

From all prospects, it looks like the price of eggs is going to be high this winter, and it will be profitable to keep poultry this winter, even at the present price of chicken feed.

Do not be afraid to buy a good dairy cow, as she is one of the most profitable investments on the farm. Be sure, however, that you get a good cow, and one that will produce a paying amount of milk and butter fat.

Canada now prohibits the use of canned vegetables, except under special circumstances. The Canadian Government claim that fresh and green vegetables are available and plentiful and that canned goods should be held for later use.

Now is the time to crowd the silo work. In some sections of the State, they are already at work filling their silos. The quality of ensilage will be improved if put into the silo at the right time. In filling the silo, one must be careful about the dangerous gases that come from the ensilage. If there is any doubt as to the safety of going into the silo, lower a lantern and if the light should go out, it may result seriously for one entering under such conditions.

MANY AUTOS

In one small community of our state, they have a large number of autos. There are 80 families and 33 of them have automobiles.

After a careful study of why this number of autos were owned in such a small place, it was found that livestock and the dairy cow made up a good part of their farming business.

If you want to make money in farming put more livestock on the farm. In this community they work together; there is a co-operative spirit and way of doing things. They are helping one another and in this way the whole community is prospering.

FALL PLOWING

Many of our farmers will remember the unusual weather conditions and the early heavy frost that came and prevented late fall plowing last year. We suggest that the work of all plowing should commence just as soon as possible to over come such conditions, should they occur again.

From Government reports and officials, the importance of increasing our crops next year is just as necessary as it was for 1917.

Do your fall plowing now, and leave next spring available for increasing the acreage of your crops. If the work is left until spring, the acerage that can be planted will be limited on account of the lack of time and labor.

Get at your fall plowing just as early as possible and do as much of it as you can.

SAVE THE GOOD SOWS

At the present price of hogs it is a temptation to fatten the sows and send them to market. The cost of feed is a good agrument to do this. It is, however, very important to save the good sows, those that are in the habit of bringing good sized litters. Save those sows that make good mothers. Some method should be worked out so that you will know the best sows and keep them over for another year.

The cost of keeping these sows over is greatly reduced when you pasture them on alfalfa with a little grain.

Keep the good sows, they will produce more pigs at a lower cost and with less trouble.

IMPORTANT TO EVERY READER

We have just completed a careful checking of our mailing list. We find that in some few cases two papers are going to the same family. It happens in this way— when a renewal subscription is sent in the name is changed from father to son, or the initials are changed, or one time the name is signed with initals and another time it is spelled out.

We have tried to take out every duplicate and if there are any coming to you with this issue kindly write us so we can correct it. We want every one to get his Farmer but paper cost too much to have any waste or duplicate circulation going out as a mistake. So we ask your help in this matter and will appreciate any assistance given. If there is anything wrong about your address let us know and we will correct it.

MANY DRAINAGE SYSTEMS

There is a great deal of interest in some sections of our State for the re-claiming of our water-logged lands by drainage. Only the other day a tract of land covering about 25,000 acres was made a drainage district, and by a vote of the land owners about $400,000 will be spent draining it. Many other districts of smaller area are being successfully drained.

In every county where tracts of land have been drained, there is more interest than elsewhere, because the farmers are able to see the results of a drainage system and the value it is to the land, and the crops that are produced after the drainage has taken place.

To be successful and permanent, drainage work must be done with great care.

WHAT THE AUTO IS DOING

It seems a hard task for some farmers to stand prosperity. It is a serious mistake for any new owner of a car to forget or neglect his crop for the sake of pleasure trips.

On a recent trip through one of our southern beet districts, a field of beets was pointed out and the neglect of the owner, who was away on a pleasure trip, was shown.

Another case was shown us where the owner of a large hay field let it spoil, while he was of on a trip in his auto. These are only two of many instances to which our attention has been called.

The auto is like many other things that are helpful and a pleasure to the farmer, it can be abused.

There should be no neglect in the care of crops, however. If work is well planned, time [illegible] found so as to make pleasure trips and al[illegible] take care of the crops and farm.

WHAT PEOPLE SAY

It is hard indeed to publish a general f[illegible] paper and please all our readers. Some are [illegible]terested in dry-farming and want more readi[illegible] along that line. The livestock men say, "y[illegible] are neglecting our branch of farming."

We try to see that all departments have something helpful each issue. One issue will contain more for this or that kind of farming and may be less the next issue.

We are receiving a great many compliments just now on the good paper we are putting out. We are glad to have these encouraging words for they help us to work all the more to put out a better paper than ever.

When several people will come to us and say they are gettting the worth of a year's subscription out of a single issue, we feel that the Utah Farmer is doing some good.

Have our readers any suggestions as to how we can better serve them? Why not write us a letter telling how we can help you? Send in your question; let us help you with your farm problems, we can do it, and more, we want to do it

THE OLD FARMER AND THE NEW

Many changes have taken place during the last fifty years in the ideals and methods of farming. The way some farmers have of "doing like father did," does not always show the progressive spirit of today. To be a successful farmer a person must study and devote a major part of his time to the work of his farm.

Methods and machinery of years ago can not compete with the ways of today and the modern labor-saving implements used in farming. The "new farmer" makes a study of his business; he has a fair idea of soils and knows what it will produce the best. He discusses the good and bad points of tractors, plows, cultivators, manure spreaders. He reads agricultural farm papers and keeps posted on all things about his farm business.

The agricultural excursions are one of the modern ways of learning better farming The "new" farmer makes these trips. He learns what others are doing and takes the best ideas for his use home with him. These trips are doing a wonderful lot of good for the farmers of this state.

WHAT WILL THE PRICE OF WHEAT BE?

Just what price will be agreed upon for wheat in Utah seems to be quite unsettled at the present time. There is a freight rate from common points to Chicago of thirty-one to thirty-four cents. Some think that the price of wheat will be $2.20 less this freight rate. Others say that practically all the wheat we have produced will be used locally and many of the farmers think that we should get $2.20 for the wheat. The millers seem to be trying to establish a price for our wheat of about $1.70 to $1.76. Many of the farmers declare that they will not sell for this price as it is unfair.

The farmers of the Northwest say that they will keep the wheat for another year rather than sell at this price. If they do, it will materially decrease the wheat production of next year. Mr. W. W. Armstrong, State Food Commissioner for Mr. Hoover, has had no instructions about the price of wheat.

The thing for the farmer to do, if it is practical, is to hold his wheat for another week or two until this matter is definitely settled.

The farmers of Oregon, Washington and Idaho are trying to get the Government to establish a buying point somewhere on the Pacific coast. If this is done it will mean that the farmers will get a better price for their wheat.

It seems unfair that the Illinois farmers should get $2.20 for their wheat and the Western farmers should have to pay thirty to forty cents a bushel to market their wheat. Why not send it by way of Panama Canal, and establish a market on the coast?

PROFIT FROM WEEDS

Every year, in spite of the fact that the farmer is doing his best to rid his farm of weeds, certain of them persist in growing in the fence corners, at the ends of the corn rows, and in most cases in the cornfields themselves. In the fall these weeds bear seed, and so the field has a new crop each year. Every farmer is confronted with the problem of how to get rid of them and in so doing stop this continuous production of weeds.

Why not buy a double-deck carload of western lambs, next fall and let them clean up the weeds on that one hundred and sixty acre farm and at the same time put a nice little bunch of money in your pocket?

Just before you lay by your corn sow five or six pounds of rape seed to the acre and cover it with your last cultivation. This will grow a nice crop of green feed in the cornfield by the time your corn begins to mature, which is usually along in the early part of September. This is the best time to have the lambs arrive.

About two weeks previous to this place an order for a car of western lambs with a reliable commission firm in one of the western river markets. Omaha being the best for this purpose. The commission firm then has a chance to buy on a low market and get you the best lambs available. Western lambs are to be perferred to natives, because of a stronger constitution and thus less susceptibility to body parasites. Of the western lambs those from Utah, Idaho, and Wyoming arrive on the market at the most favorable time, consequently they are the best for this purpose. Lambs weighing about fifty pounds, with wide backs and loins, a strong constitution, and yet with good quality and fair fleshing are desired.

When your lambs get to the farm, they have been starved from twenty-four to thirty-six hours on the road and great care must be taken to get them back on feed. Turn them out on a short pasture for a couple of days and then the third day allow them to run in the cornfield a couple of hours. Increase this time an hour each day until a week has elapsed, when they can be let run in the cornfield all the time. Seven to ten lambs per acre can be fattend on this green feed. Many farmers will allow them to eat the corn some after the green feed is gone, but very little gain is made thereby and often losses result from bloat due to overeating of the corn. A double-deck carload, or about three hundred and fifty lambs, will clean up a forty acre field in from eighty to ninety days, varying with the weather and the amount of feed present. In this time gains of from twenty to forty-five pounds per lamb are made on the average. This gain at the same price paid for the lambs would give you a neat profit, but usually the price is higher in December than in September and the farmer gets the advantage of this.

Some expense is incurred it is true. Old feeders in this business figures on a loss of about three per cent, or approximately seventy per cent per lamb, which covers all expense such as commission for buyer and seller, freight both from and to market, shrinkage in shipping, cost of the rape seed, salt and what little corn they may eat. For what labor you are put to you get in return the loss of your weeds, and all of the manure produced by the lambs is scattered evenly over your field.

Now supposing you bought lambs at Omaha weighing fifty pounds, at 10 cents a pound, which is abnormally high this year. Keep them 90 days and put a gain on them of 20 pounds, which is a safe gain. Charge them 70 cent per lamb for expense, and you have a total cost of $5.70 per lamb. Now sell them at the same price you paid for them you get $7.00 per head, or a net profit of $1.30. But this is not fair to the lambs. Let us sell them at the current price last December of 12 cents and then we get a net profit of $2.70 per lamb, or a total of $945.00, which is clear profit.

Now let us see what the lambs have taken from the farm. The weeds and grass have disappeared with the rape, and the lower leaves of the corn are eaten off. No corn to speak of has been taken by the lambs. At the same time you have picked your usual crop of corn. All the feed is turned into manure which is scattered evenly over the field. In fact you have more fertilizer left on the farm than would have been there without the lambs. Is not this getting profit from those pesky weeds?—C. G. G.

BIG COMPANY COMING TO SALT LAKE CITY

Irving Berlin s international syncopated musical success, entitled WATCH YOUR STEP, which broke all of last season's touring records for musical entertainment, will be presented at the Salt Lake Theatre Friday and Saturday nights and Saturday Matinee, September 21-22.

Everyone associated with the production of WATCH YOUR STEP has won an enviable fame in their particular field, and this musical play is described as their joint masterpiece.

Mr. Berlin, who has given the public some of the most prolific song hits the modern stage has known, formed an idea that a musical show, written wholly in syncopated time, would catch the popular fancy of theatregoers. He seized upon the idea with enthusiasms and not long after completed the score and lyrics. Then the book was intrusted to Harry B. Smith and none could have made a better selection. Then came the selection of men and women to stage the play. The most noted were secured. Mr. Dillingham commissioned Leon Bakst to paint the production, R. H. Burnside, of the New York Hippodrome, to produce it and Helen Dryden, designer of all the covers for "Vogue," to design and furnish the costumes. The trio were given carteblanche. The result was sufficient to give theatregoers a distinct surprise.

It was the first time that a ragtime musical play had ever been offered for public approval. That it was a genuine success is proven by the fact that it played in New York nearly an entire season, in Chicago for three months, in Philadelphia for three months, and in Boston for three months. There are 75 in the cast including the famous English Pony Ballet and the LEVIDSKI Russian dancers. adv.

USE AND CARE OF FILES

The choice of a file for any particular piece of work will be determined by the form of surface to be worked, the amount of material to be removed, the nature of the material, and the finish to be left on the surface.

From the twenty different standard forms and cross-sections in which files are manufactured the user must choose the proper form of file to best fit the work in hand. Next the amount of material to be removed will determine the size and coarseness of the file. The size being the length in inches of the file body without the tang, and the coarseness depending upon the six grades of cuts—rough, coarse, bastard, second cut, smooth and dead-smooth. The bastard and second cut are the grades most used for general work, and the smooth or dead smooth for smooth finish work. All of these forms may be had as either single or double may in any grade of cut, excepting that the rough cut is usually single and the dead smooth double cut. The double cut file will bite more freely and leave a more broken surface than a single cut file of the same size.

The nature of the material worked determines in a large measure the life of the file. A new file should never be used on very hard material, such as scale of castings and forgings, or on hardened steel. Nor should it be used on soft, tough metals or on thin edges where it bites too freely. Files should not be thrown into drawers together with other tools. They should be kept clean by brushing, and should never be placed where they will rust, as that will ruin any file.

A good file handle is necessary for good work. In filing, the pressure is applied to the file on the forward stroke and entirely removed on the backward stroke, though the file need not be lifted from the work. As with all metal cutting tools, the pressure should be sufficient to cause it to bite freely, as this is easier on the cutting edge than just scraping over the surface.—A Cammack, Colorado Agricultural College.

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The Rayo Lamp gives a soft, mellow light.

The RAYO LAMP

is not expensive but you can't buy a better lamp at any price. Artistic in design, easy to keep clean and re-wick, it gives plenty of light where you want it.

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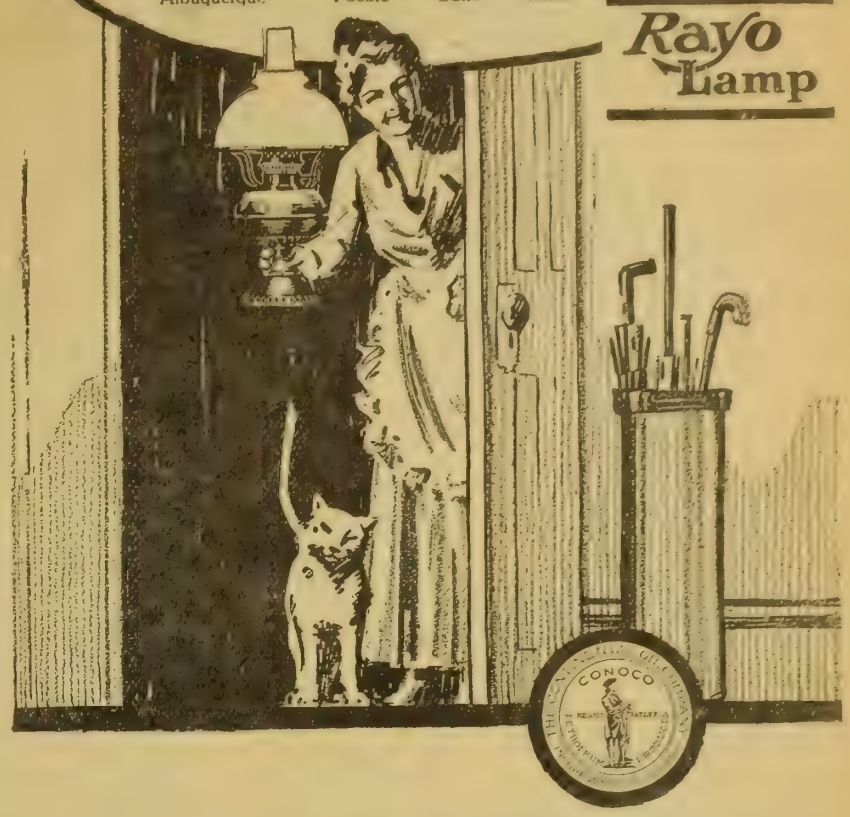
Rayo Lamp



Our Service

And What It Means To You

YOU WANT YOUR BOYS TO BE INTERESTED IN GOOD FARM MACHINERY

You want your boys, as future farmers, to farm right and you know that the right use of good implements is the basis of proper farming.

One of the features of our service to you is our keeping in stock for your inspection farm machinery that is famous for high quality. We make it possible for you to study implements at first hand—to keep in touch with the improvements that feature the perfection of better implements. And we are glad to give this service, whether you buy or not.

Now, we want your boys to take full advantage of this service. They will use farm machinery far more extensively than you have ever used it. Hand labor in their future will be mainly something to read about in stories of farming in former days. They will be good farmers of tomorrow just as most of you are good farmers of today, provided they are masters of machinery.

Your boys, as future farmers, ought to know farm mechanics. They will have the required mechanical bent either naturally or from study of machinery. They can find a mighty good place to study machinery right here in our store. And they will be mighty welcome when they come. Our stock will be at their service. We will help them personally all we can. We want our service to help the farmer of the future as well as the farmer of today.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

A club lying in the stable doorway is a telling advertisement of the man who has charge there. Invite him to leave that club in the woods, uncut.

If you want the best in Butter Wrappers send in your order to The Utah Farmer TODAY.

HOME

"FIFTY-FIFTY BISCUITS"

Have you tried "fifty-fifty biscuits" —Uncle Sam's latest idea for saving wheat flour in hot bread? You use 2 cups of corn meal, soy beans which can be home ground, finely crushed peanuts, or rice flour to 2 cups of white flour. Or you can use one cup of corn meal and one cup of ground soy beans or crushed peanuts with the wheat product.

You can make "fifty-fifty" muffins with 1½ cups of cooked and mashed sweet or Irish potato, or cooked cereal, or ground soy beans, to an equal amount of flour. Then there are "fifty-fifty" recipes for wafers and for corn-meal cookies.

How to make all these "fifty-fifties" as well as home methods for entire corn-meal gems and yeast breads and rolls made in part of finely crushed peanuts, sweet or Irish potato, soy-bean meal which can be made at home by grinding soy beans in a handmill, rice, corn meal, or cooked cereals, are described in detail in United States Department of Agriculture Circular No. A 91, "Partial Substitutes for Wheat in Bread Making." Here is a sample recipe—the one for "fifty-fifty" biscuits as worked out by Hannah L. Wessling, Specialist in Home Demonstration Work:

"Fifty-Fifty Biscuits."

2 cups corn meal, ground soy beans or finely ground peanuts, rice flour, or other substitute.
2 cups white flour.
4 teaspoons baking powder.
2 teaspoons salt.
4 tablespoons shortening.
Liquid sufficient to mix to proper consistency (1 to 1½ cups).

Sift together the flour, meal, salt, and baking powder twice. Have the shortening as cold as possible and cut it into the mixture with a knife, finally rubbing it in with the hands. Mix quickly with the cold liquid (milk, skim milk, or water), forming a fairly soft dough which can be rolled on the board. Turn onto a floured board; roll into a sheet not over ½ inch thick; cut into rounds; place these in lightly floured biscuit tins (or shallow pans,) and bake 10 to 12 minutes in a rather hot oven. If peanuts are used, the roasted and shelled nuts should be finely crushed with a rolling pin.

In making the flour and peanut biscuits the flour and other dry ingredients should be sifted together twice and then mixed thoroughly with the crushed peanuts.

HOW TO MAKE FRUIT PASTE
Use Pulp From Jelly Making.

Don't throw away the pulp left in the jelly bags after the clear juice has drained out. Federal laws prohibit the use of this substance for commercial purposes, because it might masquerade as a whole-fruit product. It is wholesome, however, and there is no reason why it should not be put to family use. One of the most satisfactory products that can be made from fruit pulp is fruit paste.

This is a type of confection or dessert and may be made from apricot, quince, gooseberry, apple, cherry, plum, kumquat, guava, and other fruits. For apricots, gooseberries, and other acid fruits use 1 pound of powdered sugar to 1 pound of fruit pulp; for quince use ¾ pound powdered sugar to each pound of pulp; and for apples ½ pound powdered sugar for each pound of fruit pulp. If desired, pulp from several kinds of fruits may be mixed. If acid fruits perdominate in this mixture, use approximately 1 pound of sugar to 1 pound of fruit mixture; if sweet fruits predominate, use less sugar.

Rub the fruit pulp through a puree strainer and weigh it. Add the sugar, put the mixture over a slow fire, and cook until very thick, so that when a spoon has been passed through it the mass does not run together immediately. Pour the paste in a half-inch layer on flat dishes, marble, or glass slabs, which have been rubbed with a cloth dipped in a good salad oil. Expose the dishes to draft for a couple of days and then cut the paste into figures. If the paste is well boiled down, it is dried more easily. The paste also can be cut with a common knife or with a fluted vegetable knife, or it can be cut in round cakes, the center of which is again cut with a smaller circular cutter; there will thus be both rings and small round cakes.

Place the cut fruit paste on paper and sprinkle with crystallized sugar or common granulated sugar. Allow it to stand again a couple of days exposed to draft, dip in crystallized sugar, and pack in a tin or wooden box lined witha parcnment paper and with layers of the same paper placed between the layers and paste. The paste can be kept thus and served as dessert, or as garnishing on creams and custards, frozen creams, large cakes, etc.

CAN YOU TELL WHEN GOODS IS ALL WOOL?
Knowledge of a Few Simple Tests Will Often be of Value.

The laws of our country at present offer no protection to the purchaser of textile materials. If the price of "all wool, a yard wide' goods is paid and later it is found that the material is half cotton, there is nothing left for the purchaser to do but to enter it as "loss" in her profit and loss account. To be sure there are any number of stores where the dealers are truthful about the textile materials handled, but nevertheless a knowledge of a few simple tests may not com amiss.

Sometimes sleazy, thin cotton material is made to look quite firm and attractive by the use of sizing or dressing. By rubbing a corner between the thumb, the sizing is removed and the real quality of the material is apparent. In very thin materials the sizing may be detected by holding the cloth to the light. The starch will show between the threads.

An examination of the raveled warp and wool threads will often reveal much. Cotton fibers are short and broken ends of cotton threads will appear fuzzy. Linen fibers are long, and consequently broken ends of linen threads are more pointed than those of cotton. Cotton material feels warmer than linen.

Some woolen materials are "made over" that is, old woolen rags and short, broken fibers, and the clippings from broadcloth are used in its manufacture. Sometimes this can be detected by unraveling the end. The short fibers are loosened and fall out. —Beryl Dixon, Colorado A. C.

DRAFT THE MEN

For months the idea has been current that conservation is a kitchen plan—the concern of the women. But it is far more than a woman-size job. It calls for universal service—for man's work, for team work, for organized neighborhood work—even to solve the home food problem.

Women have undertaken the job with the courage of Spartan mothers. But, women, the job is too big. It is bigger than kitchen economy, it is bigger than pantry-shelf storage. Draft the men for immediate service —Somewhere at Home. Draft those husbands at once to get the smokehouse in order, to put the cellar in shape for storing winter vegetables, to dig the potato pit, and to lend a hand for gathering and hauling. Salvaging food is to big a job for any woman; draft the men.

During the hot summer the women struggled over cook-stove canners and driers while the men grumbled over delayed meals. That job is too big for the women. It is too big for the outfit. It is too big for the individual family. Canning and drying are more than household jobs. They are community jobs like many other conservation problems, and call for the co-operation and organization of the community.

So, women, draft all the men. Draft the community to finance storage facilities. Draft the community to organize for co-operative selling and buying. Draft the community now to plan for co-operative canning and drying plants next year.

Do these things for your own people. Business efficiency will tell the tale. The community must take care of itself. Germany's strength in the past has been due to the fact that she could feed herself, that she had developed home resources.

The final word to each farm, community, and state is, "Feed yourself." So draft the men of your household, draft the men of your community into organized service for home defense.

CARE OF THE BINDER

Providing a shed for the binder to protect it from rain is a paying proposition, according to the agricultural engineering department of the University of Nebraska. When housing the binder for winter, all wearing surfaces should be protected against rust by covering them with heavy grease or oil that will not wash off. The knotter requires special attention because this part of the machine will cause much trouble if it is not in the best condition. Farm machinery of any kind always pays dividends on proper care.

MANY NEW FEATURES AT THE STATE FAIR
State Fair and Fall Conference at Salt Lake City Sept. 29th to Oct. 7th, 1917.

Excursion rates on Salt Lake Route. For above occasion the Salt Lake Route will sell excursion tickets from all Utah stations as follows: Nephi-Tintic district and all points East Sept. 29th to Oct. 7th. Good returning until Oct. 12th. From all other points Sept. 28th to Oct. 6th. Good returning until Oct. 15th. Extra equipment on all trains. adv.

Parowax

Keep the Goodness In

Keep air out of your preserves and the goodness stays in.

After the cap is on, just dip your fruit jar in Parowax. Makes an air-tight coating that prevents fermentation. Pour Parowax in the top of jelly glasses to prevent mould.

Parowax is easy to use and inexpensive. It is guaranteed under the Pure Food and Drugs Act.

Sold in handy one pound cartons by grocers and druggists everywhere.

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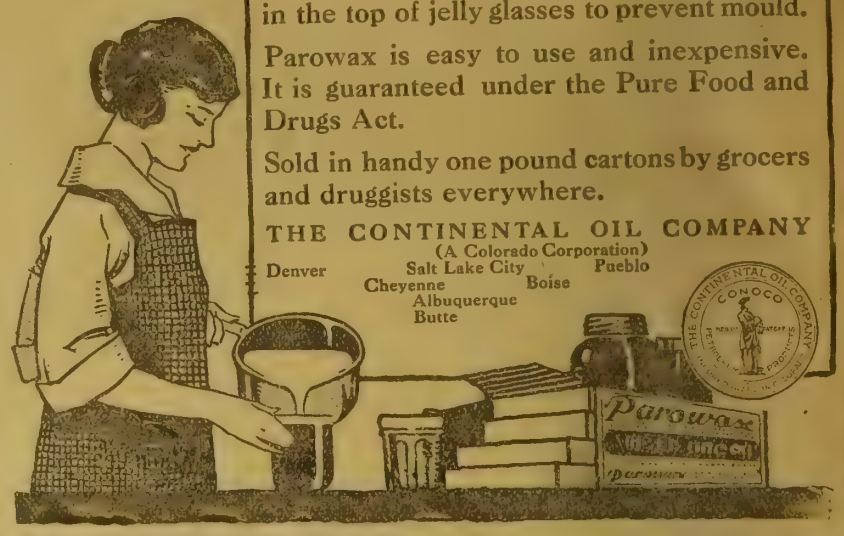
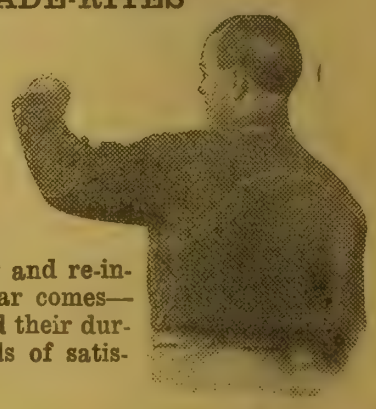


Solve The Shirt Problem

By Buying "MADE-RITES"



You will learn what comfort and service a real work shirt can give.

They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

The Modern State Fair

Written for the Utah Farmer.

Fairs are Educational Institutions.

We expend vast sums of money in maintaining our Federal and State departments of agriculture and agricultural and educational institutions. We have today employed in America, thousands of specially trained men, many of whom are prominent in science and original research, bending their energies toward making agriculture more profitable, and have difinified it as a profession. At the great modern fair there is more opportunity for the general public to get the advantage and benefit of the results of the work of these great experts, who are spending their lives for the benefit of agriculture.

To visit one of the great schools of agriculture and see the hundreds of plots of wheat and cereals undergoing experiments, discloses how they work, but the general public is not so much interested in how a thing is produced, as it is in how they can produce that which has been found by infinite experiments, to be the best. The public wants the best, and it wants to ascertain in what character of soil and climate it has been produced, and when they know all these facts, they determine whether or not it is possible for them to equal or excel. The only possible way for the general public to see and compare the cereals, grasses and fruits, is at the great modern fairs. Each exhibit has a great history behind it, but the public is not so much interested in the history of the past, as they are in their future, and their capabilities to produce as good or better.

The Uses and Purpoes of the Modern Fair

These are the uses and purpose of the modern fair: For the material advancement of the public in wealth, and all our national prosperity is founded upon agricultural prosperity. No single factor in that prosperity is of greater importance than the modern fair, because people learn more from what they see and hear, than from any other way. No one can learn so much in so short a time as they can at a fair. This is not only true of the mature man and woman, but perhaps still more true of the boys and girls. Their young and impressionable minds take on ideas and ideals which they carry with them as long as they live. Consequently the great modern fair is for the benefit of all, both young and old, regardless of occupation being followed or to be followed.

Entertainment Features Not Forgotten

A modern fair cannot be covered in all its salient aspects without mentioning the attractive features. It is an old adage which says, "All work and no play makes Jack a dull boy." All work and no relaxation produces sordidness. All study and effort without some mirth and frivolity tends to discontent and irritability. Fair managers realize these truisms and, while they realize the educational features are the fundamental features of the great modern fair, they also realize that the attractions and amusements occupy a most valuable place, therefore, they make a studied effort to have a clean, wholesome entertainment to drive away dull care for a time. There are many attractions to be seen at the great modern fairs that are too expensive to be carried by the great traveling shows. They can only be afforded by great crowds and audiences, such as are to be found at the great fairs. These attractions and amusements add materially to the pleasures of the fair, and have come to stay as a componant part.

Chance to Renew Acquaintances.

The social feature is no small part of the fair. It is a great thing to be able to meet your friends at least once a year on the old fair grounds, renew acquaintances, renew friendships, and commune with each other as to the present and future. If the fair served no other purpose than as a great social feature, it would still be worth the time and money spent.

Therefore, taking the great modern fair in all its parts, from every viewpoint, it is one of the greatest institutions of modern civilizaton. Its benefits are many, and he is fortunate indeed, who can take a week off and attend a great modern fair.

The 1917 Utah State Fair.

From assurances that come from every part of Utah it is safe to assert that the Fair of 1917 will be the most, comprehensive ever held in the West. This years fair is considered a part of the government's campaign for increased food production and is known to the officials in Washington as "Utah's Food Training Camp."

Besides the splendid agricultural and animal husbandry exhibits, a spectacular entertainment program has been prepared. Horse racing, auto racing, auto polo, circus acts, and a gorgeous, pyrotechnic display entitled, "The War of Nations." This is said to be the most thrilling exhibition ever brought to Utah. Excursions will be run from all parts of the inter-mountain country to Salt Lake City.

Perfect Jelly

is the pride of every housewife. Be sure your fruit is freshly picked and that you use

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

made from western-grown sugar beets. Write for our free recipe book.

This superior sugar is for sale at all dealers, in 10, 25, 50 and 100 pound bags.

"Buy it by the Bag."

Made by

UTAH-IDAHO SUGAR COMPANY.

THE WELL-EQUIPPED WORK SHOP.

I. B. Henderson.

A farm that is blessed with a convenient workshop will not be responsible for large repair bills. With the constantly increasing use of machinery it is becoming very important that leaks of this nature should be kept down to the very lowest point. With a large investment in equipment and a relatively high demand for small repairs, the prospects of making a profit on the year's work are reduced considerably.

All farm equipment is subject to wear and tear and often this leads to breakages when we can ill afford the time to make repairs. But many of the breakages could be avoided by making repairs early and by replacng defective parts when it becomes evident that lost time will be the result of delay. The care which all equipment should receive has special reference to shelter, painting, lubrication, tight nuts and bolts, bearings in good running order, cutting parts sharp, and all breakages, whether of wood or metal, repaired.

In some farm workshops we find small blacksmithing outfits, and it is quite evident that these prove very useful during the course of the year. But of course, these should not be allowed to take the place of the reliable shop for the really important work. As a convenience for making such improvements as can well be done on the farm, tho, a small smithing outfit comes very handy. Breakdowns are more frequent during the busy season when one is not inclined to make a trip to town if the repair can be made at home.

The main parts of a blacksmithing outfit would consist of a 100-pound anvil, forge, anvil hardie, hammer, tongs, cold chisels, punches and drills, bench vise, etc. Where conditions would warrant it a more complete outfit could be purchased, but that which we have given, together with the various common woodworking tools, would answer quite well. With a few tools of the nature of these there would be every encouragement to putting all machinery and equipment into good working condition during spare hours. Why not arrange a corner of the implement shed, and equip it with a work bench and a few of the more necessary tools, so that repairs would be attended to promptly and the liability of breakage reduced?

Moline Foot-Guide Beet Puller

Meets Every Condition of the Beet Field

When the sugar factory gives the word to "Pull," be ready with a Moline Foot-Guide Beet Puller to insure quick and perfect work. The Moline Foot-Guide was especially designed to facilitate every operation at harvest time and has advanced features of convenience, adjustments and control possessed by no other beet puller.

Foot-Guide Control Is Positive and Quick

Irregularities of the beet rows may be followed without regard to movement of team—pulling point always in line and runner lifts whatever front wheels straddle.

Short turn is another exclusive Moline feature. Front wheels may be raised clear of the ground, allowing machine to turn on two wheels at ends of rows—a time saving feature in fields with irrigating ditches.

Large, wide, adjustable main wheels and strong, properly placed standards give correct set to runners, insuring perfect raising of beets of varying sizes, without cutting or bruising them. Rolling coulters cut trashy tops—prevent clogging.

Moline Foot-Guide Beet Puller is built for two or three horses; is extremely light draft, due to four wheel construction and proper balance. High carbon steel construction and strong bracing insure permanently dependable service.

MOLINE Walking Beet Puller

is popular with beet raisers everywhere because of its simplicity and efficiency. Pullers are strongly shaped with an easy downward curve and straight runner—raise beets out of the ground gently without bruising them. Chilled points and diggers add greatly to long life under hard service, are easily detachable. Lifting rods adjustable up or down to meet different requirements.

Ask your Moline Dealer about the Moline Foot-Guide Beet Puller, or write us for Illustrated Literature.

Address Department 33

Moline Plow Company, Moline, Illinois

Manufacturers of

Plows, Harrows, Planters, Cultivators, Listers, Stalk Cutters, Hay Loaders, Side Del. Rakes, Dump Rakes, Potato Diggers, Grain Drills, Lime Sowers, Seeders, Rice Binders, Grain Binders, Corn Binders, Mowers, Reapers, Spreaders, Scales, Wagons, Vehicles, Farm Trucks

Moline-Universal Tractor *Stephens Six Automobile*

For Over 50 Years The Mark of Good Implements

CONSERVATION SPELLS VICTORY

President E. G. Peterson.

"Working in harmony with the United States Department of Agriculture and the National Food Administration, I wish at this time to call to the attention of the people of the West the urgent necessity of having perishable products as largely as possible replace in their diet products which can be easily stored for future use. It is evident that as the year develops we will be forced to continue indefinitely the measures of production and conservation which have so vigorously been carried on throughout the State, and the necessity of saving as much as possible of the non-perishable crops of the State by using in the diet the perishable products is a measure calculated to effect an immense amount of saving. Save the non-perishable food for those who are in greater want than we and relieve the railroads of the burden of transporting quantities of food which should come from local production. I am urged by both the Secretary of Agriculture and the National Food Administration to bring this matter very strongly to the attention of the people.

"I wish to urge again the necessity of each family canning, drying, pickling, preserving, or otherwise preparing for future use the surplus product of the farm, and of each family preparing now for the storage of the surplus products of the community. See that bins, pits, granaries, and cellars are cleaned and in condition for the harvest. Build new ones when necessary. This important work, to be successful, must be done by the farmers and the women on the farms. The work already done has been very successful, but the activities in the near future must be even greater if we are to take full advantage of the opportunity we now have to save our precious food supply.

"Never before in the history of the world was food so precious; never was energy worth so much. Food now means human life."

Co-operative organization of farmers, adoption of proper standards in variety, production, package, preparation for market, and grades of quality are the natural steps of progress. Standards of quality can be maintained only by the most rigid inspection and State and Federal authority are of great benefit.

Corn was the steady ration of a million slaves in Southern States prior to the Civil War, and it kept them in excellent physical condition.

BEET TOPS

(Continued from page 2)

higher with immature beets and beets in vigorous growing condition and lower with fields of low fertility.

The yield of tops as dry as they can be prepared in the field and which you can haul off a field will be 10 to 15% of the weight of beets harvested.

If alfalfa hay is worth $15.00 the ton, the dry beet tops of a normal acre of beets, certainly yielding more tuan a ton, are worth at least as much.

The value of beet tops should be calculated in the returns from an acre of beets.

LARGE BEET ACREAGE THINNED BY ONE FAMILY

Geo. H. Watts, Agricultural Superintendent, Utah-Idaho Sugar Company, West Jordan, Utah.

Mr. Charles Bullock and family of seven children, three girls and four boys, ranging in age from eight to seventeen years, of Draper, Utah, have thinned beets for farmers in that part of the county amounting to sixty-five and seven tenths acres, and for thinning this number of acres of beets the family has received a total of $483.80. This money has been a great help to the family and goes to show what the little ones can do to help maintain the home. This labor was done in between 5 and 6 weeks time.

There is also another party who has done considerable toward the development of the Sugar Beet Crop this year, Mr. C. W. Barker and sons of Taylorsville, Utah, who have thinned and taken care of twenty-two acres of beets. They have not only thinned but cultivated hoed and irrigated this number of acres and this has not been accomplished by simply working a few hours each day but by working from sunrise to sunset each day.

As acts of loyalty to our Nation in these perilous times, these are among the foremost in that they show how children, as well as grown-ups, can help produce a food product for our nation as well as for other nations dependent upon us for their food.

This statement is not published in a boastful nature but to see if it can be the means of encouraging each one to see the necessity of doing his or her part now that so many of our boys have been called to serve our Nation, and the scarcity of labor is upon us, for when I see some of the exisiting conditions, some that have actually come to my personal notice, where many boys seemingly have nothing to do, and in several cases where there were boys in the family applications were made to this company for help to care for their beets, some having as small as three acre patches, it makes me wonder if some of we parents are not to blame for some of these conditions.

Another though I have in mind is that now is a very good time for the farmers to clean up their ditch banks and get rid of the weeds that are now ripening so that the wind will not scatter the seeds broadcast over the fields. This means not only their own ditch banks, but to see that his neighbors is also taken care of, for it for it we ever expect to reduce the different destructive insects to a minimum number, we have certainly got to clean up the breeding places. There is, for instance, the Army Worm, a very destructive insect which is now quite prevalent in Salt Lake County due to the fact that weeds have been allowed to grow and pile up thus affording excellent breeding places for these insects. In several cases this worm has left the weeds and worked on the beets stripping them of their leaves and thereby reducing the tonnage of the beets very materially.

[illegible] of these conditions, I think it is the duty of every farmer [illegible] farm is free from weeds [illegible] one will do this, we will have less weeds, less destructive in[illegible] and the cost of producing our [illegible] very much lessened.

Utah Farmer:

DEAR SIR:—Which is the best way to secure the beet tops for feed and how long can one feed them or keep them in shape to feed. I am taking quite a number of farm papers but your sample copies are the only ones I've had that tell the how and why of beet culture. This being my first year at the business I need such help and even if I stay at it which I expect it will always help. I am

Your truly,
James Wood, Jr.

Answered by James W. Jones.

Replying to inquiry regarding the most economical way of feeding sugar beet tops: The practice that seems to be most common in the inter-mountain country is to turn stock into the fields after the beets have been harvested and hauled off and let the stock graze the tops and crowns off at will. Even though practically all of the moisture has evaporated and the tops and crowns appear to be entirely dry, stock of all kinds will eat them. Often, we have noticed that cattle will "paw" into the snow and uncover the tops and crowns and eat them with a relish. Sometimes, the excess salts in the crowns of the beets will cause stock to unduly "scour" and therefor the tops thus fed is not always best for cattle that are being fattened. Not all crowns have sufficient of cathartic properties to bother, however.

The above described method is not the most economical method of handling the tops and crowns. A better method is to haul the tops and crowns off the field and stack them in alternate layers with straw, convenient to the winter feed yards. The straw will take up the excess moisture in the tops and crowns and thus prevent the tops and crowns from rotting, when put into piles or stacks. The straw is also made more palatable and if the stack is properly topped out to prevent rains from spoiling the stack, the combination of tops, crowns and straw will give an unusually good quality of roughage. It may be fed to cattle, horses or sheep.

The article entitled "Beet Top Silage" in the August 25th issue of the Utah Farmer describes the very best method of handling beet tops and crowns. In your Montana country, this silage will have an especial value because silage material is not so plentiful in your district as in some other of the sugar beet growing areas. Silage furnishes a succulent feed that is relished by all kinds of livestock. Some years ago, many stockmen thought the silo was a good investment for the man in the dairy business but of no particular value to the beef producer. The succulent silage is valuable for feeding to many different kinds of livestock under many conditions. When properly handled, beet tops and crowns will produce a quality of silage equal to the best corn silage. The article above referred to describes a method of making beet top silage without investing in a regular silo. It should be of especial interest to the Montana and other northern beet growers.

SUGAR BEET COMMITTEE OF FARM BUREAUS WILL MEET

President D. D. McKay of the State Farm Bureau has sent out letters to all the county bureaus, asking them to appoint a committee-man to meet at Salt Lake City at the end of this month to consider the question of beet contrates 1or 1918.

If all the farm bureaus sends their committee-men, there will be about twelve to fourteen who will discuss this question when the committee meets.

Some farm bureaus are now making careful survey to find out the cost of producing a ton of sugar beets under various conditions. This information will be ready for the committee when it meets. It is planned to have a conference with the sugar people at that time.

A meeting of the State committee and a representative from each county bureau will meet at the same time to consider other important matters of farm bureau work.

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WM. WARNER, A. G. P. A., Salt Lake City, Utah.

SIMPLE

"Pap," said a colored youth, "Ah'd like you-all to expatiate on de way dat de telegraph wo'ks."

"Huh! Oat's easy 'nuf, Rastus," said the old man. "Hit am dis yere a way: Ef dede was a dawg big 'nuf so his head could be in New Yo'k an' his tail in Bosting, den ef you all tromp his tail in New Yo'k, he bark in Bosting. Is you understand, Rastus?"

"Yessah! Yessah! But how am de wireless telgraph?"

For a moment the old man was stumped. Then he answered easily:

"Jes prezactly de same, Rastus, wid de exception dat de dawg am 'maginary."

STORING VEGETABLES FOR WINTER

(Continued from page 3)

first to consider storage for the year is at planting time. Depending upon the length of our season we should so plan the planting time of our storage crops so that they will be fully mature and ready to harvest and store before the severe frosts of fall. These bright, cool, and sunny September days are excellent for the proper maturing of our crops and as one author expresses it, seem to be made for that particular purpose. Only sound vegetables that are in a normal, healthy, and matured condition should be stored for the most part, and these should be gathered during dry weather if possible. Immature or moist vegetables will be the sure objects of speedy attach by bacteria and fungi, and that means decay and deterioration. Overripe vegetables should also be avoided as they likewise decay rapidly. One of the most frequent conditions in the storage cellar inviting disease and loss is the injuring or wounding of the plant tissues in the process of gathering and storing vegetables for winter, and the consequent furnishing of good feeding grounds for disease-producing organisms which cause storage rots and other diseases. Care and judgment are both neecssary attributes in the garden at harvest time.

In storage cellar or pit there are three factors which should be given careful consideration. These are: ventilation, temperature and moisture, or humidity. Of these, ventilation is probably the most important because by it the other two can be more or less controlled. By means of the ventilation flues properly placed the cool air of night is introduced into the storage house where it keeps the room cool all the next day, the fues then being closed during the day to exclude the warm air. During the winter time the ventilating hours can be reversed, the flues then being closed during the cold nights when there is danger of freezing and opened during the day to let in the warmer air to raise the temperature of the cellar and prevent freezing.

The importance of ventilation will be much more appreciated if it is remembered that all live plant tissues breathe just as animals do. And at this point it might be appropriate to add that if you hear anyone say that the breathing of plants and animals is just opposite—that animals take in oxygen and breathe out carbon dioxide while plants breathe in carbon dioxide and give off oxygen, or that plants are a good thing to have in a sick room at night because they give off oxygen —you can brand such statemtnts as inaccurate and confusing. Living plant tissues breathe the same as animals do—take in oxygen and give off carbon dioxide. And they do that night and day and all the time. In addition to that process green plant tissues have the ability in the presence of sunlight to take in carbon dioxide and combine it with water to form carbohydrates and in doing so they give off oxygen as a by-product. But the two processes—respiration and food manufacture—are separate and distinct and should not be confused. But that is another story. So the vegetables in your cellar must breathe, therefore, and they need fresh air just as you do. If ventilation is not provided the carbon dioxide which they give off accumulates about them and where that is the case, experiments show that decay sets in much more rapidly than when oxygen is available. This condition occurs in the transportation of peaches and causes what is known as "ice-scald."

GREEN FERTILIZER

Some of the farmers have suggested that they will cut the third growth of alfalfa for hay and then plow under the fourth growth, which, under normal conditions will amount to the equivalent of nearly a ton to the acre.

The important feature to be kept in mind, in plowing under a green crop, is getting it plowed under in time to have the tops and a generous part of the roots thoroughly decayed before next spring. It is necessary to have both heat and moisture available if rapid decay is to be had.

The field should be well irrigated and the plow should be fitted with a rolling coulter and then, too, it may be necessary to attach a chain to the plow beam in order to turn the green tops entirely under and leave no portion of the tops not fully covered. If the plowing is delayed too late, the weather is liable to be too cold for the mass of green stuff to decay and instead of it rotting, it is liable to be put into "cold storage" until next spring and that, of course, would defeat a very large part of the desired value.

With the prevailing high price of hay, it takes a good deal of courage to turn under a growth of alfalfa that will yield a ton of cured hay that will easily bring $15 per ton. This would be the equivalent of a value of $12 per ton, after deducting the cost of cutting, curing, stacking and marketing. $12 per acre is pretty steep for fertilizer. On the other hand, by delaying the plowing for the fourth growth, failure to have the turned under crop to properly decay, may bring considerable disappointment but it will surely be better than to leave the alfalfa field not plowed until spring, if it is desired to put in beets on the land next season. For corn, on many soils, it is entirely feasible to delay plowing the alfalfa until considerable growth has started next spring and then plow under but to get the largest results for a beet crop for next year and for two or three years to follow, it is best to plow while the weather is yet warm. Let a roller follow the plow. Then follow with a leveler that will firm down the surface and "seal up" the green crop. Don't forget to have the field wet down before starting the plow.

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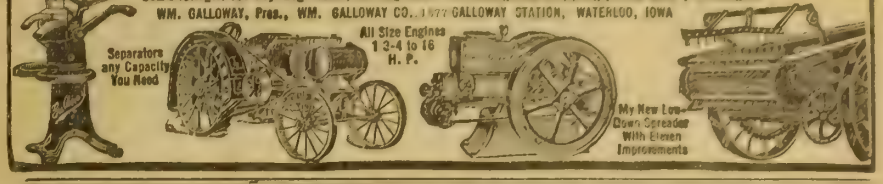

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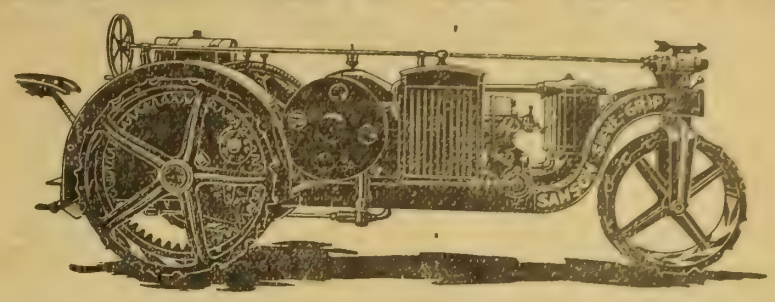

This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns kerosene or distillate, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price $1,600.00, delivered on cars at Salt Lake. Tractors on hand for immediate delivery.

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Game Warden—Hey, kid, what have you been catching there? Trout, eh- Don't you know this ain't the season for trout?

Small Boy (fishing)—Sure; but when it is the season for trout, there ain't any around, and when it ain't the season there's always a lot of 'em. And if the fish ain't going to obey the rules, durned if I am, either.

LIVE STOCK

CORN SUBSTITUTES FOR HOGS

Farmers Can Reduce Amount of High-Priced Corn Fed to Hogs by Using Substitutes.

Farmers can reduce the amount of corn fed to hogs by substituting other feeds for corn. This is especially desirable with high-priced corn and its increased need for human consumption. Pastures and forage crops properly used can reduce the corn and other concentrated feeds fed to hogs from one-half to one-fourth. There are, moreover, many feedstuffs which can be substituted for the other portion of corn. Their use will be determined largely by their availability, relative feeding value, and cost per pound as compared with corn. Hog feeders, by getting in touch with the feed-manufacturing industries in their section, may discover profitable substitutes for corn. Feeds unavailable for human consumption should be used as far as possible.

A number of substitutes for corn with suggestions for their use are given below. The feeding value, methods of feeding, and the highest relative cost of a pound of each feed to a pound of corn at which profitable substitution can occur are given for each feed. For example: A pound of feed with a feeding value four-fifths that of corn must cost at least one-fifth less before substitution is profitable purely from a monetary standpoint.

Oats after crushing have three-fifths the feeding value of corn. They can be substituted profitably for corn, therefore, when a pound of crushed oats costs two-fifths less than a pound of corn. In a fattening ration, oats should not compose more than two-thirds of the ration during the early part of the feeding period and should gradually be reduced until, during the last 4 or 5 weeks, they are entirely omitted from the ration. Oats are excellent for adding bulk to a ration and are especially good for brood sows.

Barley when crushed is an excellent feed for swine and can be substituted entirely for corn, even when it costs the same per pound.

Rye when costing nine-tenths as much as corn per pound can be substituted for corn in the ration. It should be fed ground or crushed and is best fed as a slop.

Frosted wheat or wheat damaged in other ways and unfit for milling can be substituted even when equal in cost to corn per pound. Wheat should be ground, crushed, or soaked.

Emmer or spelt is a bulky grain. It can be substituted for corn when costing three-tenths less per pound. A partial substitution is best. This feed should always be ground and is best when fed as a part of the ration along with concentrated heavy meals to give bulk to the ration. A combination of corn and emmer proves far superior to emmer alone.

The grain sorghums, kafir, milo, and feterita, may be substituted for corn when slightly lower in price per pound. They should be ground and fed as a meal.

Millet can be substituted for corn when one-fourth cheaper per pound. Millet should be ground and fed always with a rich protein supplement. For fattening hogs in cold weather it is not so good and produces a soft pork.

Cull beans can be substituted for corn if below the cost of corn. Beans make soft pork and always should be cooked and salted before feeding. It is better to substitute the beans for but one-half the corn and so prevent soft pork and increase the gains.

Wheat shorts or middlings are a by-product of the milling of wheat. While a feed high in protein, it can be substituted for corn when one and one-tenth the cost of corn. It is best as a nitrogenous supplemental feed and when forming but a part of the ration. Owing to its heavy, pasty nature, if fed alone for a long while digestive troubles are liable to occur. No protein supplement is necessary for a ration of shorts, though lime, in which shorts are low, should be supplied.

Pea meal can be substituted for corn when costing one-twelfth more than corn. It needs no protein supplement, but, owing to its close nature, should be fed with a bulkier feed. It is best used as a partial substitute. A fine quality of pork is produced by pea meal.

Weed seeds from grain elevators can be substituted for two-thirds of the corn in a ration. They should be ground and cooked before feeding.

Cracker wastes can be substituted as one-half the grain ration. It can be fed dry or moist, but, owing to its saltiness, the hogs require more water. It is constipating and should be fed with oil meal or bran when in a dry lot while green forage crops will counteract its costiveness during the grazing season.

Bakery wastes and ice-cream cone wastes can be substitued for corn when available at reasonable prices.

Garbage is well utilized by swine. Care must be used in feeding to remove soap, washing powders, glass, etc., which may kill the pigs.

There are many wastes and by-products from other industries, such as canning factories, which are of feeding value to swine. It should be remembered that, with bulky by-product feeds such as distillery grains, brewers' grain, and pea cannery refuse, the hog, owing to his digestive system, can not utilize these as well as cattle and sheep.

When the prices of corn and of nitrogenous by-product feeds such as bran, peanut meal, soy-bean meal, velvet bean meal, linseed oil meal, tankage, fish meal, etc., are relatively close, a larger amount of these concentrates high in feeding value can be fed and partially substituted for corn. This will naturally increase the percentage of protein in the ration.

NO TIME FOR HOG CHOLERA

Burning $16—hogs that have died of cholera is no pleasant duty. The Nation, moreover, cannot afford the food loss involved. During the year ending March 31, last, hog cholera caused losses in this country of more than thirty-two million dollars.

Every hog raiser can aid in preventing so great a loss from cholera recurring this year. Keep the hogs healthy. Clean pens, clean water and right feeding increase the hog's resistance to disease.

Effective control of hog cholera requires more than individual effort. It requires neighborhood co-operation. When cholera appears in a vicinity all hogs on neighboring farms should be promptly treated with serum or serum and virus.

Quarantine of the premises where there is cholera or where herds have been double-treated should be enforced for a reasonable time. Hogs dying from cholera should also be quickly burned or buried, and a thorough disinfection made of the yards and pens before the quarantine is removed.

BALANCED RATIONS SAVE DAIRY FEEDS

Dairymen can solve the feed shortage by the same method that people are using to solve the food shortage: They can make what they have go further. If food economies can result in feeding more people with the same amount of food, the same feed can feed more cows.

No one advocates the killing of part of the people in order to provide an abundance of food for the rest. It is not more necessary to kill large numbers of dairy cows because of a short feed supply. Such action, moreover, taken in the face of our national need for dairy products, would be calamitous.

Dairymen who feel the pinch of feed shortage will do well to give special attention to balancing their herd rations. A balanced ration is an efficient ration. It means making the most of the feeds used.

Unless a proper balance between the protein and fat and carbohydrates contents of the ration is maintained waste is certain. This waste may be either in feed, in production, or both.

When the production of a cow is limited by the amount of protein in her ration the addition of more carbohyrates and fat does not help the situation. More fat and carbohydrates in that case only increases the amount of fat the cow is able to put upon her back.

The extra fat constitutes still another waste of feed. The dairy cow does better work when not in a beef-fat condition. Not only does extra fat on her back mean lost energy in putting it there, but additional lost energy in vitalizing and maintaining it.

Though seldom the case, carhohydrates and fat may be the limiting element in the ration while there is an excess of protein. This is more serious than an excess of carbohydrates and fat, for protein is more difficult and costly to obtain.

The fine point in feeding dairy cows is to use such feeds in such amounts as will give the greatest production at the most profit. This calls for balanced rations. With feed prices at their present altitudes it will pay dairymen to make a special study of their feeding practices.

HOGS BRING BIG PRICE

One day last week, Mr. John W. Hess of this city, sold 57 head of hogs and he received 17½ cents per pound live weight. The animals averaged 195 pounds each and the lot brought $1,945.12, which is some price for fifty-seven hogs. Time was when that many beef cattle would bring no more.—Box Elder News.

POTATO "DON'TS"

1. Don't injure the selling and storing quality of your potatoes by careless digging.
2. Don't glut the fall market and injure your winter market by placing large quantities of ungraded stock on the market at harvesting time.
3. Don't ship any frost-damaged potatoes. It is disastrous.
4. Don't demoralize the already overburdened transportation facilities by shipping cull potatoes. Unless potatoe sare extremely high in price, culls will not bring transportation charges.
5. Don't overlook the advantages of "machine sizers." They are proving of great value in many shipping sections.
6. Don't expect machine sizers to grade for quality—only human hands can grade out the defective tubers.
7. Don't mix No. 1 and No. 2 grade potatoes. There are customers who desire each separately, but do not want them mixed.
8. Don't overlook the potato grades recommended by the United States Department of Agriculture and the United States Food Administration.

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Has Imitators But No Competitors.
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As a Human Remedy for Rheumatism, Sprains, Swellings, Stiff Joints, etc., it is invaluable. Price of Caustic Balsam $1.50 per bottle, delivered. Use it according to directions, and if not satisfied, write us for our money back.
The Lawrence-Williams Co., Cleveland, O.

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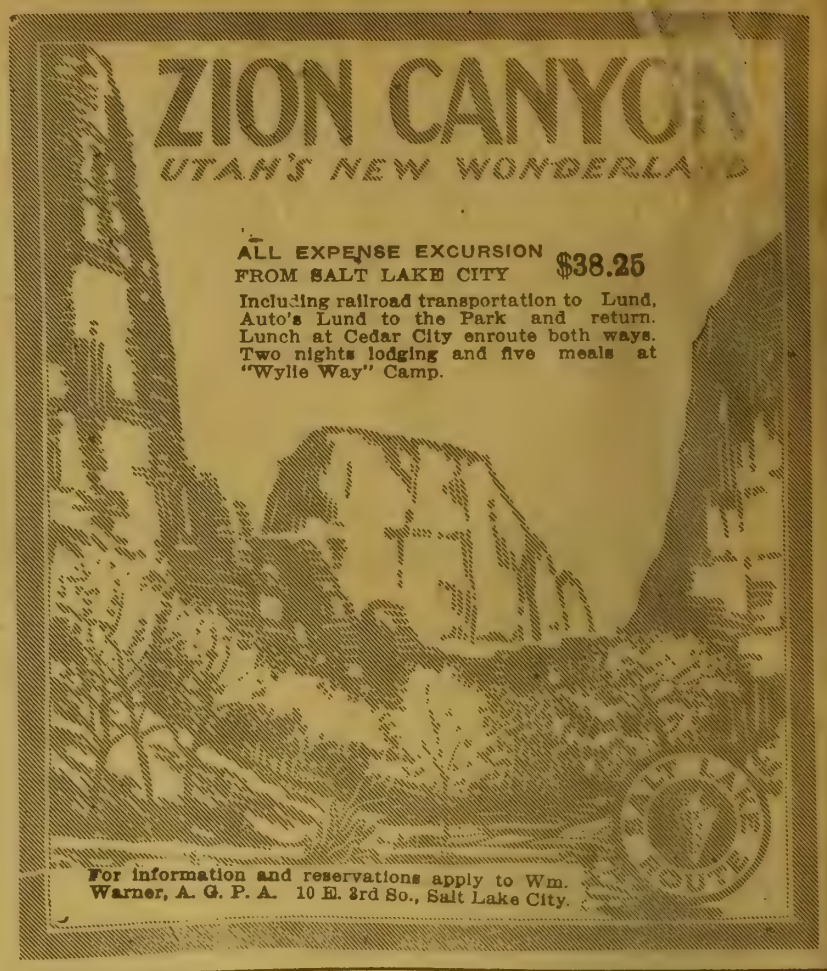
UTAH'S NEW WONDERLAND



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The Potato Market

M. H. Greene, Field Agent in Marketing, Extension Division of U. A. C. and Bureau of Markets Co-operating.

The marketing of this year's potato crop is causing exceptional interest at present. Dealers are silent in their predictions as to what the future price will be. A Salt Lake dealer had this to say last Saturday, "The price is on the decline and I am having a hard time to break even in selling nine cars of potatoes I purchased last week, I am not buying now." A letter dated August 27, received from one of largest potato dealers on South Water Street, Chicago reads: "The potato market has been a puzzle this summer, whenever we expected prices to increase they decreasd and whenever the prospect seemed poor it tided over for better than we expected. It looks as though the price of potatoes would be fair this fall on account of a great amount of speculative buying which will undoubtedly occur. Predictions are, that prices will be lower in the spring because of the dumping of large quantities on the market at that time."

The unusually large crop predicted by the Federal Bureau of crop estimates of over 460 million bushels of potatoes has caused no small amount of anxiety on the part of potato producers who fear on over production. It is not unreasonable to believe, however, that on account of the prevailing high prices of agricultural products and the abnormal demand that fair prices will prevail this fall as more potatoes will be consumed than ever before.

Potatoes a Good Substitute for Flour.

At fair prices not only will more potatoes be used in the home thus occupying the place of more expensive foods but potato bread will be substituted for wheat bread. It is as appetizing and is said to have practically the same nutritive value as other breads.

Time to Sell.

The following table shows the potato production of the United States from 1910-1917, and the average farm price of potatoes per bushel for each month from September to May during that period:

Season	Production in bushels	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1910-11	349,032,000	.73	.68	.56	.56	.54	.55	.55	.55	.63
1911-12	292,737,000	1.14	.88	.76	.80	.85	.94	1.02	1.17	1.27
1912-13	420,647,000	.65	.51	.46	.50	.51	.53	.52	.50	.48
1913-14	331,525,000	.75	.74	.70	.69	.68	.70	.71	.70	.71
1914-15	409,921,000	.75	.65	.53	.49	.49	.50	.50	.48	.50
1915-16	359,721,000	.51	.49	.61	.62	.71	.88	.94	.98	.95
1916-17	285,437,000	1.09	1.12	1.36	1.46	1.47	1.72	2.41	2.35	2.80
1917	467,000,000									

It is apparent from the foregoing table that in normal years when potato production was high, it proved profitable to sell the crop early in the fall and when the crop was deficient prices naturally increased in the spring months. When production was about equal to the demand prices remained about the same through the marketing season as in 1913-14. It does not always pay the farmer to hold his crop. Those who held in 1911, 1915, and 1916, profited greatly by so doing, while those who held potatoes in 1910, 1912, and 1914 took less for their product in the spring. In the long run the farmer will do the best by marketing his potatoes gradually through the season. This will insure him an average price for his locality. Growers need not expect to receive abnormal prices like those of last year.

Type of Market Potato.

Potatoes of inferior quality usually contain the following defects: undersize, coarse, scab, dry rot, blight, rust, immaturity, second growth, irregular shape, hollow, cut and bruised. The market desires a smooth, medium sized, oval white potato. We must exercise greater care in handling potatoes from the field until in the hands of wholesaler and establish uniform grades in making our sales. It is the inferior potatoes that bring down the price of those of excellent quality.

Conclusions.

Market potatoes of the best quality. The better the quality, the wider the market for Utah potatoes and the higher and more certain the price.

Do not store all of your potatoes this fall, but sell part of the crop if prices are fair, as often, in case of years of increased production, prices are higher in the fall than in the spring.

Growers should study the potato market to know when and where to sell.

—o—

THE HOPE OF AGRICULTURE

Holstein-Friesian World.

Abraham Lincoln said of the boy, "He is the inventor and owner of the present and sole hope of the future, and men and things everywhere are ministering unto him."

Do we appreciate the importance of the boy? Do we realize that, as Lincoln said, he is the sole connecting link between us and the wonderful future? Are we taking steps to win him to our agriculture? Would we have the fear of world famine staring us in the face if we had considered the boy question a little more intimately, a little more clearly, a little more unselfishly?

To argue boys' worth from whatever standpoint would be as useless as it would be to debate the value of daylight, and yet many of us, particularly on the farms, do not begin to approach this all-important matter as we should and to accord to the boy his proper fitting, in the general scheme of things. His is a large place.

We have at present in these United States some 16 millions of boys, ranging in age from five to 20 years. A proper proportion at present are on farms, but the burning question is, will they stay there? The answer rests with the men who today guide the destinties of agricultural America and with the farmers themselves. If they fail to appreciate the qualities of youth or to recognize the importance of cultivating the boy as they should, they will sink their magnificent industry into the lowest depths of oblivion. For youth alone can build it permanently.

Here's an apperciation of the boy writen by some master hand and worthy of careful study; it may help to bring some of us to a better realization of the important position the future citizen occupies in our matters of time and place:

"He's in your own home or next door or down the street or road—any street or road anywhere between Eastport an San Diego.

"He's playing marbles or mumbly-peg or limbering up his muscles for the unofficial opening of the real major league—if his trousers stop at his knees. If they drape his shoe-tops, he's 'sprucing up' to shine before his latest 'best girl,' or wondering when the boss will give him a raise or what he'll be able to do when war comes or any one of a thousand other things that have provided a supply of mental question marks for youth since the boyhold of Adam's first born.

"His incalculable horsepower of energy, inquisitiveness and enthusiasm carbonates the whole cup of life and keeps it bubbing over. His fine disdain of caste constitutes a divine declaration of independence. He is the original democrat and all the seeds of revolution sprout first in him.

"Nature has made him a radical and primed him with a love for liberty. His dreams are the pillars of progress. In the carpenter shop of Nazareth he catches a gleam of the true meaning of plummet, square, and level, and plans the Sermon of the Mount.

'Swinging his bare feet from a quay in Genoa, he wonders what else besides the setting sun is in the western sea—and uncovers a new world."

Agricultural America needs the boy, and the leaders of thought and the doers of deeds who would mold and guide the destinies of the business of feeding the world must wake up to the importance of getting their just share of boyish enthusiasm at work upon the farms.

Summer Excursions Bulletin

Via

UNION PACIFIC SYSTEM
O S L R R
SCENIC ROUTE

East

August 15, 22, 29.
September 5, 12.

West

Daily to September 30th.

North

August 11, 18 and 25;
September 15 and 29.

See Any O. S. L. Agent for further details or write,

D. S. Spencer, Gen. Pass. Agent,
Salt Lake City, Utah.

FEED COST OF PRODUCING EGGS

What Records of Cost at the Government Farm Show for Leghorn and General-Purpose Breeds.

The cost of feed for producing eggs with pullets and yearling hens both from Leghorns and from general-purpose breeds, in the experiments on the United States Department of Agriculture farm, Beltsville, Md., during the past year, even with the nigh price of grains, has been considerably lower than the price received for near-by fresh eggs.

Leghorn pullets ate an average of 4.8 pounds of feed in producing a dozen eggs. The feed costs on an average 12.9 cents per dozen eggs produced by the flock. The cost of feed per dozen eggs varied from 9.2 cents in July to 41.4 cents in November, when, during the moulting season, the flock continued to eat but, of course, produced fewest eggs. The number of pounds and the cost of the feed consumed per dozen eggs for each four-week period during the year were as follows, beginning December first: Pounds of feed: 5.3, 6.6, 5.4, 4.7, 3.3, 3.0, 3.0, 3.2, 4.9, 4.8, 8.6, 10.9, and 18.4; cost of feed: 12.0, 16.4, 13.7, 13.5, 10.3, 10.0, 10.0, 10.0, 9.2, 9.2, 16.8, 22.4, and 41.4 cents.

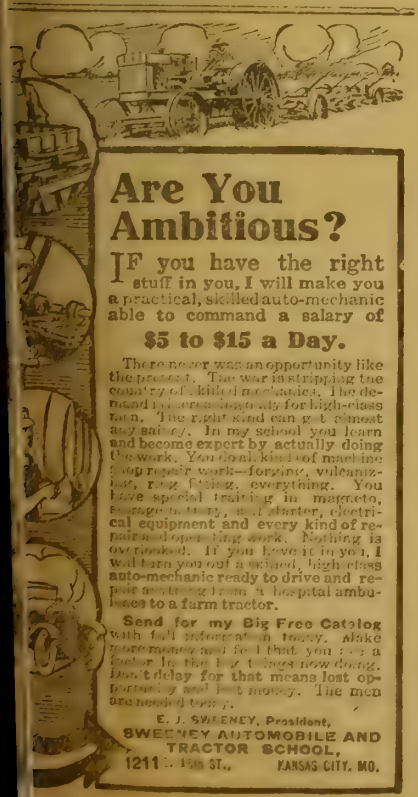
Leghorn yearling hens ate on an average 5.5 pounds of feed per dozen eggs produced. The average cost of feed per dozen eggs produced by the flock was 14 cents. The cost of feed per dozen eggs varied from 7.3 cents in July to 266.3 ($2.662) in November (moulting period.) The number of pounds and the cost of feed consumed per dozen eggs produced by the flock for each four-week period beginning December first were as follows: Pounds of feed: 20.3, 10.0, 5.8, 5.1, 3.6, 3.3, 3.3, 3.4, 3.9, 5.3, 7.1, 30.8, and 118.7; cost of feed: 45.9, 24.8, 14.7, 14.7, 11.1, 11.0, 11.0, 10.6, 7.3, 10.1, 13.9, 64.3, and 266.3 cents.

General-Purpose Breeds.

The general-purpose breeds ate considerably more feed than the Leghorns, the pullets consuming an average of 6.7 pounds of feed and the yearling hens 9.6 pounds in the production of a dozen eggs. The feed cost averaged 16.75 cents per dozen eggs for the pullets, varying from 11.7 to 28.9 cents; and for the yearlings averaged 24.5 cents, ranging from 13.9 to 81.3 cents. The number of pounds and the cost of the feed consumed by the pullets in producing a dozen eggs for each four-week period beginning November first were as follows: Pounds of feed: 10.9, 7.4, 10.9, 5.5, 5.8, 4.6, 4.4, 4.7, 4.7, 6.3, 6.9, 9.2, and 14.1; cost of feed: 24.4, 16.8, 27.1, 14.0, 16.6, 14.3, 14.7, 15.6, 14.7, 11.7, 11.7, 13.2, 17.9, and 28.9.

For the general-purpose yearling hens, the amounts per dozen eggs were as follows: Pounds of feed: 34.6, 32.9, 32.7, 12.6, 8.5, 5.7, 5.3, 6.1, 6.4, 7.5, 7.6, 10.0, and 21.0; cost of feed: 77.7, 74.5, 81.3, 32.0, 24.5, 17.7, 17.7, 20.3, 20.0, 13.9, 14.5, 19.5, and 43.1 cents.

The average cost of the mash and of the scratch mixture per 100 pounds for each month, beginning in July, 1916, was as follows: Mash: $1.82, 1.85, 1.88, 2.02, 2.19, 2.24, 2.33, 2.42, 2.70, 2.96, 2.98, and 2.84; scratch mixture: $1.90, $1.98, 2.03, 2.09, 2.30, 2.29, 2.64, 2.66, 3.05, 3.25, 3.68, and 3.41. The cost of the feed used in producing eggs can be figured from the amount of feed required to make a dozen eggs at different periods throughout the year, or feed prices may be compared with those used in this work.



Government Crop Report

September 7, 1917.—A summary of the September crop report for Utah, and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture, is as follows:

Crops.		Utah	United States.
CORN.			
September 1 forecast	bu.	.....	3,250,000,000
Production last year, Dec. estimate	bu.	.....	2,583,241,000
WINTER WHEAT.			
Preliminary estimate	bu.	4,680,000	417,347,000
Production last year, December estimate	bu.	5,000,000	481,744,000
SPRING WHEAT.			
September 1 forecast	bu.	2,460,000	250,000,000
Production last year, December estimate	bu.	1,900,000	158,142,000
OATS			
September 1 forecast	bu.	4,740,000	1,530,000,000
Production last year, December estimate	bu.	4,480,000	1,251,922,000
BARLEY			
September 1 forecast	bu.	1,320,000	204,000,000
Production last year, December estimate	bu.	1,224,000	180,927,000
POTATOES.			
September 1 forecast	bu.	3,920,000	462,000,000
Production last year, December estimate	bu.	3,600,000	285,437,000
ALL HAY.			
Preliminary estimate	tons	1,334,000	92,000,000
Production last year, December estimate	tons	947,000	109,786,000
APPLES (Agricultural Crop).			
September 1 forecast, barrels of 3 bu.		.....	59,100,000
Production last year, December estimate, bbl.		.....	67,415,000
SUGAR BEETS.			
September 1 forecast	tons	1,165,000	7,940,000
Production last year, December estimate	tons	708,000	5,920,000
PRICES			
Wheat, September 1 this year, per bushel		$ 2.02	$ 2.097
Wheat, September 1 last year, per bushel		1.20	1.312
Corn, September 1 this year, per bushel		1.67	1.755
Corn, September 1 last year, per bushel		1.02	.836
Oats, September 1 this year, per bushel		.84	.617
Oats, September 1 last year, per bushel		.56	.431
Potatoes, September 1 this year, per bushel		1.80	1.391
Potatoes, September 1 last year, per bushel		1.40	1.093
Hay, September 1 this year, per ton		13.20	13.680
Hay, September 1 last year, per ton		12.80	10.420
Cotton, September 1 this year, per pound		.....	.234
Cotton, September 1 last year, per pound		.....	.146
Eggs, September 1 this year, per dozen		.36	.332
Eggs, September 1 last year, per dozen		.24	.233

CONCRETE COOKERY

Recently the sergeants of a certain battery in France sat down to an exceptionally fine dinner, the crowning glory of which was a large plum pudding.

"Seems mighty hard," remarked the sergeant major as he vainly tried to stick his fork into it.

"Have you boiled us a cannon ball?"

"Or the regimental foot ball?" asked another.

"Where did you get the flour from?" questioned the sergeant major, again still struggling vainly.

"Where from?" the cook retorted. "From Store No. 5, of course."

"You did," roared the quartermaster sergeant. "Then, hang you, you've made the pudding with Portland cement."

FOR SALE

100 acres irrigated land 5 miles from Delta, 40 acres under cultivation, 10 acres beets. Good 3-room house, stable for four horses, buggy shed, chicken house and flowing well. Machinery and 2 horses go with place if wanted. Here is a chance to get a good farm in a sugar beet district a a good buy. Ed. Pearson, Route A., Delta, Utah.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

KIMBALL & RICHARDS,
"Land Merchants."

71 acres in Cache valley, on the main county road, right near the railroad station, good schools, churches and social conditions near, first-class water for domestic purposes. Ground all level for irrigation, covered with a water right from the canal. This land has some beautiful clover this year. If you are looking for a first-class farm in Cache valley, this will certainly appeal to you at $110 per acre; 10 per cent down, ten years on the balance.

160 acres in the same locality, sixty acres of irrigated land, lying immediately under the canal. This property has a beautiful pasture, with large trees, making an ideal dairy farm. This property can be had for $60 per acre for the irrigated land, $10 for the pasture land. Terms, 10 per cent down, ten years on the balance.

One mile west of Tremonton we have a beautiful farm, containing 60 acres, good six-room house, first-class orchard, right on the main county road, on one side, and the Lincoln highway on the other side, and a very desirable place to live on a farm. This property has raised this year enough crops to pay at least one-half of the purchase price. If you are in the market for a first-class hay, grain or alfalfa farm, this will appeal to you. Price $140 per acre, including all the improvements; one-fourth down, ten years on the balance, 6 per cent interest.

We have right near the town of Tremonton one of the choicest farms to be found in the state of Utah. This farm contains 120 acres, with a beautiful home, lawn and trees; five acres of first-class orchard, large barns that will hold fifty or sixty head of stock and fifty or seventy-five tons of hay. In addition to this, it has a large garage, wagon sheds, large machine sheds, blacksmith shop, tank for water to distribute over the place, a bunkhouse for hired men, an apple cellar. In fact, this place is equipped with all the modern buildings that anybody could desire on the farm, costing thousands of dollars. These buildings are in a high state of repair, all painted up in first-class condition, and a very desirable looking farm. This property is situated on the Lincoln highway, right near a school, and one of the nicest towns in northern Utah. This farm can be had at $175 per acre, including all improvements; one-fourth down, ten years on the balance, 6 per cent interest. This property this year has taken enough crops off to pay at least one-half of the purchase price of the land.

We have a 320-acre first-class dry farm in the center of the Bear River valley. This land is all subject to irrigation; water can be purchased. This property raised a first-class crop this year of wheat. We are assured next year by the government of nearly $2 per bushel for our wheat crop. This property is worth $75 per acre and the owner will consider exchanging for first-class Salt Lake City property.

We also have in the Bear River valley 240 acres of land, sixty acres of irrigated land, and water can be bought for the balance of the land. We are holding the irrigated land at $150 per acre, the balance at $50 per acre. We will consider exchanging this property for Salt Lake City real estate.

KIMBALL & RICHARDS
"Land Merchants."
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

FOR SALE—REAL ESTATE

Ninety acres fruit and stock farm near Ogden, 30 acres in choice fruit, $1,000 in tools and implements. Full water right. Will sell with or without this years crop. One-half of purchase price can run at six per cent. Will consider trade for desirable city or farm property.

O. A. KENNEDY
Utah Nat'l. Bldg. Ogden, Utah

YOUR CHANCE TO MAKE SOME MONEY

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

OUR PROPOSITION

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. ALBERTSON
604 Dooly Building
Salt Lake City, Utah.

UINTAH BASIN FARM FOR SALE

160 acres, 120 acres irrigable, 73 shares paid up water stock, representing over one second foot of water.

50 acres plowed and partly seeded, three wire fence, good locality, near town of Myton, close to state road.

Owner has more land than he can care for, and make beneficial use of water on, land near by sold recently for $75.00 per acre, land adjoining held at $40.00 without any improvements on it. To make quick sale offer this place for $4,000.00, can give terms to suit. Will consider trade.

P. O. BOX 225, MYTON, UTAH.

IDAHO RANCH BARGAIN

200 acre irrigated cattle ranch, adjoining open range and two miles from forest reserve. Has 125 tons hay, 20 acres grain, 5 acres of potatoes, 12 horses, 26 cattle, 22 hogs, 150 chickens, harness, wagons and all the machinery needed. Price $12,000. Good terms.

FEDERAL LAND CO.
Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

FOR RENT

The Bender & Schulze Ranch.

We will rent our ranch for a term of years to the right party. Ranch consists of 280 acres; 155 acres in fair stand of alfalfa. Will cut about 400 tons next year; will put in 20 acres more next spring. Ranch fenced with woven wire fence.

For particulars apply to owners.

BENDER & SCHULZE
Delta, Utah.

Get Your Silo---Now!

We can make immediate deliveries on the Tulsa Silo —the strongest, stiffest, most durable Silo on the market.

The Tulsa Silo is made to stand up in any kind of weather—made of one-inch lumber, and strongly reinforced throughout.

It is easily portable—absolutely air-tight, and economical to erect. Then too, it is priced within your means. Pro tect your grain during the bad weather —buy your Tulsa Silo Now.

Prices

30 ton capacity.....$140
50 ton capacity..... 150
60 ton capacity..... 160
1000 bu. capacity..... 140

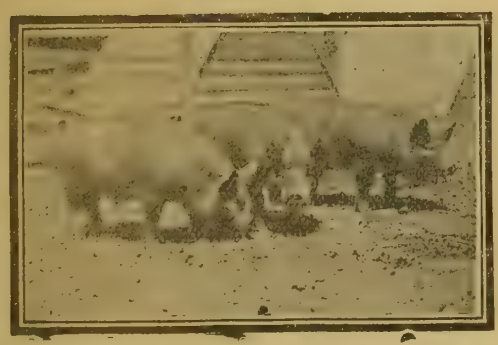
Miller-Cahoon Co.

Murray Idaho Falls

Berkshires For Fall Breeding

from

BALLAMOAR FARMS



50—Spring Boars and Sows to Select From—50
Our 1917 Crop is Equal to Former Ones.
Write for Prices.

Caine Livestock Co.

RICHMOND UTAH

MARKETING DAIRY PRODUCTS FROM THE FARMERS' STANDPOINT

(Continued on page 15)

cost from $1.20 to $3.14 a hundred. Canada, $1.67 per hundred and Massachusetts experiment station noted that it cost from $1.50 to $1.60 per hundred. At the present time if all costs are added they estimate for first grade milk would average from $2.00 to $2.50 per hundred. Mr. E. D. Harve of New Hampshire claims it costs $3.00 per hundred and Mr. B. W. Potter of New Hampshire gives his cost at $2.50 per hundred. Mr. J. B. Geer estimates that on his farm near Elgin Illinois it costs $2.43 per hundred and Ben R. Eldridge of Salt Lake states that his milk was costing $3.00 per hundred. Dr. Carl W. Larson after a careful compilation of experiments gave as the cost of producing 100 pounds of milk in 1916, from rather high producing cows as being $1.50 per hundred or 3.75 cents a quart. He further states that a great many of the cows will not pay for their feed this year. In my own herd for the year 1915 it cost me $1.64. On an average for the years 1915 and 1916 it has cost about $1.85 per hundred to produce average milk. The average price paid for milk in the U. S., wholesale, is approximately $2.00 per hundred so that taking the average cost of production from the average wholesale price paid, the farmer is not realizing a very high interest on his investment. It means merely a job at an average man's salary for the dairyman. The farmer is becoming educated above this and is beginning to demand a just price. Not knowing the inns and outs of marketing and not being equipped to meet the conditions which he neecssarily must under present day demands, the farmer must do something to make his dairy a business. There are several ways of doing this. (1) Learing cost and profits, (2) Organization, (3) putting out a better product, (4) equipping himself with better means of handing this product, and (5) a better knowledge of marketing conditions.

There are many factors, however, which the farmer must consider before deciding upon a market. Chief among these is, of course, price paid per unit, per pound of butter fat, pound of cheese, or hundred of milk. Next in importance is the cost of delivery, equipment for delivery, amount and kind of labor attached to each method, and help, and kind of help obtainable. Then there comes in the food and fertilizer value of the skim milk or whey realized on the farm. All these considered will naturally help the farmer to decide his market providing any two or all markets are obtainable.

Until, however, the farmer takes the care of work out the cost of production for himself he can never know whether or not his cows give a profit or a loss. The time of guessing has past, and, no man can work out the cost for another. The conditions under which each farmer produces his dairy products are so widely different and vary so with seasonal conditions that it is never the same for any two men. By organizing the farmers can get the cost and profits figured very cheaply by testing associations, they can market and handle a large quantity much cheaper and to a better advantage than by doing it independently, and, they can do their delivering for less than half the present price. By test associations the farmer is taught the benefit of putting out a better product and in him is instilled a pride which will urge him to keep his product clean, at least, and often to put out a first class product. When a first class product is put out it must be delivered from a better delivery wagon, and in most cases the demand for such a product increases until the farmer fully equips himself in barn, delivery outfits and machinery to handle the product in the way which brings the greatest profit.

The most economical way of marketing will depend upon the location of the farm, the farm help, the amount and price of feed for calves and hogs, chickens, etc., equipment and power on the farm, all of which must be figured by the farmer himself. The ways used generally have been those easiest for the farmer. Among these are having the wife make butter and selling milk to the creameries. The former has played a very important part in the farmer's dairy market. In the first settlement of a territory it is alright but little does the farmer of the present day realize what he is loosing by this practice. For instance in the year 1908 in Missouri there were produced 12,000,000 pounds of butter on the farms. This butter was made very largely in the summer time when the price is low and when the difficulties of making a good article are greatest. The average price paid for this butter was 14 cents a pound and this often taken in trade. With a little better equipment and knowledge of butter making an article worth 25 cents a pound or even 30 cents a pound is feasible. If these 12,000,000 pounds produced had had the flavor and body which it might have had it would have been worth $1,800,000 more to the farmers. A considerable portion of this butter was sold direct to consumers i. e. neighbors, friends in town, etc., or was traded in at the local grocery store, where it was sorted and the good sold to consumers and the bad packed for renovating. The total quantity which was not fit for food was great, 18.03 per cent being classed illegal and some other being poor was sent to K. C. or St. Joseph for renovating. It costs the farmer just as much for cow food, barn room, time, labor, etc., to make this poor stuff worth 14 cents a pound as it does to produce choice butter worth on the average in Missouri for 1915, 22 cents a pound. If the 469,000 pounds of renovated butter in Missouri in 1914 (U. S. Internal Rev. Dep't.) had been sold at this average price per pound it would have netted the farmer $103,180 cash instead of $65,660, taken out in store trade for the poorer product. This shows a loss of $37,520 to the farmers because of unskilled and careless methods on the farm.

There was, however, more than twice this amount of country butter made which was not renovated. This sold as cheap for use as butter and some yet cheaper as soap grease. All figures considered, $100,000 would probably not be too large a sum to name as the annual loss to the farmers of Mo. on account of poor butter. There were in July 1915 to July 1916 (1 year) produced in Missouri 10,000,000 pounds of creamery butter worth $2,200,000. If the average price of the U. S. were received for this rather than the average of the state of Missouri the Missouri people would receive $390,000 more annually. This last named loss is on account of competition with a poor product, is more due to the poor product of the farmers' wives than it is to overproduction.

—o—

We are fighting for what we believe and wish to be the rights of mankind and for the future peace and security of the world.

To do this great thing worthly and successfully we must devote ourselves to the service without regard to profit or material advantage and with an energy and intelligence that will rise to the level of the enterprise itself.

We must realize to the full how great the task is and how many things, how many kinds and elements of capacity and service and self-sacrifice it involves.

—Woodrow Wilson.

—o—

POINTED WISDOM

The old farmer and his son who had just returned from college were looking at the chickens, when the father saw one of the hens eating a tack.

"What on earth's that air old hen eatin' tacks for?" he asked in amazement.

"That's easy," answered the son, "she's going to lay a carpet.

—o—

When you answer an advertisement always mention the Utah Farmer.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho
"Home of the Champion Durocs."

FOR SALE

A 20 H. P. International Harvester Tractor Engine, less one-third cost price. Engine new $7[illegible], 5-[illegible] plow, $[illegible]. See outfit at work. Also big Engine Disc Harrow, New Spring Tooth Harrow, Small Disc Harrow and one Mower.

HENRY SCHEPERS
Sells, Skull Valley, Tooele Co., Utah.

FOR SALE

Registered Duroc Jersey Pigs; just weaned, from prize-winning sows and Richard's Defender Boar. The best Duroc blood in the West. Orders also booked for "Path-finder" pigs from "Defender" sows. Prices very reasonable.

VICTOR R. FISHER
Oxford Idaho.

BROWN BROKERAGE COMPANY
Eccles Building, Ogden, Utah.
Our business is selling in car lots.
COTTON SEED CAKE & MEAL
CORN, OATS, HAY, STOCK FEED
Provide against uncertainties of transportation by anticipating your requirements early.

FOR SALE

Registered Duroc Pigs, grand-daughters of noted Defender and guaranteed, $15.00 each while they last. Have been crowded along. Reference: First National Bank, Ogden, Utah. Write

LIONEL THATCHER
Ogden Utah

Overland

TRADE MARK REG.

Model Eighty-five Four

$895

f. o. b. Toledo. Subject to change without notice

An Unmatched Success

Year after year for many years the thirty-five horsepower Overland has outsold, by a wide margin, all cars of such comfortable size.

An unequalled combination of power, comfort and economy, it has naturally been an unmatched success.

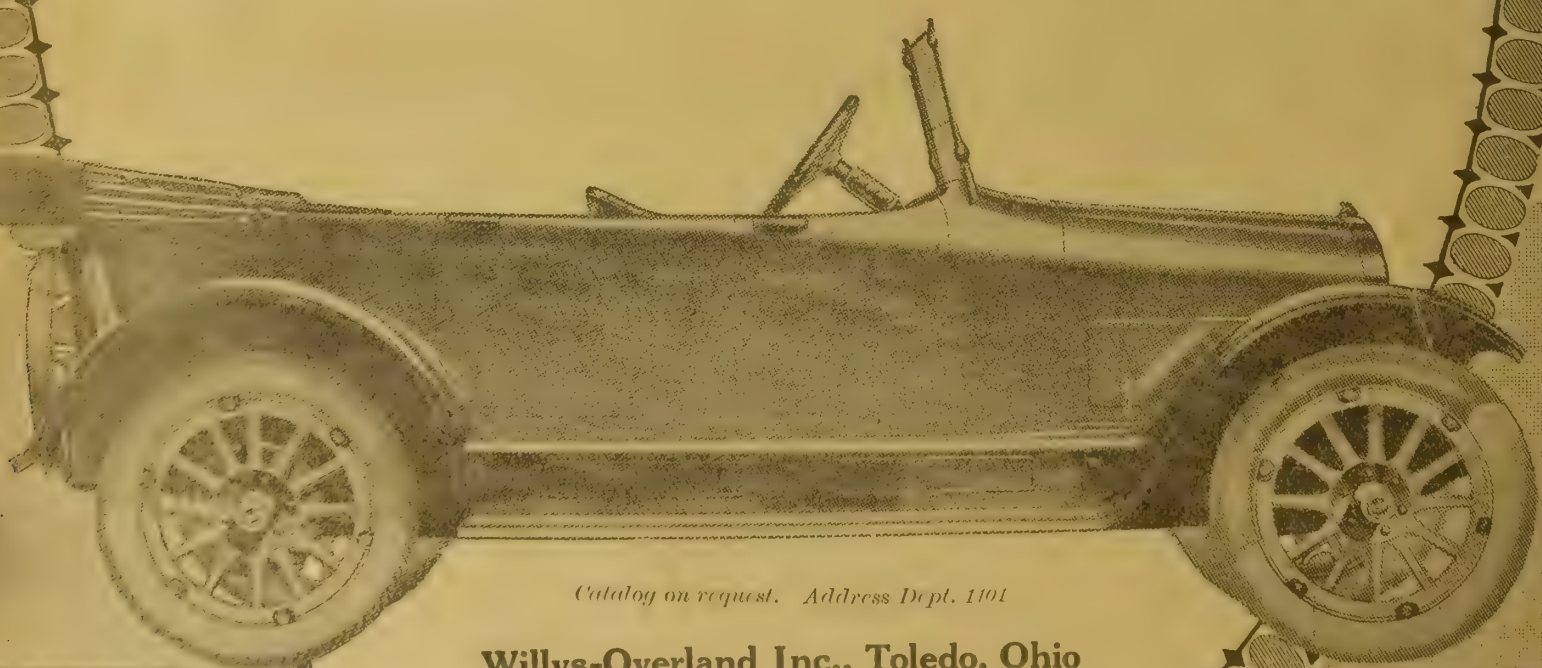
The thirty-five horsepower motor is not only unusually powerful—it is unusually economical.

The wheelbase is 112 inches—unusually long—permitting unusual roominess.

Thirty five horsepower! —112 inch wheelbase!! —$895!!!

Also unusual at the price —cantilever rear springs that ease the car over rough spots—permit speed with comfort on poor roads.

No car of such comfortable size has ever approached its success, because none has ever combined such power, comfort and economy.



Catalog on request. Address Dept. 1101

Willys-Overland Inc., Toledo, Ohio

Willys-Knight and Overland Motor Cars and Light Commercial Cars

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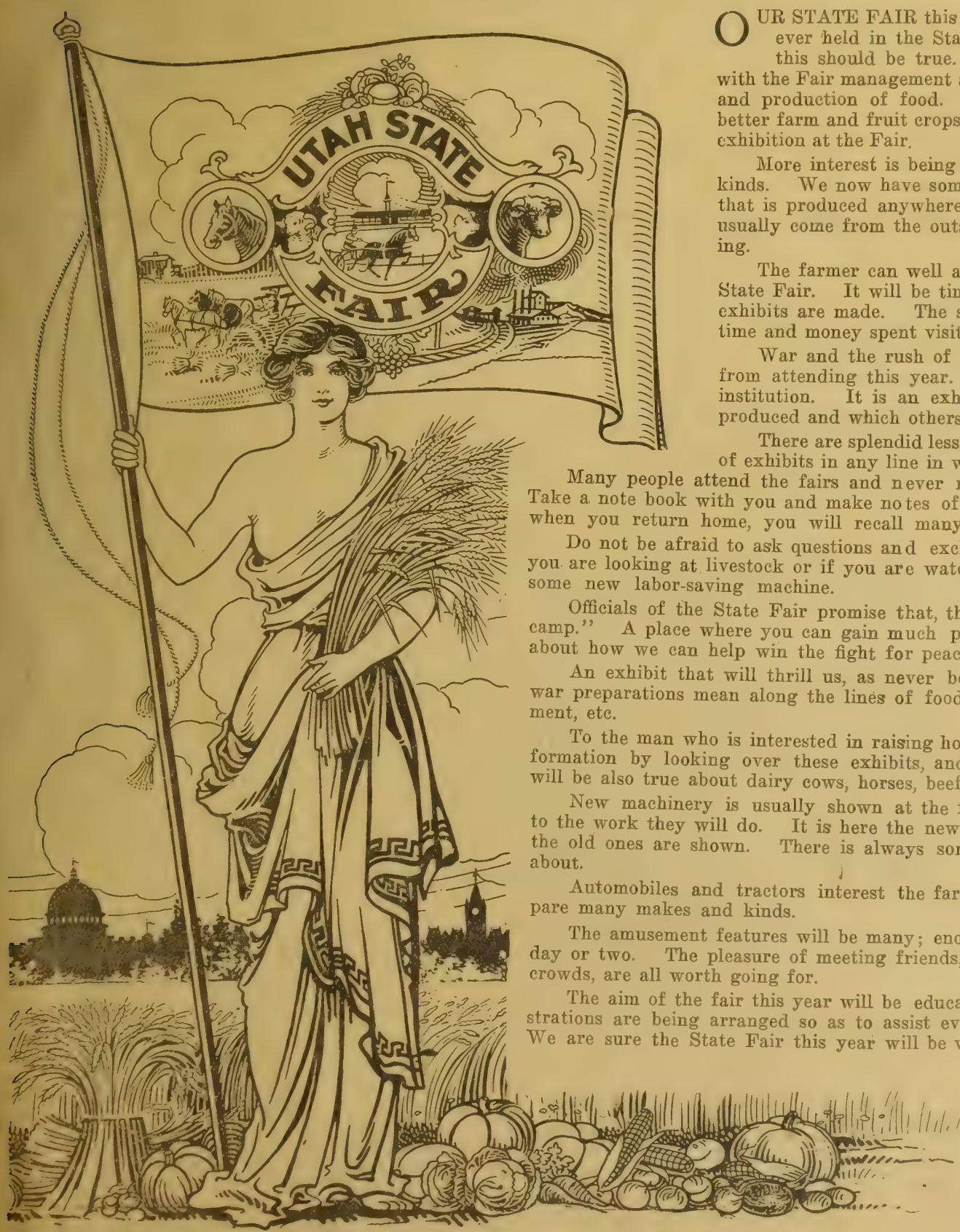
UNIVERSITY OF ILLINOIS LIBRARY
SEP 28 1917

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region
OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
VOLUME XIV; No. 8 LEHI AND SALT LAKE CITY, UTAH SEPTEMBER 22, 1917

Our State Fair For Nineteen Seventeen

Written for the Utah Farmer.



OUR STATE FAIR this year promises to be one of the best ever held in the State. There are many reasons why this should be true. Our government is co-operating with the Fair management and will emphasize the conservation and production of food. Never before have we produced better farm and fruit crops, and the best of these should be on exhibition at the Fair.

More interest is being taken in pure-bred livestock of all kinds. We now have some of the best livestock in our state that is produced anywhere, and these, with the exhibits that usually come from the outside, should make a splendid showing.

The farmer can well afford to spend a day or two at the State Fair. It will be time well spent, if a careful study of exhibits are made. The state fairs are educational, and the time and money spent visiting them is well invested.

War and the rush of farm work should not prevent you from attending this year. The State Fair is a many sided institution. It is an exhibition of samples that some have produced and which others strive to equal or excel.

There are splendid lessons to be learned from a comparison of exhibits in any line in which one may be interested.

Many people attend the fairs and never make a careful study of exhibits. Take a note book with you and make notes of the things that interest you, and when you return home, you will recall many things by which you can profit.

Do not be afraid to ask questions and exchange opinions. This is true, if you are looking at livestock or if you are watching an exhibition of a tractor or some new labor-saving machine.

Officials of the State Fair promise that, this year, it will be a "food training camp." A place where you can gain much practical and valuable information about how we can help win the fight for peace and democracy.

An exhibit that will thrill us, as never before, with a knowledge of what war preparations mean along the lines of food, munitions, guns, hospital equipment, etc.

To the man who is interested in raising hogs, he will find a lot of valuable information by looking over these exhibits, and talking with the breeders. This will be also true about dairy cows, horses, beef cattle or sheep.

New machinery is usually shown at the fairs. Demonstrations are given as to the work they will do. It is here the new things are found and the best of the old ones are shown. There is always something to see, something to talk about.

Automobiles and tractors interest the farmer, and here he can see and compare many makes and kinds.

The amusement features will be many; enough so that you can "rest up" a day or two. The pleasure of meeting friends, the excitement, the music, the crowds, are all worth going for.

The aim of the fair this year will be education. The exhibits and demonstrations are being arranged so as to assist every individual in doing his "bit." We are sure the State Fair this year will be well worth seeing.

SUGAR BEETS

PROFITS FROM SUGAR BEETS AS COMPARED TO WHEAT

(Copy of circular being sent out by the Utah-Idaho Sugar Company).

Salt Lake City, Utah,
September 15, 1917.

The officers of the food administration of the United States Government have agreed with a large majority of beet sugar producers of the United States on a price that sugar is to be sold at, viz., $7.25 per 100 pounds at New York or San Francisco.

It is well known that the Government has agreed on a price for wheat at Chicago, at $2.20 per bushel. That will mean about $1.80 a bushel in the Utah-Idaho territory. The Govenrment desires an increased production of wheat, and also desires an increased production of beet sugar. Wheat production can be increased very materially in dry farming districts, without using irrigated land that is already prepared to produce a good crop of sugar beets.

Aside from patriotic duty, the principal question would be, Will it pay to grow sugar beets on good beet land, or will the farmers plant wheat?

It is conceded that an acre of good beet land will produce on an average, 40 bushels of wheat. At $1.80 a bushel, with $2.00 added for straw, would mean a yield of $74.00 per acre. Our best farmers figure that the cost of seed and all other expenses involved in producing 40 bushels of wheat on an acre of good land will be about $28.50, leaving him a net profit of $45.50 on an acre of land producing 40 bushels of wheat.

Now let us see how he would come out if he should grow sugar beets on that same acre of ground. Any acre of ground that will produce 40 bushels of wheat will grow 15 tons or more of sugar beets. At the prices now offered by the Utah-Idaho Sugar Company, it is computed that the farmer will receive from $8.50 to $9.00 per ton for his beets. Our best farmers figure that the entire cost involved in producing a 15-ton crop of beets on an acre of good ground will amount to about $57.25. Of course the best farmers will grow considerably more than 15 tons per acre, but taking the 15-ton crop, and figuring the minimum of $8.50 per ton, gives us a total income of $127.50, or with $6.00 per acre added for tops, a total income of $133.50. Deducting $57.25 as the expense of producing the 15-ton crop, leaves a net profit of $76.25 on the acre of ground, if it produces sugar beets, as compared to $45.50 net profit if planted to wheat. (See tables below). As an additional incentive to the growing of sugar beets, every good farmer knows that in the cultivation of the beet crop his land is made for more productive for any other crop that may follow. All European countries that grow sugar beets have proved that whereas they would grow 25 bushels of wheat to the acre formerly, after the crop of sugar beets, the same land would produce about 40 bushels of wheat to the acre.

If the farmers would grow more sugar beets and give to the sugar factories a capacity run for the season instead of only about a 60 per cent capacity, such as the factories now have, the cost of producing each bag of sugar would be thereby reduced and that reduction means a higher price to the farmer for his beets, as he shares equally in the profits.

From estimates given out by the National Agricultural Department, it is now conceded that there will be a great abundance, and even a superabundance of potatoes produced this year, one hundred million bushels more than normal is the present estimate.

Following is an official statement of the United States production of potatoes in the past five years:

Season	Production in Bushels
1913-14	331,525,000
1914-15	409,921,000
1915-16	359,721,000
1916-17	285,437,000
1917-18 (estimated	467,000,000

In view of the fact that the United States does not produce one-half of the sugar it consumes, and also the great demand for sugar by our Allies, is it not a patriotic duty for each farmer who can grow a few extra acres of sugar beets to do so? The sugar beet area of the United States is very small compared to the large area on which potatoes are successfully grown.

Would it not, therefore, be the part of wisdom and patriotism as well, to restrict somewhat the growing of potatoes in the sugar beet districts, so that we may not produce a superabundance of potatoes that cannot be successfully utilized, and to produce instead an increased supply of sugar that the country so urgently needs?

Comparative Statement of Cost of Producing an Acre of Wheat and Sugar Beets, and Returns from Each.

WHEAT

Based on 40-bushel crop

Plowing	$3.00
Preparing seed bed	.75
Seeding, 1½ bu. per acre	2.70
Drilling	.75
Irrigating	2.00
Cutting and binding	1.50
Twine	.80
Shocking	.50
Hauling and stacking	1.50
Threshing at 10c per bu	4.00
Storing or sacking	2.00
Hauling	1.00
Fertilizing	8.00
Total cost	$28.50

INCOME

40 bu. @ $1.80	$72.00	
Value of straw	2.00	
NET PROFIT		$45.50
	$74.00	$74.00

SUGAR BEETS

Based on 15-ton crop

Plowing	$3.00
Preparing seed bed	1.50
Planting	.50
Seeding	2.25
Cultivating, 6 times	3.00
Irrigating, 4 times	3.00
Plowing out beets	2.50
Hauling at 60c per ton	9.00
Thinning	7.00
Hoeing, twice	4.00
Pulling, topping, loading	13.50
Fertilizing	8.00
Total Cost	$57.25

INCOME

Estimate of proceeds of beets at $8.50 per ton.

Cost of production as above		$57.25
15 tons @ $8.50	$127.50	
Value of tops fed on open field	6.00	
NET PROFIT		$76.25
	$133.50	$133.50

Proceeds if beet tops siloed

Cost of production as above		$57.25
15 tons @ $8.50	$127.50	
Siloed tops as per Government and Colorado reports, 8 tons @ $5 equals $40, less siloing at $10, per acre equals	30.00	
NET PROFIT		100.25
	$157.50	$157.50

Note.—In addition to the advantages in growing sugar beets shown hereon, as compared with grain crops, is the by-products, such as beet tops, pulp and syrup for feeding livestock upon the farm, which not only maintains but increases the fertility of the soil from year to year, which is one of the most important things connected with farming, because, where grain farming is engaged in, the lands do not only become poverty sticken and reduces the crop to an unprofitable yield, but they get foul with noxious weeds. This is not the case in beet culture. Intense cultivation of the soil is helpful to it in many ways, and tends to keep it free from weeds, as all farmers know, if proper care is given the crop. This is not the case with grain crops.

Further, the feeding of the by-products from sugar beets to livestock is generally very profitable, which is not possible with grain culture.

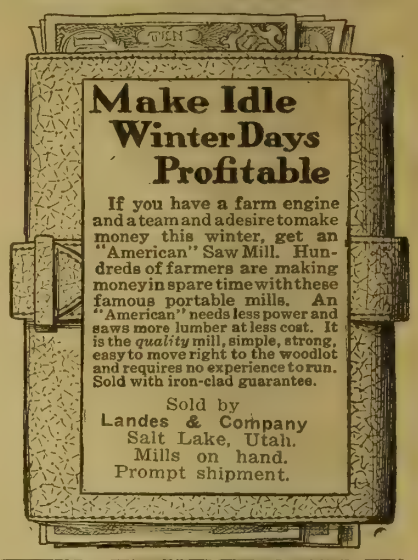
INVESTIGATES THE SILOING AND FEEDING OF BEET TOPS

A. P. Hamilton, Sugar City, Idaho.

Editor—UTAH FARMER: I have just visited the Greeley Sugar Beet District of the Great Western Sugar Beet Co. Messrs. Hyrum Timothy and Charles Turner, Agricultural Supts. of the Great Western took me to the feed yards of some of the largest sheep and cattle feeders of that section and I interviewed them concerning the feeding of the by-products of the sugar beet.

Mr. George Bedford seems to have been very successful in siloing the beet tops. He did not consider the cement silo gave as good results as a pit that he scooped in the sidehill. It is about thirty three feet wide, seven feet deep and one hundred feet back into the hill. The tops were too

(Continued on page 7)



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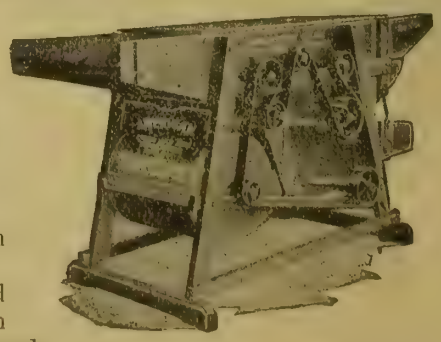

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VOLUME XIV. LEHI, UTAH, SATURDAY, SEPTEMBER 22, 1917 No. 8

Use More Corn In the Home

Written for the Utah Farmer.

Corn is king in America today. There is enough corn, more than three billion bushels. Yet Europe starves while we sit in the midst of this golden plenty.

We have 30 bushels apiece and eat during the year less than a bushel apiece.

Four fifths of all the farmers in America grow corn.

One third of all the land under cultivation is in corn.

Then what is our answer to our Allies?

We will double the amount of corn meal we eat. Yes treble the amount we eat, and release the wheat for you.

Let this be your answer to the plea of heroic France for bread. Let this be our answer to the men who have held the line against our common enemy for three years. Let this be our answer to the women who have stood back of those men and held the second line. Let this be our answer to the little ones who stretch their feeble arms to us crying for bread.

When properly cook and served no man with natural taste will miss the use of wheat.

The Use of Corn as Human Food

The early settlers in this country made large use of the good tasting flint corns they had learned to produce from watching the Indians produce this crop. The corn was ground and used as Hasty Pudding and Johnny Cake, or mixed with rye to form the brown bread, known as "Rye and Injun."

Johnny Cake.

The native flint corns were ground with buhr stone mills and the grind bolted to make a most delicious meal. The Johnny Cakes were and are now made of this meal as follows: the corn meal, in a bowl, is salted, 1 teaspoonful salt to 1 cup meal; then the meal is carefully and thoroughly scalded by the skillful pouring of boiling hot water on it, stirring the meal through and through, to scald every particle. Use a long handle spoon for this work.

When the meal is thoroughly scalded it is mixed with sweet milk or thin cream to the proper consistency for making into cakes. A cast iron griddle is placed over the fire and kept well greased with bacon fat or drippings during the frying. With the long handle spoon the scalded meal is transferred to the gridlle in sufficient quantity so when flattened down with a knife there results a cake of oblong shape about a half inch thick and four inches long by about two and one half inches wide.

The cake is cooked until, on lifting its edge with the thin blade of a case knife, the color is found to be an attractive nut brown; when this point is reached, the cake is carefully turned over and the other side cooked in the same manner.

The piping hot cakes are served on a hot plate. They are eaten to best advantage by splitting with a knife and buttering the two halves; or, placing thin slices of cheese on one half of the cake and covering it with the other half. Properly made there is no food to compare with the Johnny cake. Two cups of meal make cakes for four people.

Hasty Pudding.

A famous dish in the early days was the so-called Hasty Pudding. To prepare this dish proceed as follows: A cast iron kettle about 10 inches in diameter, and three inches deep, is two thirds filled with water and salted to taste. The kettle is placed on the fire and the water brought to a boil.

When the water is boiling violently, bolted corn meal is sifted into it using a long handle spoon. At a certain point the mixture begins to thicken and must be stirred vigorously with the spoon to prevent burning onto the kettle. When the moment comes that the mixture is almost solid the kettle is removed from the fire and the pudding is ready for eating.

The pudding is best eaten from bowls. Molasses, to suit the taste, is poured on the pudding and as much sweet milk as desired.

The hardened "leavings" on the sides of the vessel are especially good eating.

Enough pudding may be made at one cooking to have some left over for frying the following morning. (Fried mush—not the ordinary fried mush of the hotel, but a delicious product.)

"Baked Indian"

Pour a quart of boiling water on 2-3 cupful of Indian corn meal and stir until perfectly smooth. Cook in double boiler for 30 minutes, stirring frequently.

Remove dish from boiler and add ¾ cupful molasses, 2 tablespoonful butter, 1 teaspoonful salt, ½ teaspoonful ginger, 1 well beaten egg, and finally one quart of milk.

Bake slowly for four hours in a deep dish. Serve hot. Aim to secure the peculiar condition known as "bonny-clabbered."

Rye and Injun

The early settlers made a bread called "Rye and Injun."

The old rule of Rye and Injun called for two cups of Indian meal and one cup of rye meal. This was sweetened with molasses and flavored with salt, and mixed with sour milk to the proper consistency for baking. Without doubt it was necessary to add soda to this mixture, but there is now no record of this addition.

(Continued on page 15)

Do Fall Litters Pay?

ONE LITTER, SEVEN MONTHS OLD, BRINGS $321.20.

The hog is a profitable animal on the farm. As a utilizer of by-products he has no equal and has the ability, under proper management, of giving good returns on high priced feeds.

Frank Bingham of Huntsville gives us the following: Eleven pigs born in one litter October 6, 1916. The youngsters ran to a straw stack all winter, being fed a small allowance of grain and a few sugar beets. On March 31st they were confined in a closed pen and fed a full ration of grain to finish them. They were marketed a month later at an average weight of 200 pounds, bringing $14.60 per cwt., making a gross of $321.20.

Faith In Livestock

Written for the Utah Farmer.

The livestock producers of this country are going to make some profit, if they will stay in the business. I wonder how many of us are studying the conditions as they are found in Europe today.

The latest figures show that the 1918 harvest program for England and Wales contemplates two million less acres in grass, and 2,600,000 more in grain, which indicates that cattle are to be sacrificed for grain in the present emergency. And in France official figures show that on December 31, 1916, cattle had decreased 16.6 per cent, sheep 33 per cent, and swine 38 per cent, as compared with 1913. Germany and Austria are supposed to be in worse shape than France, and it is sure that all Europe will depend upon this country for some years to come, not only for much meat, but for pure-bred stock to replenish breeding herds and flocks.

Prices are already beginning to adjust themselves to the unusual conditions, that we experienced last winter, of extremely high feed. Already the reports in the United States, as I have read them in our livestock papers, show that the supply of cattle, hogs and sheep is below normal in most places. With livestock unusually high, and grain bringing good prices, many farmers have marketed their grain rather than feed it to livestock, and right now it looks like the right time to stick to the livestock business.

Like every other branch of farming, there may be years when one crop will be better than another, but in the long run a man who will stick to livestock will make money, and more than that he will build up his farm and increase its fertility.

It looks now as if there will be a shortage in all kinds of livestock, and particularly in hogs. Government crop reports give a decrease of 8.3 per cent. The question of feeding grain or selling it is an important one, and as wheat is the basis upon which most of our grain prices are based, let us see if it is worth while to feed barley and other grains.

The Government having fixed the maximum price on wheat at $2.20 Chicago, and at other places, in proportion, considering the freight rate to Chicago, this price fixing has taken away from the market, a speculative feature. Wheat is the basis of all kinds of grain, and other kinds of grain will, of course, be fixed proportionately.

The price less the freight to Chicago, means about $1.80 per bushel at country points throughout Utah and Idaho or 3 cents per pound. Barley is bringing about 2 cents per pound at country points, and I understand that the expectation is that corn can be bought for about 2 cents per pound delivered at country points as soon as the crop is harvested.

It takes from 300 pounds to 425 pounds of grain to produce 100 pounds of pork. The amount of grain being somewhat dependent on the age of the hog; the younger the hog, the less the grain, and the older the hog, the more grain. If you figure barley at 2 cents per pound, at the 300 pounds weight, it would be $6.00 per hundred pounds, at the 425 pounds weight it would be $8.50, or the mean of the two would be $7.25 per hundred pounds, as the cost of 100 pounds of pork.

Besides grain, other feeds can also be used, to splendid advantage in producing a still cheaper pork. If alfalfa is used in connection with this, the cost will be still less. If alfalfa and beets are used, they will still further reduce the cost, etc.

With hogs selling from $17.00 to $20.00 per hundred pounds, just see what the margin would be for the hog raiser that now has his hogs. This price may not maintain; we can look for a cheaper price this fall, but nothwithstanding this, even if the price should be down to 12 cents per pound, there are good profits in sight for the hog raiser.

Besides that, hogs, as well as all other kinds of livestock, are going to remain high, as long as the war lasts, and will probably get still higher when there are prospects of peace, and remain for a good many years after peace is established. The wheat price is fixed for this year, and also for next year, so that there is every inducement for the farmer to feed his barley and corn to his hogs, instead of selling any part of it at all.

I have seen a number of shipments of stock hogs going to market and this seems to me to be a serious mistake. What we should do is keep these stock hogs and feed our barley, corn or alfalfa to them and fatten them for market.

If there is a shortage in Europe any where near as serious as has been reported, it means a great deal to the American farmer who stays in the livestock business.

The Drainage of Irrigated Farms

By R. A. Hart, Senior Drainage Engineer.

Alkali Reclamation.

It has been stated that underdrainage is the basis of the reclamation of alkali or silt lands, and the fact has been pointed out that drainage alone often is ineffective for complete reclamation and that subsequent treatment is necessary. The salt content not only must be reduced to a safe percentage, but it may be found that the presence of the salts has injured the physical texture of tne soil and perhaps destroyed the humus content. Humus must be restored, evaporation must be reduced so that the future rise of salts may be prevented, and the tilth of the soil must be improved.

If expedition be desired in the removal of salts, or if natural precipitation and irrigation are insufficient to effect a satisfactory reduction in the percentage, a good-sized stream of irrigation water should be turned on the land and allowed to percolate through the soil as rapidly as possible. This is best accomplished by diking the land into checks and ponding the water as deeply as feasible , each check having as large an area as the slope of the ground and the amount of available water will permit. In no case should an attempt to made to flush the salts from the surface. They must be leached out and carried downward in solution to the underground reservoir. The desirability of using large checks and liberal quantities of water is due to the fact that capillary attraction is equally effective in all directions, and it is necessary to offset the tendency of the salts to move laterally in the soil and reappear on a higher or dryer portion of the tract. For this reason it is required to make sure, in flooding, that all the surface is covered, even if knolls and ridges must be leveled first. It is advisable generally to cultivate a field thoroughly before the leaching process, but in some cases it has been found to be more satisfactory to flood first and then cultivate as soon afterward as possible. If the subsoil be so impervious that the leaching water does not percolate readily, it may be necessary to resort to subsoiling or blasting.

The following actual example of reclamation is offered to demonstrate the principles that have been stated:

Before drainage the ground water on a certain tract stood within 2 feet of the surface, which was covered with a white crust of alkali salts. Nothing of value grew on the tract, the only vegetation being an occasional salt weed. The average salt content for the first 4 feet of depth was 2.25 per cent of the soil. A drainage system was installed and in a month's time the excess water in the soil had run out, so that the ground water table was practically down to the level of the drains. This excess water contained a great deal of salt in solution, so that analyses made at the end of the month showed that the average salt content for the 4 feet had been reduced to approximately 1 per cent. The ground surface was cultivated and irrigated with a limited supply of water and some crops were planted, but gave only fair results. Meanwhile the higher temperature of summer had increased the evaporation and it was found that the average salt content for the 4 feet increased to 1.28 per cent in spite of the drainage A nearby uncultivated and unirrigated spot which had been affected to some extent by the drainage system showed an average salt content for the first 4 feet of 1.51 per cent. It was evident that drainage alone would never reclaim the tract, so a heavy flooding was given it with the result that the average salt content for the first 4 feet was reduced to 0.43 per cent, which is less than one-fifth of the original content. At this time the nearby uncultivated spot showed an average salt content for the first 4 feet of 1.73 per cent, and increase which was due to the flooding of adjacent land while the spot itself remained dry. Further irrigation of the drained tract will reduce the salt content on the tract and increase that on the uncultivated spot.

Land should be cropped as soon as possible after reclamation; some crop which will shade the ground is preferable. If possible, the plants should be more or less alkali resistant. It must be kept in mind that the harmful salts are brought to the surface of the ground in solution by the capillary action of the soil and that they are deposited upon the surface when the solution is evaporated; hence the advisability of planting shading crops which reduce the evaporation. Artificial or soil mulches accomplish the same thing, and if shading crops are not planted, the soil should be kept well stirred. Subsoiling, in addition to assisting the leaching water to percolate to the drains, breaks up the capillary columns and retards the upward movement of salts.

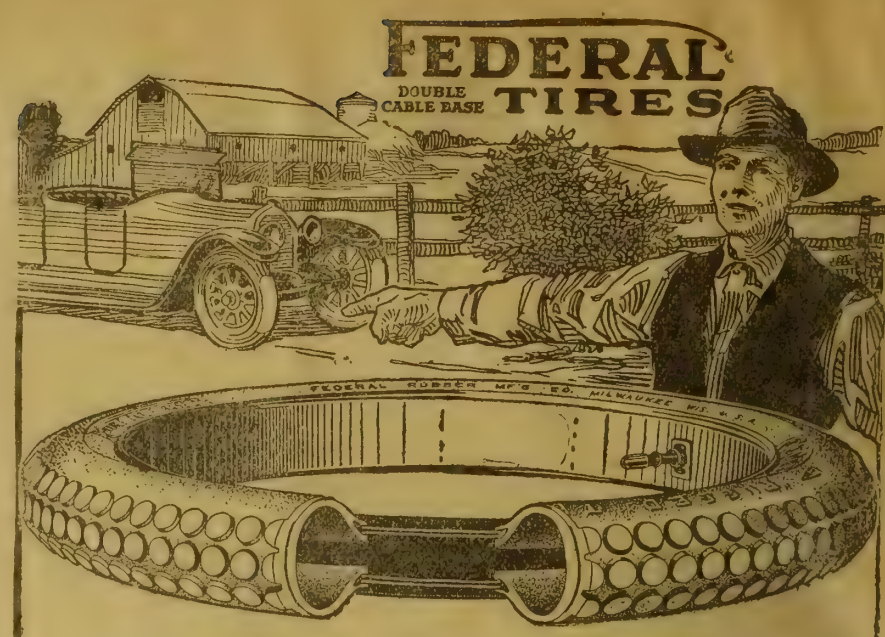
Copious amounts of water should be used in irrigation and the water should be spread at once over a large areas as possible, making sure that the ground is covered as uniformly as may be. Waste water should not be allowed to run off the tract, as it is only the water that percolates downward that removes an appreciable amount of salt. However, water should not be allowed to pond in depressions or elsewhere for any considerable time after the head is turned off. If there is a tendency for the water to pond in this manner, either the depressions should be levelled up or surface inlets to the drain lines be provided, so that the excess may be removed in a short time.

Alfalfa and sugar beets are fairly resistant to the effects of alkali salts and shade the ground surface well. Alfalfa is a valuable crop anywhere in the irrigated section and sugar beets are being planted over a large portion of the West. Sweet clover, while not so valuable a crop, is very useful in reclamation work. All of these crops may be used in restoring humus to the soil. Grains do fairly well, barley being the most resistant, but they do not offer much shade or add greatly to tne humus content of the soil when plowed under. For best results grain should be planted in the fall so that the plants may become sturdy before the salts become concentrated on and near the surface the following spring. It has been shown by Thomas H. Kearney that the cane sorghums, and to a less degree the grain sorghums, are adapted to use on reclaimed lands.

Maintenance

If an under-drainage system be of proper design and construction the matter of maintenance is of small consequence. If silt has accumulated in the tile lines during construction they should be flushed out before the job is accepted. Irregularities due to the settling of the backfill should be corrected so that irrigation water will have no opportunity of making its way directly into a drain line. Vegetation that is likely to develop roots in the tile and obstruct tne drains should be removed from the vicinity of the lines. Silt may continue to find its way into the tile lines for some time. This will be caught in the sand traps and should be removed from time to time.

In cases of serious obstruction of the tile by sediment or by the growth of roots, the conduit may be cleared with special cleaning devices, a number of which have been developed. These are very useful during construction in keeping the suspended matter in motion near the point of laying until sufficient water is developed to carry the material along. After the system is put in operation they may be used to clean out such



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roots as may have penetrated the tile line through the joints or to clear the line of obstructions caused by sand and silt. One of these devices is in the nature of an auger, while another is built like a small hoe. For the removal of roots an apparatus involving a spiral cutter is used, or, better still, a sort of wire brush. The latter is also useful in removing other obstructions and may be made easily by wrapping a piece of leather belting around a cylindrical wooden rod, first having driven the belting full of nails of such length that the outside diameter of the completed brush is somewhat smaller than the inside diameter of the tile to be cleaned. A still simple device, and one that has proved very satisfactory, is a bunch of barbed wire. These devices may be operated most conveniently by means of jointed sewer rods. The latter are made up in 3 or 4 foot sections, fitted with couplings so arranged that they may be jointed when two sections are placed at right angles, and are locked together when the two sections are in line. Working in a manhole 4 feet square, a man can easily put together and operate several hundred feet of rod in a tile line.

The operation of drainage systems should be observed frequently by examination of the bow at the outlet and through manholes, observation wells, etc., and if any portion becomes inactive it should be looked after at once, for it should be remembered that the damaging alkali salts have not been removed entirely by drainage, and that a subsequent rise of the ground-water table certainly will be followed by a new accumulation of these harmful substances.

Necessity and Advantages of Co-operation.

Frequently it is not feasible for one individual to drain alone, and it is almost never economical to do so. The unit cost of drainage decreases as the size of the tract increases. This is due partly to the fact that a system installed on a small tract receives water from without the boundaries of the tract and accomplishes more or less complete drainage over a considerable area. Furthermore, the unit cost of all materials and operations is less on the larger projects, and the required capacity of drains becomes relatively smaller as the unit becomes larger while the cost per unit of water carried is much less in the case of large tile than in the small. Economy demands that tracts as large as possible be handled as units, and where the land is owned by a number of persons it is necessary that some sort of co-operation be effected. Co-operation by mutual agreement usually is difficult and sometimes impossible to secure, owing to an unprogressive spirit among some of the landowners. Cooperation unde· an official organization is much more satisfactory and effective, and the legislatures of practically all the Western States have provided laws under which co-operative work may be done.

In general, these laws provide for the formation of drainage districts and for their government, prescribe their powers and privileges and outline the duties of their officers. The direction of the business of a drainage district is in the hands of a board of drainage supervisors who are appointed by the county commissioners or the district court, depending upon which is the recognized authority in the matter of formation of drainage districts. Drainage districts may exercise the right of eminent domain and bonds may be issued to pay for the construction work. The bonds are retired by assessments collected in the same way and as a part of the regular taxes against the property, so that the cost of reclamation is borne by the returns from the land and is not a direct burden on the landowners. The construction work should be done under the direction of a drainage engineer appointed by the board of supervisors.

The usual procedure is to present a petition to the court or board stating that the lands are in need of drainage and that the benefits of reclamation will exceed the sum of the damages caused and the cost of the work. Hearings are held after due notice has been given, and the district is organized as a legal institution. In most States the organization of such districts is effected so easily and the operation under the law is so simple that it is advisable to make use of this method in carrying out the work.

Conclusions.

The drainage of wet and alkaline lands in the irrigated section is entirely feasible and may be accomplished economically if properly done. Such drainage must be the basis for the reclamation of these lands. Tile drainage is recommended for farm practice. Thorough studies of subsurface conditions must be made before successful systems can be designed. The present demand for the products of the farm make it imperative that these lands be reclaimed.

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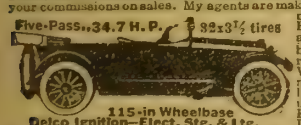
Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 9HN



BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

Storing Potatoes

Mark H. Greene, Field Agent in Marketing Bureau of Markets.

At least two-thirds of the potato crop of the nation is stored for a longer or shorter period on the farm in a pit or potato cellar. Storage in the pit has proven successful in Utah where a well drained site is selected. From six inches to 2 feet of soil may be excavated, although it is advisable to remove only a few inches from the surface and construct a long, narrow pit, the size depending upon the quantity of potatoes to be stored. Too large a quantity should not be stored in one pit. Before placing the potatoes in the pit it is desirable to put a light layer of straw in the bottom in order to protect the tubers from direct contact with the soil. At the same time, make provisions for ventilation in order to maintain the proper temperature (33 degrees to 36 degrees Fahrenheit), the requisite pureness of air and the desirable dryness of the interior. A wooden flue serves the purpose. The lower end, which is perforated with holes, extends almost to the bottom of the pit, while the upper end projects well above the covering. Keep the flue covered in case of storm, and in extremely cold weather it should be entirely closed.

The potatoes are piled in a ridge shape in order to expose a larger surface to the air and when covered sheds the rain. A covering is made by applying a layer of straw, adding sufficient soil to prevent injury to the tubers from exposure to light and frost. The object is to allow the moisture which has accumulated because of the potatoes sweating to evaporate. As the weather becomes colder add another heavy layer of straw covered by soil. The two layers of straw and soil are usually a sufficient protection, except when the temperature drops to 20 degrees or more below zero, when an extra layer will be necessary. Each layer of straw when compact should be six inches thick and the final layer of soil about eight inches deep.

The Potato Cellar

Various types of potato cellars may be profitably constructed in Utah, and should be encouraged whenever the farmer is producing a fair quantity of potatoes. The hillside cellar offers excellent drainage and affords a good entrance. The barn-cellar is usually a serviceable structure and can be constructed with very litle expense. The stored potatoes are protected from frost by a heavy covering of hay. Dug-outs are of numerous kinds. Often, when the soil is of such a nature as to remain intact, it is allowed to form the end and sides of the cellar. Heavy timber is frequently used for the basement. More expensive structures have cement end and side walls. The roof may be built of poles covered with straw and soil, or the rafters may be covered with a heavy, closely woven wire netting and then covered with straw and soil. If desirable, the roof may be covered with rough lumber and then have about eighteen inches of earth placed on the top. Provisions should be made in all cases for generous ventilation.

In case a farmer is desirous of obtaining more definite plans and specifications for the construction of potato clelars he may write to the Extension Division of the Utah Agricultural College.

Reasons for Farm Storage

It would be very difficult for dealers to handle the whole crop of potatoes in the fall.

Our farmers are pressed with work during the harvest season and usually find it more practical to devote all of their time to potato digging and then haul them to town when other work is not so pressing.

It is very difficult to obtain cars to make shipments in the fall.

If the whole crop were sold when harvested, markets would become glutted and prices would automatically decline.

The farmer can store more cheaply than can the city capitalist.

Storage of the potatoes on the farm will enable the producer to distribute his crop economically and receive an average price.

The simplest forms of storage are the pit and cellar.

The patriotic duty of our consumers is to purchase the potatoes which they begged the producers to raise this spring.

Courier of Soldier and Civilian

Our troops are now on the firing line in France. While at home every instrumentality of our government and private industry is being urged at top speed to insure victory. The telephone is in universal demand as courier, bringing to the front men and the materials of war.

From the farms the telephone courier brings foodstuffs; from the mines the telephone courier calls forth metals; from the factories this courier gathers manufactured products. The telephone courier leads troop and supply trains to the front; summons fighting flotillas and transports; and, in fact, leads practically every contributing unit of supply to the firing line.

At such a time, when the government is straining at its task and every industry is loyally contributing its energy, this national courier is constantly being used to call up the reserves. It is at the base of every contributing activity.

The right of way must be given to the military for the direction of troops and to the government for the marshaling of endless supplies. To do this, and also make the telephone serve all other needs, both patriotic and private, all must economize.

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One Policy *One System* *Universal Service*

DIFFERENT KIND

"Willie against orders, allowed his chum to take him to the river on a fishing trip."

"Then what happened?"

"His father took him to the back shed on a whaling expedition."

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Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the addess cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Kindness to all kinds of animals is found to be very profitable.

Plant your new land to sweet clover. This is also a good crop for land you are draining.

Our government is warning farmers about buying so called fancy wheat, with high sounding names but of no better quality than the ordinary wheat.

The value of straw is becoming better known each year. When we learn its value, better care will be taken of it and more careful use made of it.

If you have grown any roots, such as mangels or carrots, they will make good feed for dairy cows. They are appetizing and have a splendid effect upon the animals digestion.

Keep your stock hogs and help increase the nation's food supply. A careful study of how to feed them will convince you that at the present price of hogs, and at the present price of hog feed, there is good money in raising hogs.

Again we emphasize the importance of fall plowing all the land possible. It is a help to the soil, to be exposed to winter storms and freezing. Remember how busy we were this spring with a late season and so much work to do. We could not do our plowing last fall.

When you answer the advertisements in the Utah Farmer always mention where you read the adv. It protects you and helps us. If the manufacturer knows you are reading his advertisement in our paper he will spend his money with us. There is only one way for him to know and that is for you to always speak a kind word for the Utah Farmer.

A traveling salesman who has just returned from a trip through Oregon, Washington and Montana, says that their hay crop is short. If Idaho furnishes them hay it will mean a better market for both Utah and Idaho. This is another reason why we should conserve all our feed. Use any feed that might be wasted and if necessary you will have your alfalfa to sell.

Do not be in a hurry to sell your wheat. There seems to be a difference of opinion as to what the price of wheat shall be in Utah. Some say that the price shall be the Chicago price less the freight and a buyer cannot pay more. Others claim that any price up to the Chicago market can be paid. The matter is now up to the officals at Washington and will be settled in a few days. In the mean time wait and see what is done.

When you answer the advertisements in this paper, always mention the Utah Farmer. Many advertisers judge the value of an advertising medium by the number of readers who mention the paper in which they say the advertisement. The more advertisements that we can secure, the better paper we will be able to publish. You can help us by answering the advertisements and mentioning the Utah Farmer is so doing.

WHAT A FARM NAME WILL DO

Name your farm and have it recorded. Then advertise the things you have to sell. With your farm named you will not want to shame the name by selling poor quality goods, that means you will make better butter, the best you can, you will sell only fresh eggs. You will have better cows and better chickens, because their products will sell better and then your farm name will mean something to you. It will be like the manufacturers with his trade mark, your name will be behind the products you sell.

WILL HELP THE FRUIT BOX SHORTAGE

Because there was a grave shortage in the supply of boxes to move this year's crop of apples and other fruits the State Council of Defense took the matter up and seem to have materially helped. The shortage is not alone a local one, but general over the entire West. Part of the crop may have to await the arrival of the boxes.

We suggest that any one interested in this question of boxes for shipping of fruit, and who have not a sufficient supply, to get in touch with Mr. J. Ed Taylor, at State Capitol Building, Salt Lake City, as he is secretary of the committee which has this matter in charge.

SAVE YOUR FEED

A great deal of good feed is going to waste where the crops have been harvested, if livestock is not pastured on it.

Feed is too valuable to allow any to go to waste. If you do not have any livestock to pasture on your farm sell the privilege to some one. You will make a little and the waste will be overcome.

Sheep are best gleaners we have, they will gather all the feed and besides, will eat all the weeds.

If we will take better care of our feed and keep more livestock on the farm there will be a better balance in the bank account at the end of the year. When the fields are pastured the hay crop and other feed is saved. If you have more feed than you can use there is going to be a good market for alfalfa and all kind of hay and grains.

The important thing at this time of the year is to save the waste feed by pasturing.

COMMUNITY PITS

The State Council of Defense are recommending that community pits be built near the railroad stations for the storing of potatoes or other perishable vegetables. It will be impossible for the railroad to market all our potato crop at digging time. There is no government price placed on them and buyers will take advantage of the unusual conditions and try and force the prices down. Already they are trying to make us think there is a wonderful over production. There is a big crop in many of the states but no so large as some would like to make us believe. We have a good crop here and something must be done to store them at harvest time. If the community pit is not practical, then each grower should prepare to store a part or all of his crop.

Some will remember the experience of last year and be more careful about making contracts. Our government is sending out market reports, get posted before you sell.

SECURE YOUR SEED NOW.

The need of selecting and securing seed now for next year's planting is of more importance than many of our readers seem to realize.

Increased production can be made by having better seed. Seed that has been hand selected. You can not expect to secure a good crop from poor seed. You may have a good seed bed and fertile soil and with poor seed secure a fair crop, but how much bigger and better crop could be produced if you had good well selected seed.

At harvest is the time to secure your seed. It is a poor policy to wait until planting time next spring. Nine times out of ten you can buy for much less price now than if you wait and you have just that many chances of getting better seed.

There is no government set price for seed wheat or other seeds, next spring seed may be scarce and then where will the price go. The thing to do is secure the very best seed possible right now and put it away in some place where it can not be destroyed.

BUILD GOOD ROADS

Good roads are just as important and necessary today as they were before the war started.

The question of conservation of time, money and labor makes it, however, more important that the roads, that are constructed, be made good. It is not the time when we should rebuild our roads each year. Make them permanent and of the best material.

This is no time to halt road building activities, for roads are the connecting link that brings communities, towns, and cities together.

The farmers need good roads so that they can market their crops, for the cost to consumer will depend upon the cost of getting the food stuff to them.

Nothing should stop this good-roads work unless it might be the necessary help. This can be over-come in most communities, if done at a time when the farmers can help. There should be no hold-up game on the part of any one who furnishes the labor or material, for it may permanently hurt the road building business. We are for good roads, built so they will last and give service.

BEET TOPS

Unusual interest is being taken right now in regard to the use of beet tops. Their real value has not been known. The articles in the Utah Farmer on this subject has started something. Some of our larger beet growers have been to Colorado to find out all they could about the value of beet tops and how to silo them.

For some time they have been siloing and feeding the green tops to livestock in Colorado and when they are used this way it very materially increases the profits from an acre of beets. We suggest if any of our beet growers failed to read the articles in the last few issues on this subject of beet tops they should look up their back numbers and read what has been said about them.

If the claims of our Colorado friends are correct, then the beet grower can do one of two things—keep more livestock because of the feeding value of beet tops or he can sell them to a feeder at a much better price than has been secured from an acre of beet tops in the past.

The siloing of beet tops this year will be tried out on a large number of farms. The method is so easy and cost so little, only the labor of digging a silo, that every one who wants to try it out can do so. We suggest that no one should go to extreme this year but in a fair way try it out. It means so much. It is worth the effort.

Feed is going higher all the time and if beet tops will help we certainly can use them to good advantage.

INVESTIGATE THE SILOING AND FEEDING OF BEET TOPS

(Continued from page 2)

heavy for the cement silo and a great amount of juice was lost.

In filling the pit he drove the loaded wagon onto the tops in the silo to unload them. The team and wagon going over them was not sufficient and they led horses over the tops occasionly to thoroughly press them together to exclude the air. In less than one hundreu feet of the silo, Mr. Timothy told me was packed eight hundred tons of beet tops. The tops should be siloed at once when green. If let get dry it takes more tramping to get them packed in the silo.

The tops are bought by the acre or 50 cents per ton in the field. Mr. Bedford said he would buy tops as far from his silo as he could make two loads per day with a four horse team. His tops cost him about $1.10 per ton put into the silo and every ton saved him a half a ton of hay. He fattened his steers on alfalfa and 30 pounds of beet top silage per day, only fed grain the last thirty days.

They estimate average beets will yield eight tons of tops per acre. Some gather them dry and stack them. Others gather them in piles in the field and haul them in as they feed them, but they estimate one ton of siloed tops are worth three of dry ones.

If a field yields eight tons of feed, each ton worth half a ton of hay we are letting the cattle tramp down a crop equal to four tons per acre. We would hesitate before we turn the cattle into a good crop of hay for lack of time or help to gather it.

If what these men say is a fact, and it seems to be, a farmer with ten acres of beets and barely hay enough to pull him through the winter, could silo his tops, and if it only gave him forty tons of feed, or even twenty the other end of the hay stack would not appear so soon as it did last spring.

Sugar beet molasses is also fed to some extent but since the Sugar Company raised the price from $[illegible] to $25 per ton some of the farmers are looking for a cheaper feed. However the big feeders have satisfied themselves its worth the money. It is mixed with chopped or ground alfalfa 20 to 28 per cent syrup.

I am told the Utah-Idaho Sugar Co. would still supply the farmers with syrup at $20.00 per ton although the eastern buyers were paying $28.40 or more at the factory.

The Greeley farmers pay 75 cents per ton for pulp the first thirty days of the run after that its $1.00 per ton, mostly fed by the big feeders.

While the battering prices of beans potatoes, wheat and other products had enticed a great many farmers from raising beets they seemed to be boosters for the sugar business as one of the greatest factors in the agricultural line to elevate that valley into the enviable position it now occupies as one of the most advanced districts of the United States in farming and feeding livestock. It would be better for the people of Utah and Idaho if they also would be boosters instead of knockers.

PLOW UNDER THE THIRD OR FOURTH CROP ALFALFA FOR FERTILIZER

By Mark Austin.

Numerous articles have appeared in the Utah Farmer, since February first, pertaining to the fertilizing of the soil. We all know this to be one of the most important items connected with farming, and while we are short of manure, green alfalfa furnishes a splendid fertilizer. The soils are very short of humus and we want to remind those farmers who have not plowed under a portion of their first, second or third crop of lucerne, to take the fourth crop and turn it into the soil immediately, giving it a chance to decay as much as possible, then cut it up with a disc harrow which will kill the alfalfa roots, then just before freezing weather replow eight or nine inches deep. If this work is done this Fall, it means 50 per cent larger tonnage than if done in the Spring. There are any number of alfalfa fields which should be plowed up and especially so now that we have discovered the benefits derived from siloing beet tops, and that a crop of these put away in a dirt silo will furnish more food for the animals than the alfalfa crop where it is partly killed out and is overrun with dandelions and noxious weeds, as is the case in many fields. Where the ground is not moist enough to properly plow, it should be irrigated before plowing.

This matter should have the attention of our farmers and we hope they will do as much as they can along this line, before the beet harvest commences.

COURTESY

Courtesy is the one medium of interchange which is accepted at par by the people of every part of the grand and glorious universe.

It is feeling garbed in reasonable and business-like expression—the adornment that adds harmony and tone to matter of fact routine—the power which moves the machine of business good fellowship and produces the smoothness that you note in the running of an organization.

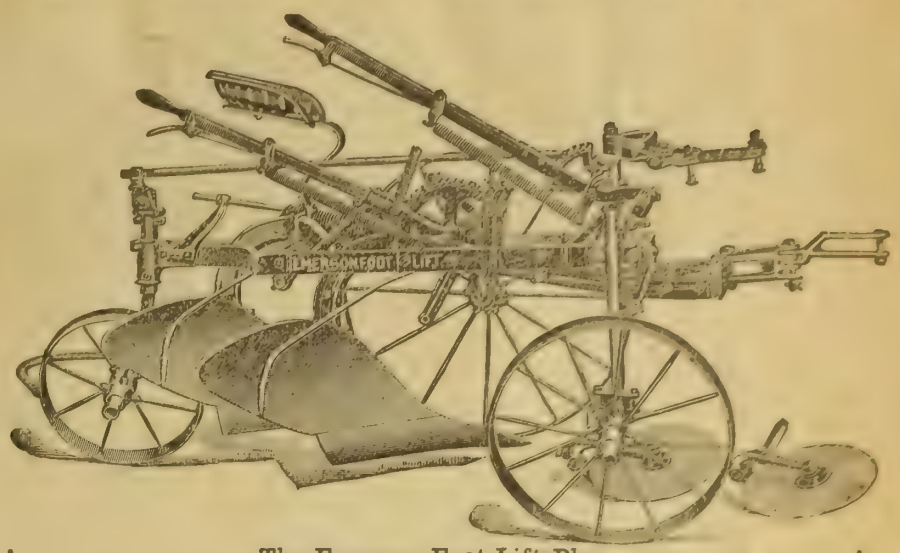
It radiates a spirit of good feeling that we are not toiling entirely for what we get out of work in a material way, but for the pleasure of a polite transaction and friendly association as well. Don't think life too short for we are never too busy to be courteous, for courtesy is the outward expression of an inward thoughtfulness for others.

Remember that back of an institution are its customers, present and prospective—the people with whom we have daily transactions and who have occasion to judge us. Yes, even competitors must receive the courtesy due them.

Inasmuch as your daily work helps to determine the standards of quality and service for which we strive—and it is these standards that reflect towards the institution or conduct of the business—and because of the fact that your success depends upon those with whom you have dealings—never forget that courtesy is the one best bet or medium that will carry you onward towards success. — Banking News.

The world is a great mirror which truly reflects the thoughts, acts and ambitions of every individual.

Emerson Foot-Lift Plow



The Emerson Foot-Lift Plow

Both levers on the Emerson Foot-Lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the Plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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J. C. HENAGER,
President.

HOME

JELLY MAKING

Some Fruits Are Better for Jelly Than Others—Pectin and Acid Are Both Essential.

A good jelly should be bright, of good color, and clear. When removed from the glass, it should retain the shape of the mold. The jelly can be cut with a distinct clevage, retaining the angles where cut. It should sparkle and be tender enough to quiver without breaking.

Fruit for Jelly Making.

The juice from certain fruits, such as grape, apple, crabapple, orange, and currant is better suited for making a natural fruit jelly than juices from other fruits. The juices from these fruits contain the properties necessary for jelly making. The best fruits for jelly making contain pectin and acid. Pectin, the fundamental jelly-making substance, does not exist in some fruits in sufficient amount to make jelly without the addition of pectin from some otner source. The peach, strawberry, and cherry are examples of fruits which contain acid but are lacking in pectin. Pear and quince contain pectin but are deficient in acid. If the missing property be added to each of these fruits, a jelly with the color and flavor of the fruit selected can be made.

Extracting the Juice.

Wash such fruit as berries, grapes, and currants in running water and add 1 cup of water for each pound of fruit. For apples, quinces, and such hard fruits, wash, slice, and add 3 cups water to each pound of fruit. The fruit should be cooked until tender, a small quantity of water being added to help extract the juice. The fruit juice will flow more freely when heated than when cold, and the cooking develops the pectin. As soon as the fruit is tender the liquid should be squeezed through a cheesecloth and then be allowed to drip, without pressure, through a flannel jelly bag. Overcooking of the fruit is apt to result in a cloudy jelly. After cooling the juice to room temperature test it to determine the amount of pectin present. This test gives some idea of the proper porportion of sugar to juice. Add 1 tablespoon 95 per cent grain alcohol to an equal volume of cooled fruit juice and shake gently. The effect of the alcohol is to bring together the pectin in a jellylike mass. If a large quantity of pectin is present it will appear in one mass or clot when poured from the glass. This indicates that equal quantities of sugar and juice may be used. If the pectin does not slip from the glass in one mass, less sugar will be required. A fair proportion is ¾ cup of sugar to 1 cup of juice. If the pectin is thin and much separated, ½ cup of sugar allowed for each cup of juice will be sufficient.

Details to Be Observed.

Quantity of juice to cook.—The quantity of juice to be cooked at one time will depend upon the size of the vessel and the methods of heating available. The capacity of the vessel used should be four times as great as the volume of juice to be cooked. If the attempt is made to cook a large quantity of juice at one time over a slow flame, there will be a loss of color and a decrease in the yield, partly due to the destruction of the pectin.

When to add the sugar.—When the proportion of sugar to juice has been determined, measure the fruit juice and place over the fire to cook. When the juice begins to boil, add the sugar immediately and stir until the sugar is dissolved. By adding the sugar when the juice begins to boil, more time is given for the inversion of the sugar by the acids of the fruit and there is less danger of crystallization.

Cooking the jelly.—After the sugar has dissolved, the cooking should be as rapid as possible. Finished jelly can be obtained more quickly by rapid cooking. Long cooking will tend to darken the product and destroy the pectin, which will cause the finished jelly to be less firm.

Testing for the finished jelly.—A thermometer can be used to great advantage to show when the jellying point is almost reached. No exact temperature can be given, because the jellying point differs with different fruits, with the quantity of sugar used, and with the same fruits at different seasons. In using a thermometer for cooking apple jelly it has been noted that the temperature is seldom less than 105 degrees C. or 221 degrees F. or more than 106 degrees C. or 223 degrees F. With grape and currant jelly, between 106 degrees C. and 107 degreesC. or 223 degrees F. and 223 degrees F. will give the best results.

Since no definite temperature can be given for the finished jelly, the most convenient means of determining when it is finished is to test it with a spoon or paddle. Dip a spoon or wooden paddle in the boiling mass. Remove and cool by moving it back and forth for a few seconds and then allow the jelly to drop from it. As long as there is sirup present it will run or drop from the spoon. When the jellying point is reached, it will break from the spoon in flakes or sheets. When this jelly stage is reached, remove from the fire immediately and skim. Skimming at this point saves waste.

Filling glasses.—After skimming the jelly, pour at once into hot sterilized glasses and set aside to cool.

Cooling and sealing.—Cool as rapidly as possible, avoiding dust which will give contamination with mold. When the jelly is cold cover it with melted paraffin. By running a pointed stick around the edge of the glass while the paraffin is still hot, a beter seal can be obtained.

Storing.—Jelly should be stored in a cool, dark, dry place. If jelly is stored for a long period of time, it will deteriroate in texture, color, and flavor.

Mistakes to Avoid.

Soft jelly.—Jellies sometimes are sirupy because more sugar has been used than the fruit juices require or because boiling after the addition of sugar was not continued long enough to drive off excessive water.

Tough jelly.—Jelly is tough or stringy because too small an amount of sugar was used for the quantity of fruit juice taken or because the boiling was continued after the jellying point had been reached.

Crystals in jelly.—Crystals appear throughout the jelly because of an excess of sugar. When sugar is boiled with an acid for a sufficient length of time, it is changed into a form which does not crystallize. Crystals are found in jelly sometimes because the juice is boiled to too great a concentration before the addition of sugar, or in boiling the sirup spatters on the side of the pan, dries, and in pouring the finished product these crystals are carried into the glass of jelly, and in that way the jelly becomes seeded with crystals.

Cloudy jellies.—This may be due to having cooked the fruit too long before straining off the juice or to not having used sufficient care in straining the juice. Sometimes it is noticed in apple and crab-apple jelly that although it is clear when first made, the jelly becomes cloudy after a time. In these cases it usually is due to the use of partly green fruit, the starch in this fruit probably causing the cloudy appearance.

SAVE LATE VEGETABLES BY BASEMENT STORAGE

A cool, well-ventilated cellar under the dwelling offers good conditions for the storage of late vegetables. In cellars that are too warm on account of containing a furnace for heating the dwelling, a room may be partitioned off either in one corner or at one end of the cellar where the temperature may be controlled by means of outside windows.

Barrels, crates, boxes or bins may be used as containers for the various vegetables, but movable containers are preferable to built-in bins, as it is possible to remove them for cleaning. It is advisable to construct shelves or a slat floor to keep the crates, boxes, baskets, and other containers off the ground. This is highly desirable to insure a free circulation of air and to prevent the containers from harboring mice, rats and vermin. Shelves for canned goods along one side of the room need not be more than 6 inches wide.

Parsnips All Winter.

Parsnips may be allowed to remain in the ground and dug as needed, as freezing does not injure them.

As it is a difficult matter to dig them when the ground is frozen, it is advisable to store a small quantity in the storage room in the basement of the dwelling or in the out door storage cellar for use during the winter periods when the ground is frozen.

MANY NEW FEATURES AT THE STATE FAIR

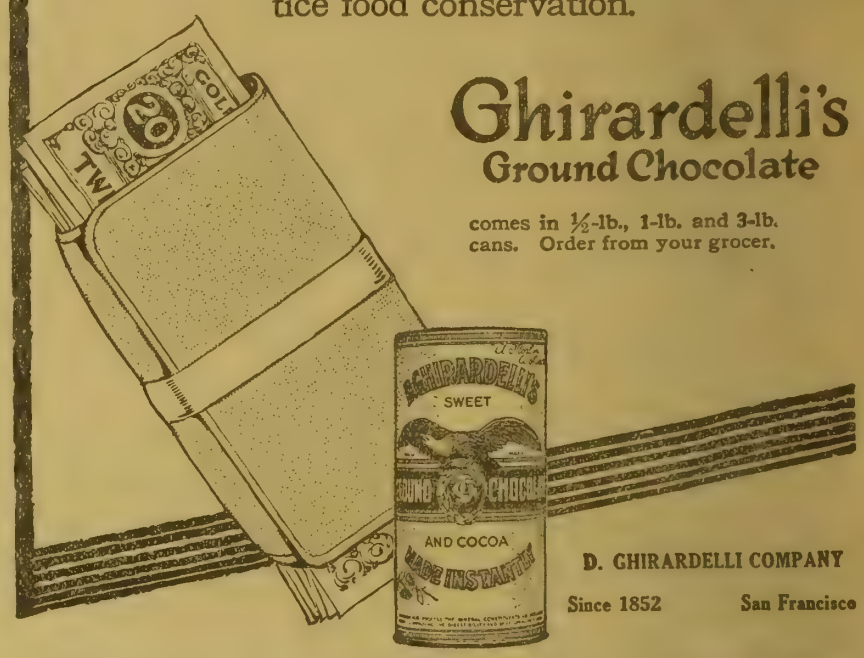
State Fair and Fall Conference at Salt Lake City Sept. 29th to Oct. 7th, 1917.

Excursion rates on Salt Lake Route. For above occasion the Salt Lake Route will sell excursion tickets from all Utah stations as follows: Nephi-Tintic district and all points East Sept. 29th to Oct. 7th. Good returning until Oct. 12th. From all other points Sept. 28th to Oct. 6th. Good returning until Oct. 15th. Extra equipment on all trains. adv.

The test of to-day is the Pocket Book test

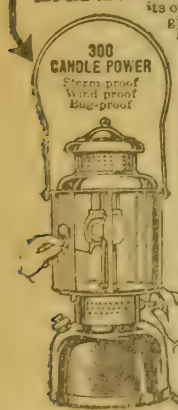
Today home management is on a war, not a peace basis. "How much am I getting in nutriment for what I pay?" is the home manager's problem.

In peace or war Ghirardelli's Ground Chocolate makes good as an economical and appealing food. A blend of pure cocoa and sugar, two of the most nourishing foods known, it supplies energy and resupplies waste tissue at lowest cost. Use it freely as a food and you will practice food conservation.



A Match-Lighting Gasoline Lantern!

No torch needed. Lights with a match like the old time oil lantern but makes and burns its own gas from common gasoline, giving a brilliant, steady, white light of 300 candle power.



Most Brilliant Light Made

Brighter than the brightest electric bulb. More light than 20 oil lanterns. Cheaper and best light made. Costs less than one-third of a cent per hour. Safer than the safest oil lantern. The

Coleman Quick-Lite

No wicks to trim—No globes to wash. No dirt or grease, no glare or flicker. Absolutely safe. Fuel can't spill—no danger if tipped over in straw. Guaranteed Five Years—will last a lifetime.

If your dealer can't supply address our nearest office for Catalog No. 70

COLEMAN LAMP CO.
Wichita, St. Paul, Toledo, Dallas, Chicago.

Good to the shoulders great for wear

President Suspenders for comfort

PRESIDENT SUSPENDER CO.
Shirley, Mass.

WINTER GOODIES

It is a wise housekeeper who converts part of the summer fruits into winter "goodies" to fill the call for candy or "rush order" desserts. Fruit paste so common in the tropics is little known in America. Old time Virginia housekeepers put up peach and damson "leather," a similar product.

These pastes make a delightful dessert served with cream cheese or nuts. They can be used to garnish cakes, custards and platters of cold meat or eaten as a candy.

Fruit paste is made by boiling down fruit pulp, adding sugar, and drying out slightly.

Peach Paste.—Cook peaches tender an rub through colander after draining off juice (this can be bottled and used as a fruit syrup). Allow ½ pound of sugar to 1 pound of fruit. Cook over slow fire till very thick. Pour paste out in thin sheet on flat dish or marble slab which has been rubbed over slightly with salad oil. Place in sun or draft for two days, covered to protect from insects. It should be dry enough not to be sticky, but by no means hard or leathery. Cut paste in fancy figures or in any way desired, place on wax paper, sprinkle with granulated sugar, stand in draft two days more. To store, dip again in granulated sugar and pack in boxes or jars like candy with layers of paper between.

Damson Plum Leather.—"Damson leather," as it is known in Virgiina, is made without straining, the skins left in, dried as above. The sheet of leather is then sprinkled with granulated sugar, rolled like a jelly roll, and cut into slices. Dip these slices in granulated sugar and pack in jar.

Apple Conserve.—1 pound apples to ¾ pounds sugar and ½ pint water. Simmer apples, quartered and peeled, in syrup till clear. Dry in sun till no longer sticky. Roll in granulated sugar and pack in tin boxes or glass jars, in layers with wax paper.

Damson Plum Conserve.—4 pounds plums, 3 pounds sugar, 1 pound shelled nuts, 2 oranges, 1 pound raisins.

Remove the seeds and chop the plums. Peel the oranges and slice thinly one-half of the peel. Discard the other peel and the seeds. Mix chopped plums, orange pulp, sliced peel, sugar and raisins. Cook all together rapidly until bright and thick as jam. Add nuts five minutes before removing from the fire. Remove from fire, cool, and pack into jars.

Fancy Variations.—These are only a few suggestions; there are endless varieties and combinations that can be worked out with these pastes. Use different fruits or pastes, dry partly, and arrange in layers like layer cake. Or vary the layers by adding finely cut citron, candied peel or blanched nuts. With apple pastes different colorings and flavors can be used. Where fruit is abundant, fancy packages of these pastes might be put up for Christmas presents or church bazaars.

SAVING ENOUGH FOOD FOR OUR FRIENDS THE ALLIES

Much has been said and done on this important task, of helping to feed the allies. Here is a very brief story but a sensable way of helping:

The suggestions can be followed and it means no real hardship on any one. The rules are concise and simple. Less wheat, meat, milk, fats, sugar, and fuel. More fruit, vegetables, foods that are not suitable to be sent to camps on the firing lines. No limiting the food of growing children; not eating by anyone of more food than is needed. Buying more food that is grown close to home.

Is any of this too hard?

Save The Wheat.—One wheatless meal a day. Use corn, oatmeal, rye or barley bread, and non-wheat breakfast foods. Cut the loaf on the table and only as required. Use stale bread for cooking, toast, etc. Eat less cake and pastry.

Our wheat natural harvest is for below normal. If each person weekly saves one pound of wheat flour that means 150,000,000 more bushels of wheat for the allies to mix in their bread. This will help them to save for Democracy.

Save the Meat.—Beef, mutton, or pork not more than once daily. Use freely vegetables and fish. At the meat meal serve smaller portions, and stews instead of steaks. Make made dishes of all left overs. Do this and there will be meat enough for everyone at a reasonable price.

We are today killing the dairy cows and female calves as the result of high prices. Therefore eat less and eat no young meat. If we save an ounce of meat each day per person we will have additional supply equal to 2,200,000 cattle.

Save The Milk.—The children must have milk. Use every drop. Use butter milk and sour milk for cooking and making cottage cheese. Use less cream.

Save the Fats.—We are the world's greatest fat wasters. Fat is food. Butter is essential for the growth and health of children. Use butter on the table as usual but not in cooking. Other fats are as good. Reduce use of fried foods. Soap contains fat. Do not waste it. Make your own washing soap at home out of saved fats.

Use one-third ounce less per day of animal fat and 375,000 tons will be saved yearly.

Save The Sugar.—Sugar is scarcer. We use today three times as much per person as our allies. So there may be enough for all at reasonable price, use less candy and sweet drinks. Do not stint sugar in putting up fruit and jams. They will save better.

If everyone in America saves one ounce of sugar daily, it means 1,100,000 tons for the year.

Save The Fuel.—Coal comes from a distance and our railways are overburdened hauling war material. Help relieve them by burning fewer fires. Use wood when you get it.

Use The Perishable Foods.—Fruits and vegetables we have in abundance. As a nation we eat too little green stuff. Double their use and improve your health. Store potatoes and other roots properly and they will keep. Begin now to can or dry all surplus garden products.

Science Says

No other palatable article of food is furnished the public containing the same amount of energy per pound for a price as low as that paid for sugar. Insist on having

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

For sale at all dealers in 10, 25, 50 and 100 pound bags. "Buy it by the Bag."

Made by
UTAH-IDAHO SUGAR COMPANY.

Save The Fruit You Preserve

by double sealing the jars. After putting on the cap, just dip the whole top in Parowax. Then air can't get in to start fermentation.

Jellies cannot mould if Parowax is poured into the tops of the glasses.

Parowax is tasteless and odorless; guaranteed under the Pure Food and Drugs Act.

Sold by grocers and druggists everywhere in handy one pound packages.

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(A Colorado Corporation)
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SEND for Free Plan Book of 60 practical and beautiful American Homes—with floor plans, exterior views, prices and specifications. The Plan Book explains the tremendous, vital, money-saving reasons why YOU should buy your home from the largest ready-cut house manufacturers in the West—the world's greatest lumber market.

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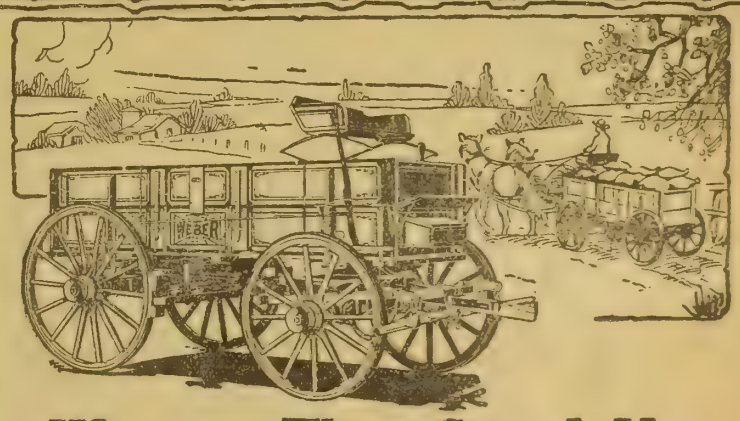

Wagons That Stand Up

BEAR this point in mind the next time you buy a wagon—**Columbus and Weber wagons are guaranteed to stand up under capacity loads.** You don't have to be a wagon expert to buy a **Columbus** or **Weber** wagon safely. All you really need to know is the weight of your heaviest loads. Buy a wagon marked to carry that load and we guarantee safety and satisfaction worth more to you than all the talking points of all the wagons in the market put together.

Ask any dealer who carries **Columbus** or **Weber** wagons to show you just what we mean by this statement, or write to us for full information. Our wagons have many good features—the International fifth wheel, the sandboard wear plate, link end rods, folding end gate, superior material—more features than you will find on any other wagon. All these help to give the good service, long life and economy that you get with **Columbus** or **Weber** wagons. See the wagon or write to us before you buy again.

International Harvester Company of America
(Incorporated)

Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

DAIRYING

SELECTING A DAIRY BULL.

In selecting a bull for use in his herd, the dairyman must not lose sight of the fact that good qualities may be bred out as quickly by the use of the scrub bull as they can be improved by the use of a pure bred sire.

For some reason, many dairymen of the present day place a low estimate upon the importance of the bull that they use in their herds.

The aim of the dairyman should not be to create lines of beauty as establish points pleasing to the eye, but to breed in a manner so as to develop and perpetuate a tendency to produce a profit at the pail.

The bull at the head of the herd should come from a succession of sires and dams that were good milkers and that could be depended upon to transmit these qualities to their descendants.

It is impossible for any one to tell how bulls will breed until they are tested, yet the intelligent and careful herdsman and farmer can guess with approximate certainty as to the general character of the get.

Good breeding bull must have a masculine appearance. A bull with light jaws, narrow face and forehead, slim neck and horns, thin neck and shoulders, is seldom an excellent sire of good milkers. This does not imply that he must be coarse; on the contrary, he must be fine. Coarseness may be defined as unevenness, while fineness is the result of uniformity. Each part should fit smoothly and evenly to those adjoining it.

A bull is valuable only as his breeding is valuable. This depends, of course, to some extent upon the cows that he is mated with. Great extremes between sires and dams seldom nick well together. The intelligent breeder and dairyman is selecting his herd bull will have regard to the cows with which he is to be mated. If they are undersize, he will select a bull of good size, but not too large. Great extremes don't mix well. If his cows are large and inclined to breed too much bone for the amount of flesh, he will select a bull of rather compact form and fleshy qualities, but one that is not too much undersize.

The skilled dairyman, before selecting his bull, will determine the kind he wants, and will be able to give an intelligent reason why he wants him, and after having him, will know how to use him. The ability to answer intelligently to what, why and how is almost indispensible to the dairyman as it is to the man who follows any other profession.—W. Milton Kelly.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE

AND

SOYA BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

FIRST ANNUAL REPORT OF THE WELLSVILLE COW-TESTING ASSOCIATION

September 1916 to September 1917

By LeRoy W. Hillam.

This organization is know as The Wellsville Cow-Testing Association and is the only organization of its kind in Utah.

Purpose: The objects ofthe Association are determine the exact production of butter fat of each cow and to determine the amount of profit or loss for the year; to determine the best cows from which to save the heifer calves in order to build up our herds and improve the average production per cow; to determine the meat profitable feeds and the most economical way of feeding; to weed out none-paying "Boarder" cows; to improve Dairy conditions in general and raise the standard of the dairy business in this community and state. Furthermore, to create a more co-operative and unified spirit among the dairymen of the community.

Conditions: The records made in most cases under adverse conditions, due to the shortage of feed and extreme weather conditions. Several herds were poorly housed and as a consequence caused a wide variation from normal conditions. In many instances cows were fed on alfalfa and wild hay alone, while in a few cases animals were made to exist on straw and beet pulp. This is a handicap to the animal, for all dairy authorities agree that the cow must be first of all well sheltered and properly fed and cared for, and given the correct amount of concentrates, roughage, and succulent feed in a variety of palatable forms. In most cases the feed has been mainly alfalfa hay and wet beet pulp, while in a few instance grain has been fed to some extent. The late spring caused a shortage of hay and as a consequence, poor results.

Explanations: As a majority of the members sell their milk on a butter fat basis to the condensed milk companies, the prices of butter fat has been uniform each month, according to the price paid for milk at the stand. No credit was given for the calf nor manure, which it is assumed will practically offset the cost of labor and Association dues for the year. All grain and beet pulp fed, and hay where possible to do so, has been weighed. Feed has been charged on a basis of $10.00 per ton for alfalfa hay during the entire year; grain at a uniform rate governed according to wholesale market prices, and wet beet pulp has been charged at $2.00 per ton. Summer pasture has also been charged at $2.00 per month.

The average production for the Association figured on a twelve month basis is 299.2 pounds of fat per cow. This is a remarkable showing when we consider that the average Utah cow produce only 160 pounds of fat in a year.

The highest individual yearly record in the Association was made by "Jersey" a six year old grade Jersey owned by John Darley. She produced 13,334 pounds of milk with an average of 4.71 per cent making 622.4 pounds of fat. This is a new state record both for grade and pure bred cows. The second cow for the year was "Star" a nine year old native cow also owned by Mr. Darley. Her production was 13,932 pounds of milk testing 3.87 per cent producing 542.8 pounds of fat. This was the highest milk record of the Association. A very good testimony regarding perpotency and the influence of the sire upon the get is the fact that "Star" is the mother of "Jersey." Third cow for the year is "Nig," an eight year old grade Jersey owned by John L. Green. This cow had been milking eight months when the test was started and did not drop a calf while on test, yet her year's production was 10,301 pounds of milk testing 5.16 per cent, with a production of 531.1 pounds of milk testing 5.31 per cent. She produced better than 40 pounds of fat in the 20th month of her lactation period. Two other state records, making three in all for the Association, are: "Roanie II, a junior three year old grade Jersey owned by John Darley; 529.4 pounds of fat; and "Yellow" a junior two year old grade Jersey also owned by Mr. Darley; 392.5 pounds of fat.

There are forty nine herds, with a total of 617 cows on the books of the Association. Forty-six of these herds with an average total of 368 cows completed the year's work. This is the largest number of herds in any Association in the world handled by one tester.

The highest herd record for the year goes to John Darley's grade Jerseys; these twenty cows averaged 10,200 pounds of milk and 466.0 pounds of fat. We believe this to be the highest average of any grade herd in the United

Complete Electric Service Adds to Your Comfort, Lessens Your Work

Electric current is one of the very few commodies—if not the only commodity, playing an important part in the comfort, convenience, health and happiness of the modern home, which has not increased in cost. A dollar will buy more electric light, electric power or electric heat today than ever before.

Your Home is wired for Electricity---but are you making the most of it?

Is the house adequately lighted? When it's bleak and cold outside this winter, you'll appreciate the cheery hospitality which plenty of electric light affords.

Is your wife enjoying the many households comforts and conveniences which electricity makes possible — vacuum cleaner, electric washer, electric iron, electric toaster, and—the greatest boon of all to the housewife—an Electric Range?

Is your barn wired for electricity? Are you taking advantage of the greater convenience and greater safety of electric light in your barn? Are you saving time and money by using electric power for pumping, grinding feed, hoisting hay, turning the grindstone, and the many other uses to which electricity is perfectly adapted on the farm?

If you have not sufficient electric outlets in your home—if your barn is not wired for electricity—if you are not using electric power about your premises, call in to see us and let us tell you how little it will cost and how easy it will be for you to enjoy the added convenience and economy of COMPLETE ELECTRIC SERVICE.

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Efficient Public Service

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Bog Spavin or Thoroughpin

but you can clean them off promptly with

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and you work the horse same time. Does not blister or remove the hair. $2.00 per bottle, delivered. Will tell you more if you write. Book 4 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts. Allays pain quickly. Price $1 and $2 a bottle at druggists or delivered. Made in the U. S. A. by W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

States and would appreciate any information regarding a grade herd with a higher average per cow, taking the herd as a whole. John L. Green's grade Jerseys are second with an average of 8,760 pounds of milk and 382.0 pounds of fat. LeRoy L. Greene's mixed herd is next with 7,215 pounds of milk and 356.6 pounds of fat as an average.

ducers of butter fat for the year are all from John Darley's herd. These cows are:

Topper's Conan's Drip 321711	.075 per lb.
Jersey	.077 per lb.
Ethel	.077 per lb.

The three most economical producers of milk are as follows:

Owner	Cow	Breed	Cost
John Darley	Bud II	Jersey	$ .318 per 100 lbs.
John Darley	Star	Native	.350 per 100 lbs.
Thomas Darley	Blackie	Holstein	.355 per 100 lbs.

The three most economical producing herds for fat are:

Owner	Breed	Cost
John Darley	Jersey	$ .09 per lb.
LeRoy L. Green	Mixed	.105 per lb.
Howard Leatham	Holstein	.111 per lb.

The three most economical milk producing herds are:

Owner	Breed	Cost
John Darley	Jersey	$ .395 per 100 lbs.
Thomas Darley	Mixed	.477 per 100 lbs.
T. W. Hall	Mixed	.486 per 100 lbs.

The highest average testing herds are:

Owner	Breed	Test
LeRoy L. Green	Mixed	4.99%
Albert Savage	Jersey	4.92%
John Darley	Jersey	4.7%

The highest testing cow for the year is a pure bred Jersey "Nellie Lassie" owned by Albert Savage. Her average test was 6.8%.

Fifteen herds averaged over 300 pounds of fat per cow. They are as follows:

Ten Leading Herds.

Owner	No. Cows	Breed	Milk	Test	Fat
John Darley	20.0	Jersey	10,200	4.7	466.0 lbs.
John L. Green	6.66	Jersey	8,760	4.36	382.0 lbs.
LeRoy Green	4.5	Mixed	7,215	4.99	356.6 lbs.
Moroni Green	3.85	Mixed	8,896	3.58	354.2 lbs.
Wm. Jones	9.66	Holstein	9,233	3.86	344.6 lbs.
Thos. Bradshaw	9.16	Holstein	9,657	3.81	340.5 lbs.
John A. Leishman	13.86	Mixed	7,750	4.26	330.2 lbs.
D. T. Stuart	8.17	Mixed	8,198	4.06	327.2 lbs.
John H. Stuart	10.42	Holstein	8,628	3.87	321.8 lbs.
D. A. Kerr	9.83	Holstein	8,347	3.77	317.8 lbs.
T. G. Hall					319.9 lbs.
John Perkins					309.9 lbs.
Wm. Darley					307.1 lbs.
George Perkins					306.6 lbs.
Howard Leatham					304.7 lbs.

Joseph R. Brown and John Brenchley in six months testing averaged on a year basis as follows:

	Cows	Milk	Test	Lbs. Fat
Joseph R. Brown	2.0	10,292	4.41	453.6
John Brenchley	3.42	10,476	3.99	412.5

Fifty seven cows gain the distinction of being placed on the "Honor Roll" for the year, each of them having produced over 350 pounds of fat.

Summary.

Summary of Year's Work: The Association average is 299.2 pounds of fat per cow and the cost of feed $42.33 per cow. There were 46 herds completing the year's record, the average number of cows being 368. Five herds were using pure bred bulls September 1, 1916. During the year twelve pure bred bulls were purchased and at present twenty one herds are receiving the benefit and use of these animals. Ten pure bred cows and heifers were purchased by the Association members. No silos were in the Association at the beginning of the year, but two were built during the year. One Bull Association was organized and two Association members are deriving the benefits of this organization. Eighty nine "Boarders" were sent over the butcher's block for beef and yet we have about one half this many left that are very near the dead line. Fifty one cow were sold for dairy purposes.

The Association had one cow produce over 600 pounds of butter fat, 5 cows over 500 pounds of fat, 19 over 450 pounds of fat, 28 over 400 pounds of fat, 57 over 350 pounds of fat and 136 over 300 pounds of fat. Fifteen herds averaged over 300 pounds of fat.

The lowest herd average is a herd of nondescript cows given nodescript care. These 6.83 cows averaged 150.5 pounds of fat. The lowest producing cow for the year was No. 5 in Herd "R", she produced 125 pounds of fat as a year's record.

KEEP SEED CORN SAFE

Seed corn may be left on the racks where the ears have been dried. But it is generally preferable to store the ears in mouse-proof barrels, boxes, or crates during the winter. In any case they must not be exposed to dampness or they will absorb moisture and be injured.

After hanging in the drying shed, or lying on the racks where there is constant circulation of dry air for the first two months after they have been selected from the stalks in the field, the seed ears should be bone dry and contain less than 10 per cent of moisture. Some farmers place the thoroughly dry ears in the center of a wheat bin, and then fill the bin with loose, dry wheat.

Destroy Weevils and Grain Moths.

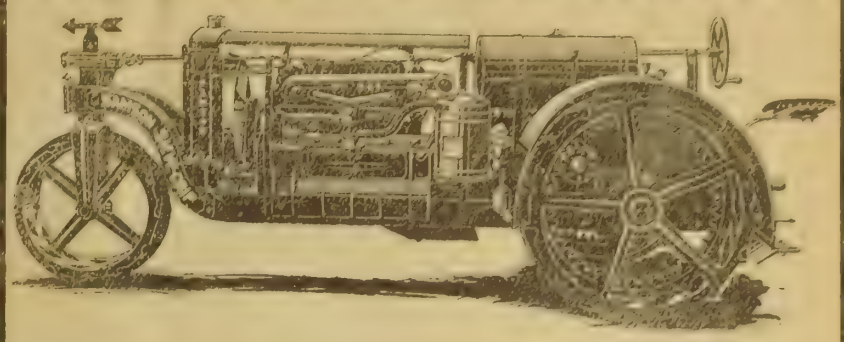
If signs of weevils or grain moths show, the corn should be inclosed with carbon bisulphid in a practically air-tight room, bin, box, or barrel for 48 hours. The liquid bisulphid should be placed in shallow dishes on top of the box or barrel holding 10 bushels or less. The fumes from the bisulphid are heavier than air and gradually fall to the bottom of the receptacle, permeating the whole mass. One pound of the carbon bisulphid is enough for a room or bin 10 feet in each dimension. After fumigation the ears must be thoroughly aired, whereupon the unpleasant odor disappears. Great care should be used with carbon bisulphid; its fumes are quite as inflammable as those from gasoline.

To prevent the entrance of weevils and moths, the ears may be stored in comparatively air-tight boxes or barrels with one pound of moth balls or naphthalene for each bushel of corn, which is not injured. Ten pounds will protect enough seed to plant 6 acres.

WARNING AGAINST ASPHYXIATION

During the filling of the silo there is danger of death from asphyxiation by fumes of carbon dioxide. Large amounts of gas are produced in the silo and may collect in dangerous quantities if conditions become favorable. To avoid accumulations of gas, doors should be left open as long as possible. Men should not stay in the silo when the blower is not running; and above all, they should not lie on the fresh silage. If work has been stopped for any length of time, men should not again enter the silo until the blower has been working a few minutes in order to remove the gases. In the case of the pit silo, men should never remain in it when the blower is not running; and the blower should also be running before anyone enters.

SAMPSON SIEVE GRIP TRACTOR



This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns gasoline, distillate or kerosene, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price $1,600.00, delivered on cars at Salt Lake. Tractors on hand for immediate delivery. Also plow equipment for same.

UTAH IMPLEMENT-VEHICLE COMPANY
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Hardware
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Veribest S.P.

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WARRANTED FULL VALUE

Secure them from Merchants of your town.

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you may easily know whether Sunripe Stock Feed is producing results, by watching the milk pail.

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is a scientifically balanced compound of grains and grain products. Order a supply and increase your milk production.

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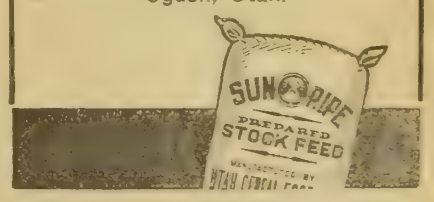

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LIVE STOCK

MAKE MONEY WITH HOGS AND ALFALFA

From Reclamation Record.

On the desk of the man who is trying to tell the story is a small heap of material. First, there is the morning newspaper. In small but perhaps historical figures the market page announces that hogs—just average porkers—are being exchanged in Chicago at the rate of 100 pounds for some $16 (sixteen dollars), spelling it lest the printer know something about old-fashioned hog prices and think this a typographical error.

Beside the newspaper is a recent bulletin of the United States Department of Agriculture describing results of experiments with hogs on alfalfa obtained on a western reclamation project. These results, when corrected to this morning's prices, bring out the remarkable fact that an acre of alfalfa, when supplemented by a small ration of corn, can, in these days, make $288.46 worth of pork in one season, the cost of the corn having been subtracted from this amount. On this basis the bulletin has proof to show that for three years hogs used in this test, correcting again to present prices, paid an average of $52.25 a ton for their alfalfa, which they harvested themselves, while $6 a ton for hay in the stack has been considered a good price on this project, and even now it brings only about $15 a ton. Estimated farm values of $14 a hundred for pork and $2 a hundred for corn have been used in making these corrections.

Finally, on the desk with the newspaper and the bulletin and the small heap of material on the general subject, are a few sheets of note paper recording some of the enthusiasm of a department specialist.

Now, it takes an ultraconservative sort of person to consider these facts and then write about it in terms fairly sober and sane. First, because in dealing with the mater one has new scientific material containing elements of successful farming and prosperity, when the possibilities of their application under present conditions are considered, such as have been equaled in no other age of farming. And, second, because the opportunity is driven home with double force when the imperative and increasing meat needs of more than 1,000,000,000 people fighting for world democracy are realized. But the writer promises to be ultraconservative.

The reader who has come this far knows, without even unlimbering his imagination, what it is. It is not a war-time opportunity wholly. It represents one of the most permanent of agricultural systems, and at the same time one which if introduced extensively on the 24 western reclamation projects this year, would promise, perhaps, the largest service which the people of these projects can give their country.

The fascinating facts which bring it to the front at this time, and which were stated in brief in a preceding paragraph, are contained in a recent report of three-year test conducted at the Scottsbluff Experiment Farm. But before they are presented here in detail, viewed from the project farmer's special vantage point, may be sketched.

The 24 reclamation projects are located in 15 Western States. Alfalfa can be grown on all of them. Where corn can not be grown, barley or milo, either of which is practically equivalent to corn in feeding value, may be produced instead. On these projects labor always is scarce. The hog-on-alfalfa system reduces man labor to a minimum. One of the first crops of which there is a local oversupply of the reclamation projects is alfalfa. The acreage devoted to this crop, particularly during the early stages of the development of a project, is frequently greater than that devoted to all crops. combined and the yield is abundant. The cereal crops are also very important in the first years of irrigation farming. Under ordinary conditions neither alfalfa hay nor grain will bear the cost of transportation to the market centers. It therefore becomes necessary to convert these crops into some form of livestock products which, because of relatively high value per unit of weight, will stand the transportation charges from the projects to places of manufacture or consumption.

The hog is one of the most efficient of farm animals in converting alfalfa and gain into a readily marketable product. He pays higher prices for alfalfa hay than any other customer. The returns secured by pasturing hogs on irrigated alfalfa, supplemented with a light ration of grain, are frequently three to five times as great as could be obtained by selling the alfalfa as hay. If efficiently managed, hogs can be made to pay from 25 to 50 per cent more for grain than can be secured by the direct marketing of that crop. Furthermore, the amount of capital required to make a start in the swine industry is relatively small and the returns come quickly.

Many of the farmers are financially unable at present to secure dairy cows or to get cattle or sheep to feed. There are very few, however, who can not get into the hog business in a very short time. Less capital and time are required in getting into the hog business than in any other livestock industry. With $25 to buy small pigs and with little grain and good alfalfa pasture the farmer can get well started in two years. Horses and cattle increase annually 60 to 80 per cent, sheep a little more than 100 per cent, while the swine population of an irrigated farm can be made to increase from 500 to 1,000 per cent a year, and the animals are marketable before they are a year old. For these reasons the production of pork is one of the most promising industries for an irrigated farm. Much of the best progress made on several of the Government projects in recent years is directly attributable to the development of swine production. The abundance of cheap feeds, in favorable climatic conditions, and the advantages of isolation in the prevention and control of diseases all tend to reduce the cost of producing pork on these projects.

In the experiments at Scottsbluff the pastured plats were divided into two equal parts, and the hogs moved from one to the other as the alfalfa became short or during irrigation. It was the plan to pasture the alfalfa to its full carrying capacity but not to overgraze. During the pasturing season each year, which usually is from May to October, two sets of hogs were used. Fall-farrowed shotes were used during the first period—May and June—and spring-farrowed pigs during the second period—July to October. The reason for using two sets of hogs is that fall pigs, when fed a liberal grain ration, are ready for market about July 15, and April-farrowed pigs are not large enough to utilize the pasture much before that date.

The 2 per cent ration of corn per day for each hundred pounds of live weight of hogs. In other experiments rolled barley and cracked milo have been found to have about the same feeding value as corn. Grain was fed once a day, in the evening. It is believed that when fed grain only once a day the hogs will make more use of the pasture than when grain is fed both morning and evening, as is usually the case. When not fed until evening the hogs become hungry and will graze during the cool hours of the evening, even after the grain is eaten. Again, if the hogs are not fed grain in the morning they will stay out on pasture until the heat of the sun drives them to shade. The method of feeding grain once a day also saves labor. The hogs had access to salt, slacked coal, and rock phosphate all the time.

Summarizing the results of the three years' tests and reducing the figures to an acre basis, the following table tells the story:

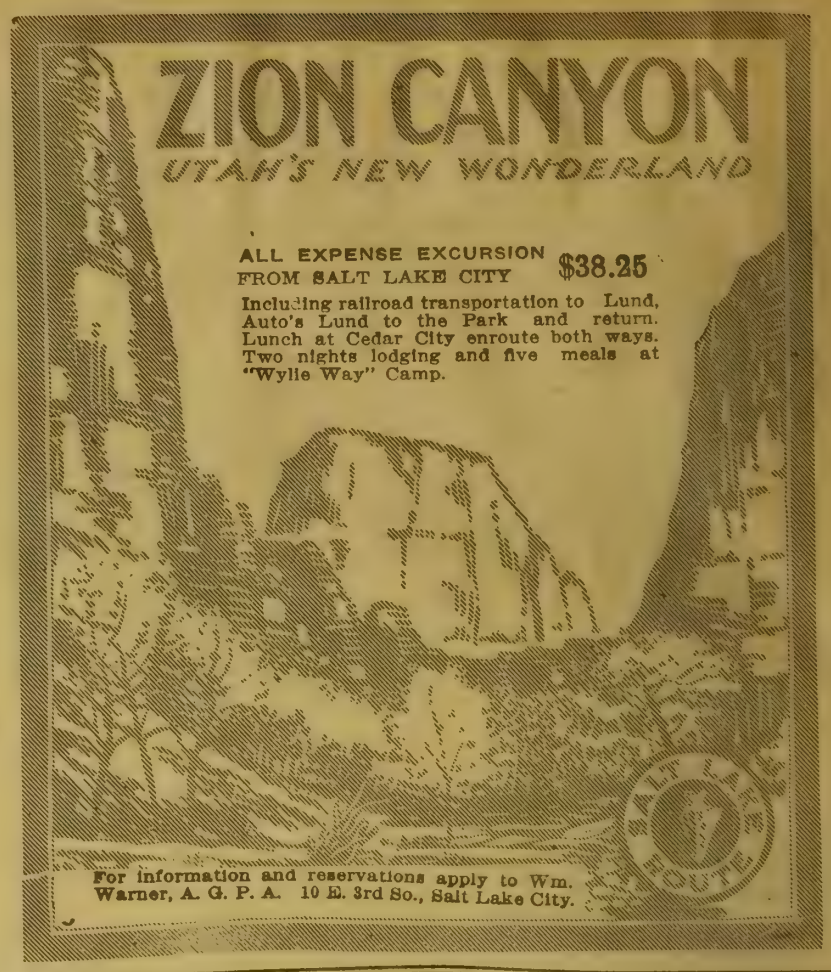
Results obtained by feeding eight lots of pigs on alfalfa pasture, supplemented with approximately a 2 per cent corn ration, at the Scottsbluff Experiment Farm in 1913, 1914, and 1915.

Items of comparison.	First period	Second period	Entire season
Number of lots averaged	4	4	8
Total gain per acre ....pounds....	1,271	1,910	3,181
Corn fed ....do....	3,671	4,173	7,844
Gain per pound of grain ....do....	2.88	2.18	2.47
Gain per 100 pounds of grain ....do....	34.7	45.9	40.5
Financial statement:			
Net returns per acre of pasture	$49.70	$89.05	$138.75
Cost per 100 pounds of gain (pasture at $15 per acre)	3.36	2.86	3.11
Equivalent paid for hay, per ton	22.19	27.13	25.13

The prices used in making the calculations may be corrected approximately to present farm values by changing the $7 a hundredweight for pork to $14, the corn from $1.07 a hundredweight to $2, and the alfalfa pasturage from $15 an acre to, say, $20 an acre.

On an acre basis, then, according to the table, the four lots made an average total gain of 1,271 pounds during the first period and 1,910 pounds during the second period, or a total of 3,181 pounds for the season. During the first period the hogs were fed 3,671 pounds of corn, and during the second period 4,173 pounds, or a total of 7,844 pounds during the season. It required 2.88 pounds of corn in the first period and 2.18 pounds in the second, in addition to the alfalfa pasture, to produce 1 pound of gain. For every 100 pounds of corn fed the hogs made a gain of 34.7 pounds during the first period and 45.9 pounds in the second, or an average of 40.5 pounds for the season.

With hogs at $14 a hundredweight



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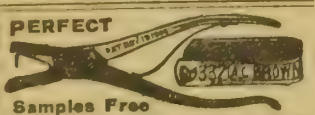
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and corn at $2 a hundredweight, the net return per acre of alfalfa pasture was $258.46 for the season.

Alfalfa plats similar to those pastured and in the same field have each year been harvested for hay. The three-year average yield of these plats was 5.52 tons an acre, or 2.24 tons for the first period and 3.28 tons for the second period of pasturing. On the basis of this yield, if it is assumed that the cost of caring for the hogs is equal to the cost of harvesting the hay, the hogs paid an average for the season of $52.25 a ton for the hay. On the project $6 a ton in the stack has been considered a good price for alfalfa hay.

The Scottsbluff tests also showed advantages for hogging corn after the end of the alfalfa pasturing season. In three years' experiments, hogging corn without supplementary feed produced an average of 896 pounds of gain, worth, according to the then prevailing prices, previously stated, $65.72 per acre, or $1.50 per hundredweight of the estimated yield of corn. In two years' experiments, hogging corn without supplementary feed produced an average of 744 pounds of gain, worth $52.08 per acre, as compared with 930 pounds of gain, worth $65.10, where the hogs had access to alfalfa pasture and 1,029 pounds of gain, worth $72.03, where the hogs were fed tankage in addition to the corn, as compared with $1.55 per hundredweight where the hogs had access to alfalfa pasture and $1.50 per hundredweight where tankage was used. The use of either alfalfa or tankage resulted in more rapid and cheaper gains than were secured where no supplementary feed was used.

On the reclamation project the leading swine growers raise two litters a year. This practice is recommended where satisfactory winter quarters are provided for the sows and pigs. Where adequate shelter and warmth are lacking, large losses occur in the fall litters during the cold weather. The chief requirements for a satisfactory farrowing house are warmth, sunshine, good ventilation, and dryness. Farmers who expect to build hog houses will be furnished plans of various types of buildings, on request to the Department of Agriculture. These houses are well adapted to conditions on the projects and can be built at relatively small expense.

While it is necessary to feed more grain during the winter than during the summer, not nearly so much grain is required during the winter by fall pigs as is necessary for pigs farrowed in midsummer. For this reason fall pigs can be wintered at comparatively low cost. Alfalfa hay, supplemented with grain and frequently with stock beets or sugar beets, is a good winter feed. When barley or milo is fed to hogs the feed value is increased by rolling or grinding.

On the reclamation projects, where the farm unit is small, few farmers produce hogs in carload lots. Hence, the producer in marketing his output must sell to a local buyer or co-operate with his neighbors in shipping to market. Of the two, the latter is decidedly preferable and is properly a function of a co-operative association. Co-operative marketing already is being done with gratifying results on some of the projects. But the factors of successful co-operative marketing extend farther back than the mere act of collective shipping. The breeding and feeding practices need to be adjusted to the requirements of efficient marketing, so that animals of the desired size finish, and number may be ready at the proper time. This, again, requires concerted action and community interest.

Cholera, the most serious of the disease affecting hogs, is no more a nightmare to farmers; it is preventable. The experiments of the last few years in the control of this disease on certain of the reclamation projects have demonstrated fully that through community co-operation disease control is purchasable. The control of hog cholera is particularly a community matter, as infection is carried by irrigation water, birds, dogs, and various other agents.

No treatment at present known is effective in controlling or eradicating hog cholera unless careful sanitary methods are practised. The serum-alone treatment provides immunity for 30 to 90 days. Unless proper sanitary methods are taken, reinfection may cause new outbreaks. Sanitary measures include the prompt cleaning up and disinfection of hog lots and hog houses, and the isolation of sick hogs of as to minimize the distribution of the hog-cholera germs.

To prevent sore mouth among hogs the quarters should be sprayed once are twice a month with some good disinfectant, and air-slaked lime should be scattered around. If the disease occurs in the herd, the infected pigs should be immediately separated from the others. The treatment for sore mouth is to plunge the animals head first into a solution of permanganate of potash, made by dissolving this substance in water at the rate of 1 ounce to a gallon. Dipping should be done at least twice a day until the pigs are cured. After dipping, it is well to touch up the ulcers with a small stick of silver nitrate, which may be purchased at any drug store.

Crude oil for kerosene emulsion applied by means of a spray pump or water sprinkler will eradicate lice from hogs. When treating a herd, all the litter around the sleeping quarters should be raked up and burned and the quarters thoroughly sprayed with the same solution. Whitewash applied to the sides of the sleeping quarters is beneficial.

To treat hogs for worms, withhold all feed and water for 24 hours, then give each pig from 1 to 4 ounces of castor oil, to which has been added oil of American wormseed as follows: Small pigs, 2 to 3 months old, 35 drops; pigs weighing 50 to 100 pounds, 50 to 100 drops; large pigs, 1 teaspoonful. Each pig should be dosed separately if the best results are to be obtained.

SORES ON HORSES.

Bursatti, or So-called Summer Sores.

Many horse owners find that in summer their horses are troubled by sores which resist usual methods of treatment, and which in this respect differ from ordinary wounds. These growths or sores are supposed to be of fungous origin. Their true nature and cause, however, have not been definitely determined. They are especially prevalent during hot weather, and are called summer sores on account of their persistency and the difficulty with which they are healed during the summer season. As cool weather approaches, healing frequently takes place, but there is always the possibility of the wound breaking out anew with the advent of warm weather. They may appear on any portion of the body, but are especially troublesome when occuring on the lower parts of the limbs or at points where the harness touches.

Frequently the first indication or appearance of the trouble is a small lump resembling a grain of shot beneath the skin. In a few days the skin sloughs off over the spot, leaving a raw surface. This increases in size until in a few weeks there is a raw surface from 1 to several inches in diameter. Commonly there is intense itching, and the animal bites and rubs the parts, aggravating the condition and increasing the size of the sore. The edges of these sores are usually rough in appearance and raised above the surface of the skin. When examined closely they appear like a mass of dark bruised tissue in which is embedded more or less of a yellow, gritty growth.

Numerous methods of treatment have been resorted to in this condition, with varying results, and frequently no improvement is noted until the approach of cold weather. Many cases, however, yield to the following treatment: The wound is thoroughly scraped with a surgeon's sterilized curette, or with a clean, disinfected dull knife, after which it is showered with cold water for 10 or 15 minutes. Iodoform is then dusted on and rubbed into the wound by means of a wad of absorbent cotton, and the wound is immediately covered with a layer of collodion. The iodoform and collodion applications are repeated every 24 hours for 15 days or until the sores heal. Ether or chloroform may be used in place of iodoform, being poured on cotton and applied to the sore for two minutes before painting it with collodion.

Formalin has been used by injecting it into the tissues. This, however, should be usely only by a qualified veterinarian, as its improper use might cause severe sloughing and disastrous results.

Not infrequently a valuable stallion becomes affected, in which case the genital organs may become involved and incapacitate the animal for breeding purposes. In such instances the injection of 75 to 100 grains of salvarsan, or neosalvarsan, into the blood circulation has proved almost a specific. This, however, should be carried out only by a competent veterinarian. It should also be considered that a single injection of this preparation costs from $15 to $20, and its use is therefore advisable only for the treatment of valuable animals.

Tractor Tests

Conducted at Fremont, Neb.

July 26 to August 2, 1917, by the Agricultural Engineering Department of the University of Nebraska

Prof. L. W. Chase in Charge

A series of interesting tractor tests have just been made. Every farmer may now know facts.

The object of the experiments was to determine under actual farm conditions the amount of fuel required and the rate of doing various field operations, and to study the quality of the work done. Also the effect of different depths of plowing in the same field.

The tests were not of a competitive nature, but were made with the object in view of observing tractors in actual farm work so that all farmers might have actual figures.

The tests were made with Case tractors operating standard farm equipment, under the auspices of the Department of Agricultural Engineering of the University of Nebraska, directed by Prof. L. W. Chase, assisted by Prof. O. W. Sjogren, Mr. Louis Runnels and Mr. Ray W. Carpenter.

For Free Distribution

A bulletin has just been published covering twelve tests. This is the first authoritative statement of its kind.

It shows the equipment used, the kind of fields, the different operations. Of chief interest to all farmers is the fuel consumption and cost per acre. Much of this information has hitherto been speculative. Now it is down in black and white. It shows the advantages of Case tractors.

Some of the Data

Each test is complete. Different size tractors are used. Some tests are for plowing at different depths. Some are for spike-tooth harrowing and disking, drilling, etc.

Kerosene was used, and based on a cost of 8½ cents per gallon, the cost per acre for plowing under different conditions and depths is shown. These are exact figures—not estimates. The temperature was 100 degrees in the shade—but the heat, however, had no effect on the operation of the tractors in any way.

Send for Your Copy

This bulletin created a sensation at the Fremont Tractor Demonstration. All farmers have been waiting for conclusive figures. Case, the leader for 76 years in power farming, now sets a new pace. No farmer should fail to get this bulletin.

Copies are free. Merely send us your name and address, asking for "The Tractor Tests Bulletin," and a copy will be forwarded at once—without charge. The first edition is just off the press. So don't delay—write today.

J. I. Case Threshing Machine Company, Inc.
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CASE

POINTED WISDOM

The old farmer and his son who had just returned from college were looking at the chickens, when the father saw one of the hens eating a tack.

"What on earth's that air old hen eatin' tacks for?" he asked in amazement.

"That's easy," answered the son, "she's going to lay a carpet.

HOW PRICES ARE DETERMINED

There are many factors in determining the price of food products before it reaches the consumers. Sometimes it is a good thing to have the other fellows point of view.

Recently, J. Ogden Armour, proclaimed as the new ethics of big business that the people have a right to know the factors that enter into the determination of prices. He lays the responsibility of high prices on the advancing cost of the raw material and on the costly service which American consumers demand from their retail distributors.

We quote a few excerpt from the article by Mr. Armour.

"It is up to the purveyors of food to fully explain the causes of high prices and to rely on the American people to approve those advances which are shown to be justifiable or unavoidable." "For after all, business cannot exist without the consent of the people—and ought not exist without their approval.

"Meat is such an important item on the American table that its increased cost has attracted attention and comment somewhat out of proportion to the rate of advance.

"Meat price increases are not due to big profits so far as the meat purveyors are concerned. * * * It is actually a fact that the fresh meat from the steer or hog or sheep is sold by the packer to the retailer at a figure which often fails to pay for the raw product—that is, the animal on the hoof. The profits which enable packers to handle meat at less than cost are due to the utilization of those portions of the animals which until recent years were wasted or destroyed.

"It is necessary that there be a profit in raising meat animals if the supply is to keep pace with the demand. The world demand for food was never greater than it is today. * * * Demand, in short, has run away from supply.

"It is my opinion, however, that before the price of meat—and of other food products as well—can be materially reduced, there will have to be a far reaching change in the demands made by the public upon the retail trade. * * * He (the retailer) is compelled to charge in the neighborhood of 20 per cent of the cost price of each article or each pound of meat, in order to cover the cost of doing business. * * * The retailers will welcome a change in the national methods of retailing which will enable them to reduce their cost of doing business.

"In the first place there are too many stores. It is obvious that if there were only a third as many as now exist, each one would do about three times the volume of business if is now doing, and a huge amount of overhead and fixed expense would be cut off, making it possible to sell goods on a much smaller margin than is now the case. Those merchants who are now doing a legitimate business should be aided, but I believe the public has the same right to limit the number of stores as a means for reducing prices as it has to limit the number of saloons as a means of curtailing the liquor evil.

"If the people of today would adopt the cash and carry system of purchasing instead of clinging to the credit and delivery plan, it would be a boon to both dealer and consumer.

"In a word, when the buying public permits the retailer to dispense with frequent and costly deliveries, when consumers pay their bills, promptly so that the merchant can meet his obligations before having to pay interest, when the quick moving advertised and standardized food crowd the slow moving stuff off the shelves, and when the number of stores is limited to point which will permit of a big business being done by each—then, and not till then—will the retailer be able to pass meat and other foods along to the consumer at a price which will not seem high when compared with the wholesale price thereof."

PLOW THE GARDEN THIS FALL

J. C. Whitten.

Early plowing is necessary for an early garden. Land plowed in the fall will dry quicker and be ready to plant sooner than spring plowed land. The fall plowed garden should be left in the furrow slice unworked, because this rough surface will catch the winter rain and let the water soak into the subsoil below; more soil moisture is stored; more of the surface soil finds its way into the openings in the subsoil thus loosening and ameliorating the latter. The higher masses of surface soil granulate under the influence of alternate freezing and thawing and sun and rain. If a garden is forked or spaded no attempt should be made to level it.

If subsoiling is desirable it should be done in the fall. Usually at this season the subsoil is not wet and therefore will not be puddled by handling. Winter freezing mellows and distegrates the subsoil. Leaves or similar loosening material to be worked into the soil are more plentiful in autumn. This fall working also gives the soil time to settle before spring planting. Soil worked deep in the spring, leaving an opening below, may dry out badly, especially if much coarse organic matter is worked in shortly before planting.

During the first sunny days of early spring the rough surface of fall turned land dries and flocculates. It is in condition to work down and be planted to early vegetables in March or sometimes in February. On the other hand, land which lies unturned, smooth and flat during a wet winter has no dry flocculent surface and remains too wet to handle until late.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.
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FOR RENT

The Bender & Schulze Ranch.

We will rent our ranch for a term of years to the right party. Ranch consists of 280 acres; 155 acres in fair stand of alfalfa. Will cut about 400 tons next year; will put in 20 acres more next spring. Ranch fenced with woven wire fence.

For particulars apply to owners.
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Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

OUR PROPOSITION

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

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200 acre irrigated cattle ranch, adjoining open range and two miles from forest reserve. Has 125 tons hay, 20 acres grain, 5 acres of potatoes, 12 horses, 26 cattle, 22 hogs, 150 chickens, harness, wagons and all the machinery needed. Price $12,000. Good terms.

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$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

RELIABLE FARM BARGAINS

KIMBALL & RICHARDS,
"Land Merchants."

We have right near the town of Tremonton one of the choicest farms to be found in the state of Utah. This farm contains 120 acres, with a beautiful home, lawn and trees; five acres of first-class orchard, large barns that will hold fifty or sixty head of stock and fifty or seventy-five tons of hay. In additoin to this it has a large garage, wagon sheds, large machine sheds, blacksmith shop, tank for water to distribute over the place, a bunkhouse for hired men, an apple cellar. In fact this place is equipped with all the modern buildings that anybody could desire on the farm, costing thousands of dollars. These buildings are in a high state of repair, all painted up in first-class condition, and a very desirable looking farm. This property is situated on the Lincoln highway, right near a school, and one of the nicest towns in northern Utah. This farm can be had at $175.00 per acre, including all im provements; one-fourth down, ten years on the balance, 6 per cent interest. This property this year has taken enough crops off to pay at least one-half of the purchase price of the land.

On Sixteenth South, just off of State street, we have one acre with a three-room house for $1200.00. Small payment down, terms on the balance.

160 acres in Cache valley right near the railroad station and the town of Clifton. This property has been farmed for years and is considered one of the best farms in that part of Cache valley. We are offering this farm for $7000.00. $700.00 down, ten years on the balance.

70 acres in Cache valley on the main county road right near the railroad station; good schools, churches and social conditions near. First-class water for domestic purposes. Water right on the canal. This ground is partly planted in clover this year. If you are looking for a nice farm in Cache valley that is adapted for potatoes, sugar beets, hay, grain, or alfalfa, this farm will appeal to you. The price, $110.00 per acre, 10 per cent down, ten years on the balance.

We have 240 acres in the Bear River valley, water for 60 acres, balance dry farm. This property can be had for $150.00 for the irrigated and $50.00 for the balance. This land can all be irrigated and lies under the canal. We will consider exchanging this property for Salt Lake City real estate.

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FARM AND RANCH DEPARTMENT.

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WHEAT, HAY AND SEED.

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P. O. BOX 225, MYTON, UTAH.

USE MORE CORN IN OUR HOME

(Continued from page 3)

The Rye and Injun mixture was poured into a shallow iron dish, or kettle, about 12 inches in diameter and four inches deep. A cover was placed on the kettle and the kettle was placed in one of the old fashioned Dutch ovens, where the bread was slowly cooked.

The old fashioned Rye and Injun had a hard crust on the top of the loaf and this was used to make "crust coffee" which made a very good tasting beverage, reminding of postum cereal.

The hard crusts were used in another way, and not alone the crust, but slices of the toasted bread. These pieces were broken up into a kettle of hot milk, to which a piece of butter and a couple of pinches of salt had been added; the mixture was brought to nearly a boil and was then ready to use. The dish was called "brewis."

A very successful, though later, rule for making Rye and Injun is the following: 4 cupfuls corn meal, one cupful rye meal, a half cupful wheat flour, two cupfuls sour milk, one cupful molasses, two teaspoonsful soda and salt to taste. If necessary, water is added to make a fairly thin batter. Bake in shallow round iron kettle for three hours in a slow oven.

Corn Meal Mush

For an addition to roast loin of pork or roasted fowl, prepare a corn meal mush. Indian meal is salted and scalded as in making Hasty pudding, and the cooked meal is transferred to a deep long tin dish to form it. Invert the dish and shake out the loaf. Serve hot in form of slices, pouring gravy over them.

Breakfast Spoon-Breads

It is worth remembering tha there are not medium grades of cornbread. It is either irresistibly good or uneatable. So housekeepers who are trying to make their families cornbread lovers must practice for a 100 per cent record. This is especially true of spoon-breads, but the perfect product is worth the effort. These soft cornbreads are very popular for breakfast in the cornbread belt. They are served with a spoon from the dish in which baked. Spoon-bread makes an excellent breakfast combination with hash or scrambled eggs.

Here are three favorite Spoon-Breads.

Virginia Batter-Bread.

1 cup white corn meal.
1½ cups boiling water.
1 cup sweet milk.
1 teaspoon salt.
2 teaspoons baking powder.
2 eggs.

Sift meal into a bowl. See that the water is boiling vigorously, pour over the meal, stirring at the same time. When luke warm, add the sweet milk, the well beaten egg yolk and beat thoroughly. Add the baking powder and last fold in the stiffly beaten whites. Pour into a hot, well greased baking dish and bake in a moderately hot oven thirty minutes. If baked in a shallow pan, twenty minutes will suffice.

Hominy Bread.

2 cups boiled hominy grits.
2 eggs.
1 cup sweet milk.
1-3 cup flour.
1 teaspoon baking powder.
1 tablespoon fat.

Cook hominy with four times the bulk of water. Cool and add the sweet milk and well beaten eggs. Sift in the flour and baking powder. Last add the hot fat and pour into greased baking dish and bake in hot oven until firm and brown, but not stiff.

Cornbread with Rice.

2 cups sour milk.
1 teaspoon soda (scant).
2 cups boiled rice.
1 cup cornmeal.
1 tablespoon shortening.

Combine ingredients in order named and bake in greased bowl until firm.

Midday Dinner Cornbreads.

When there is so much corn and not enough wheat, it is worth while to learn to eat cornbread. The success of this venture depends on the kind of cornbread the American women serves. She may make her dinner cornbread plain or make it with eggs, but if she wants to create a cornbread appetite in her family, she should make it of fresh unbolted meal and make it crisp and golden brown.

Here are two favorite dinner breads:

Corn Pones

2 cups white meal, 2 cups buttermilk, ½ teaspoonful soda, 1 teaspoonful salt, 1 tablespoon melted fat.

Put fat in biscuit tin or iron griddle on top of the stove. While it is heating, sift meal and add salt. Stir soda into the buttermilk, mixing thoroughly. When frothing reaches its height, pour milk into meal and stir together. Add the smoking hot fat. The mixture should be a very stiff batter. If too thick, more milk or water may be added. Drop from spoon in small ablong cakes in the hot pan. Leave the pan on top of the stove until the bread begins to rise, then cook in moderately hot oven. The crust of the cornbread should be thick, crisp, and golden brown.

Cornmeal Sticks.

2½ cups cornmeal, ½ cup flour, 1 teaspoon soda, 1teaspoon salt, 1 teaspoon baking powder, 1 egg, 2 cups buttermilk, 1 cup sweet milk.

Sift meal, flour and baking powder together. Add salt. Stir soda into the buttermilk until thoroughly dissolved, and while milk is frothing vigorously, mix with meal and flour. Add sweet milk. Beat thoroughly and add well beaten egg. Have ready irons well greased and very hot. Pour mixture in at once and bake in quick oven until crisp brown.

Risen Cornbread for Supper.

The spoon breads are equally good for supper and always make a substantial dish with a meat stew. When company is coming or you want to surprise the family, try risen cornbread for supper. It is not advisable to attempt it for breakfast because meal ferments so rapidly with yeast that the product is likely to be sour by morning.

1 cake compressed yeast, 2 cups sweet milk, scalded and cooled, 2 tablespoons brown sugar 2 tablespoons lard, 2½ cups white cornmeal, 1 cupsifted flour, 1 teaspoon salt,2 eggs well beaten.

Dissolve yeast and sugar in lukewarm milk and add melted fat. Stir in the cornmeal, flour, salt and add well beaten eggs. Beat thoroughly. Fill greased bowl two-thirds full. Set to rise in a warm place for about an hour. Be careful that it does not over rise. It should be baked as soon as light. The baking will require from twenty to thirty minutes, according to thickness of pone.

—o—

THRESHING BEANS

In sections of the country where beans as a field crop have been recently introduced as a new feature in crop rotation the most important question after the crop has been secured is how to best thresh them. Where there are not enough beans raised to warrant the purchase and operation of a regular bean thresher the best and cheapest way is to tread them out with horses on the barn floor. This does not split the beans but does polish them so that their color will be bright. It is surprising how fast they can be threshed out in this way. The beans must be spread pretty thick on the flooor to begin with an kept stirred up and turned as the work progresses. When the threshed beans and dirt gets five or six inches deep on the floor they are run through the fanning millby taking the bottom out of the hopper and using the wire rake in place of the chess board. This causes the coarse materials to be blown over the tail board and allows the beans to pass freely through the screen. While they can be threshed out with the flail in small quantities, this method is more apt to split them. The crop cannot be threshed by the ordinary grain separator as the motion required to thresh them clean will badly split the beans. A sort of make-shift is sometimes arranged by removing a part of the cylinder and concave teeth and reducing the motion, but this is not a satisfactory method from any point of view. The regular bean machine has a double cylinder and is arranged all through in a different manner from a grain separator. I have threshed hundreds of bushels of beans with horses before the advent of the regular bean thresher and would advise that method in localities where but few beans are raised.—H. E. Cox.

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THE UTAH FARMER

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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 9 LEHI AND SALT LAKE CITY, UTAH SEPTEMBER, 29, 1917

The Time For Filling Your Silo Is Here

By William Olsen.

Carelessness and lack of proper methods in filling silos have spoiled many a hundred ton of good corn and given ensilage an unfair "tryout."

Common sense should be used when filling the silo, for where one lack a practical knowledge of the work of filling a silo, he should profit by the experience of others.

Corn makes the best silage when the majority of the ears are dented or just beginning to glaze. If corn is put into the silo before this stage of maturity is reached, the silage becomes very sour or acid and is apt to have a low feeding value.

When corn becomes dry from being frosted or allowed to get ripe, it will make good silage if water is added at filling time. No definite rule can be given as to the right amount of water to add, but the aim should be to make the moisture content equal to that of green corn.

It is very essential that the cut corn be thoroughly mixed after it is elevated or blown into the silo. If this is not done the heavier portions will fall in one place and cause the silage to settle unevenly, resulting in much loss, due to spoiling.

The importance of some of these little things a sthey may seem to the beginner must not be over looked. They mean the success or loss of a great deal to the new silo owner.

During the process of filling, the cut material should be kept slightly higher at the edges than in the center, and well tramped close to the sides, where friction prevents it from settling. It is not necessary to tramp in the center of the silo, for the weight of the silage there is sufficient to insure thorough packing. Silos that are deep and of large diameter require less tramping than those of smaller dimensions.

The problem right now to many new silo owners is the one of how to cut the corn and the securing of an ensilage cutter. Corn cutters that cut and bind the corn in bundles is being used but all farmers can not afford to buy them. This part of the work however, can be done in the old fashioned way of cutting and hauling corn. It takes more time but one must consider his time, his capital and amount of work to do and all before he invest in an expensive machine.

The work of filling the silo after the corn is cut and delivered at the silo is a what will bother most farmers.

Unless one has a small, light engine on the farm, I wouldn't buy a cutter with a capacity of less than twenty tons an hour. We have always felt that it was cheaper to hire the power. We pay $10 a day for 25-horse power engine and a man to run it; with such power available the problem is to keep the corn to the cutter.

A complete outfit with us consists of a machine man at cutter, extra man to help unload, four teamsters when the corn is close and more in the proportion to the distance, four men in the field to put corn on the wagons, one binder and team with extra good man in charge, one man to cut out rows and off ends for the binder, and a general manager who is expected to look after the silo. This silo man is the last place to be filled. I am sure there is more labor wasted in silo tramping than in any other part of the work; green corn packs with practically no tramping at all. A man, by tramping, accomplishes about as much as he would in tramping sand. All we wish is to keep the silage reasonably level. If a man is in the silo every hour, levels it off, and looks after the doors, it is good enough for us.

The important thing is to see that the silage is packed down so as to exclude all the air.

When one has his own power, I believe it pays to use one of the loading devices that are attached to the binder, and elevate the corn on the wagon. We have never felt that they were practical for us, for the reason that if anything went wrong with the binder or elevator for a moment the entire work must stop; and also if a large machine is run to capacity one bidner has to work overtime to keep ahead. Here again we have been so situated that we could get the help. However, these elevators do work, and are splendid labor savers under proper conditions.

If I had only one silo I would not put a roof on, for the reason that when filling, a temporary form can be built around the top of the silo and filled three or four feet higher. Thus you have a silo full of settled silage. However, when a silo is left for summer feeding, there is considerable waste if the top is not protected from excessive water and sun. When finishing a silo we try to leave it for a day or two, but not more than four, as in about four days the top will commence to spoil. By the third day it is considerably setled and the entire mass is hot and soft.

In refilling we put in one man or two, if possible, for now the entire lower part is hot and tramping helps to drive out the air. Fill as full as possible and level off. Care is taken in this last filling to keep the silage well tramped around the outside. We usually scatter three or four inches of oats chaff over the top, tramp thoroughly and sow a half bushel of oats to the silo. Each morning for four or five days the silo is thoroughly tramped. If the corn is rather ripe we put considerable water on top to help drive out the air.

As suggested we have found out that to accomplish the best results we can work as outlined above. All farmers may not be situated as we are and they will have to work out some way to keep all busy. A enough men to make a "team" is the best way. Often neighbors will join together in order to do this.

If a heavy frost comes before you can silo all the corn we believe the thing to do then is to start the binder at once and drive hard unless it gets dry enough to loosen the leaves—then only work mornings and late nights. Pile the bundles up in the field in not too large piles and cut as soon as possible. The rain which usually follows a heavy frost will injure the corn for less on the ground than standing, but get in the silo as soon as you can, for if it turns warm the corn will mould in the field.

The cost of filling a silo varies according to local and individual conditions. However, lowering cost depends on two things: Efficient management and efficient loyal help. One sorehead knocker in the cornfield on a wet morning can easily raise your ton cost for the day 5c to 10c.

Corn for the silo can be cut either by hand or by machine. Hand cutting is practiced on farms where the amount of corn to be harvested is so small as to make the expense of purchasing a corn harvester too great to justify its use. Hand cutting is slow and laborious and there are probably few localities now where the purchase of a harvester would not be profitable investment.

There are on the market several makes of silage cutters that will give satisfaction. The capacity of the machine to be purchased is an important consideration which should not be overlooked. Many persons make the mistake of getting a cutter which is too small, thus making the operation of filling the silo very slow and interfering with the continuous employment of the entire force of men. It is better to get a machine large enough so that one will be able to keep busy all the time. The larger cutters are equipped with self-feeders, a labor-saving device which the smaller sizes lack.

The usual length of cutting varies from one-half to 1 inch. The latter is considered a little too long, since pieces of this length will neither pack so closely in the silo nor be so completely consumed when fed as will the shorter lengths. On the other hand, the longer the pieces the more rapidly can the corn be run through the cutter.

SUGAR BEETS

ANSWER TO QUESTIONS ABOUT SILOING BEET TOPS

Replying to your inquiries:

Yes, it is entirely feasible to make the pit for the natural earth silo for beet tops and crowns more than five feet deep, if it is desired. In many parts of the beet growing districts, it is not quite safe to excavate deeper than five feet on account of the water table rising, which would be bad for the silage. Good drainage is imperative. In some places where this method of siloing will be practiced, not more than two feet depth will be safe. In that event, the tops will be stacked above the pit level and then covered with earth. The width and length of the excavation may be determined according to the tonnage that will be available to go into the silo.

Straw:

It is not absolutely necessary to use straw with the tops and crowns.

When straw is spread in the bottom of the pit and also against the sides, next to the earth, the straw will mould and not the tops and crowns; it is more economical to waste the straw than the tops. Then, too, the straw takes up the excess moisture and more nearly equalizes moisture in the silo. Of course, if the tops were allowed to wither and dry badly, perhaps the straw would make the silo too dry. It will pack better and also there will be much better and more uniform fermentation, if the tops and crowns are gathered and put in before they have lain on the field to exceed two days; better if they can be gathered each day. Yes, getting the contents well packed and the air excluded is very important.

Labor:

Labor is a serious problem at that busy time but any one would consider it very extravagant to allow lucern hay to waste fully half of its value through neglect. A ton of good beet top silage is worth two-thirds of a ton of well cured hay, for feeding.

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FARMERS! ATTENTION

Mark Austin.

Again we would like to bring to your attention, the importance of FALL PLOWING, as previously outlined. Fall plowing will mean on the average at least two tons of beets more per acre than Spring plowing, and on alfalfa land or heavy clay soil from three to four tons per acre more. The recent rains have put the land in first-class condition for plowing. Alfalfa lands could be disked and plowed now and then replowed just before the weather freezes up in November.

HOME MANUFACTURE OF VINEGAR

By T. H. Abell, Assistant Horticulturist Utah Agricultural College.

The fruit growers of Utah who have more fruit than they can dispose of will find a satisfactory and profitable outlet in the manufacture of vinegar. Poor vinegar is a hard thing to sell, but there is always a market for good vinegar, and anyone should be able to make good vinegar if they carefully follow instructions. Vinegar may be made from many fruits including apples, grapes, prunes and peaches, and may be made from the sound cull fruit as well as the finest specimens. Before going into the details of the process, it might be well to consider the principles involved.

All ripe fruit contains sugar, the amount varying with the kind, variety and ripeness of the fruit and the cultural treatment. The first stage in the process of vinegar making is the changing of the sugar into alcohol by means of a ferment commonly called yeast. When this process is completed another ferment is introduced which changes the alcohol into acetic acid, the important constituent of vinegar. Both of these fermentations occur only in the presence of plenty of air and will be retarded or stopped if the juice is confined in a tightly closed vessel.

In making apple cider vinegar the first step is the choosing of the fruit. Only ripe apples that are sound and free from worms should be used since they contain the most sugar. Green or overripe fruit not only contains less sugar but is also liable to spoil the flavor of the product. If the apples are dirty, they should be washed. The common cider mill is very suitable for crushing and pressing the fruit. Never add water to the juice or water the pomace and re-press, as such a practice is liable to reduce the sugar content to such a low percent that the final acid content will be below the standard set by law. If possible, let the juice stand two or three days in open vessels to allow the sediment to settle out.

Next pour the juice into thoroughly cleaned barrels which have been washed with boiling water. Do not pour fresh cider into old dirty silmy vinegar barrels and expect good results. The barrels should be filled only about two-thirds or three-fourths full to give more surface for the yeast to act upon and to allow plenty of aeration. This is further accomplished by leaving out the bung and filling the hole with a loose cotton plug. This allows passage of the air but excludes dirt and flies. To start the alcoholic fermentation dissolve some fresh compressed yeast in water and add to the juice at the rate of one cake to each five gallons. The barrel should be stored preferably at a temperature of 65 degrees to 75 degrees Fahrenheit. If kept warmer there will be a loss of alchool by evaporation. If put in a cool cellar the feremntation will proceed but at a much slower rate than if set on the sunny side of a building.

When the juice ceases to bubble, the sugar has all been changed to alcohol and the product is "hard cider." The clear liquid should be immediately drawn off into another clean and sterile barrel, filling this also only about two-thirds full. To this add about a gallon of good vinegar, or place a little "mother" on the surface. "Mother" is the thin white scum found on the surface of good vinegar, not the green slime found in old vinegar, and is composed of organisms which change the alcohol into acetic acid or vinegar. This change also takes place most rapidly at a temperature of 65 degrees to 75 degrees. There should be plenty of air admitted through the loose cotton plug. When the alcohol has all changed to acid, which takes from three to eighteen months, the vinegar should be drawn off into a clean barrel; if there is enough vinegar, completely fill the barrel and stopper tightly. This prevents the deterioration of the vinegar. If there is any doubt as to when the alcohol has been changed to acid send a sample of the vinegar to the Department of Horticulture, Utah Agricultural College, Logan, Utah, where it will be tested free of charge.

The same principles and similar methods apply to making vinegar from other fruits. A method used for prunes or peaches is to crush the fruit and place it in a vessel with a false bottom made of burlap so arranged that the juice drips through the burlap onto the real bottom and is then drained off into a barrel or tub below. The yeast is mixed with the crushed mass which it ferments, freeing the juice which drains out below. The fermenting juice is caught in the barrel and treated as outlined for cider vinegar. Or the fruit may be halved, pited, and pressed the same as apples.

Grape vinegar is made by a process similar to that for apple, but requires more care and attention. Anyone wishing further information on this subject may secure it by writing the Department of Horticulture, Agricultural College, Logan, Utah.

Vinegar making is prohibited by law except by permission, which may be secured from the Prohibition Bureau of the Attorney General's Office, Salt Lake City, Utah.

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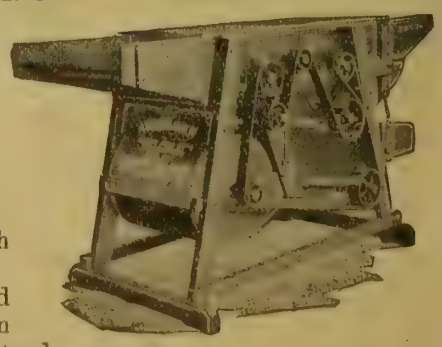

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VOLUME XIV. LEHI, UTAH, SATURDAY, SEPTEMBER 29, 1917 No. 9

About The Price of Wheat

Written for the Utah Farmer.

After considerable discussion and many telegram it now seems as if the price for wheat has been determined for Utah-Idaho and the western states. The price of No. 1 wheat at Chicago has not been changed but a small adjustment made for the extreme western farmer, making a terminal point at San Franciso and Los Angeles. The prices fixed do not apply to seed wheat. The price is fixed and the producer should know that price. The cost for handling is regulated by the government and the grower will not sell at a figure which will allow the buyer an excessive profit.

Probably most wheat will go to market through the usual channels and local prices will be adjusted according to the cost of getting it into the ultimate buyer's hands. By argreement with a large proportion of the millers of the country the profit on flour is to be 25 cents per barrel, and the profit on mill feed is to be 50 cents per ton, which is a good deal less than usual. With so many millers working on these margins by agreement it is expected that the others will do so by force of circumstances.

How to Determine Price.

There is very little if any, of No. 1 Northern hard spring wheat in this territory. It is estimated that 75 to 90 per cent will grade No. 2 and No. 3. No. 2 Hard brings at Chicago $.2.17 at Kansas City $2.15. No. 3 Hard $2.14 at Chicago, No. 4 Hard $2.10 at Chicago.

No. 2 white soft $2.15 at Chicago No. 3 white soft $2.12, No. 4 white soft $2.08 and so on down the list. In the mixed grades if white predominates the price is 4 cents below white soft, if red predominates the price is 4 cents below hard red prices.

The rates on wheat follow: Salt Lake to Los Angeles, 21 cents per bushel or 35 cents per cwt. Salt Lake to San Francisco, 21 cents per bushel or 35 cents per cwt. Boise, Idaho, to Los Angeles, 30 cents per bushel or 50 cents per cwt. Boist Idaho, to San Francisco, same. Sale Lake to Chicago 50 cents per cwt. or 30 cents a bushel.

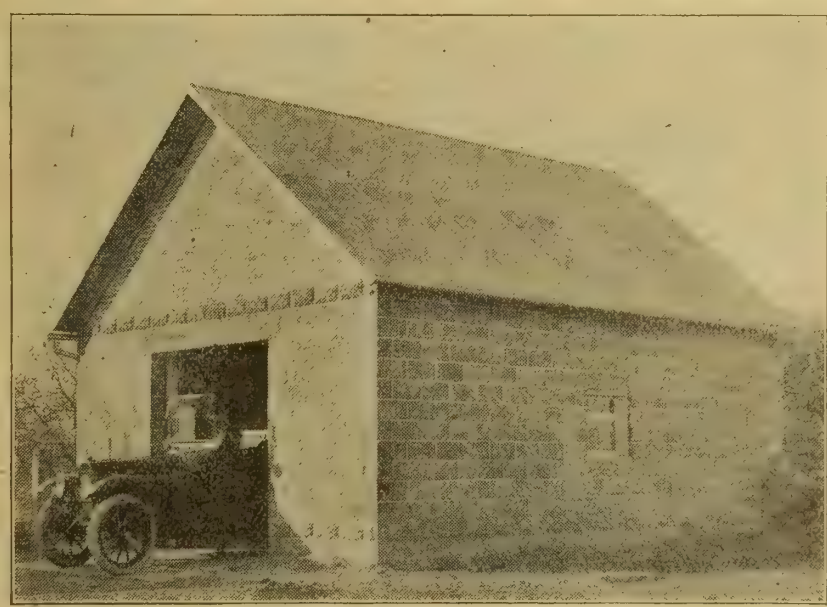
May Store Wheat.

Under certain conditions wheat may be stored. Permission has been granted so that the home supply of wheat will not be shipped out. There was a chance of wheat having to be shipped back next year before harvest for local consumption.

The new arrangement will benefit both farmers and millers. Mr. W. W. Armstrong federal food commissioner for Utah, and now in Washington and sent home the following telegram which gives in details the new arrangement for the Western States:

I have pleasure in reporting the following arrangements completed with regard to Utah and Southern Idaho for the protection of millers located at points in sections where the home supply of wheat is only sufficient for their home needs or with a small surplus. It is settled that on a suitable statement from the mills of their needs and the reasons for requiring modification to them license regulations will be modified in each case to permit such mills to occumulate any necessary milling supply and to store wheat for this purpose. Blanks showing the details have been sent out generally to all millers and all the agents of the grain corporations are supplied with them which will be furnished promptly on application and immediately acted on by the general office. Further for the protection of milling reserves in sections which might be dangerously depleted by a crop movement we are planning the above. Arrangements will be extended by the grain corporation entering into contracts with operating elevators in those sections by which the corporation guarantees the value of the wheat and receives in turn the right to order the wheat retained in the elevators on the payment of storage insurance and interest by the grain corporation at the rate of one fifteenth cent per bushel per day which will show profitable use to such an elevator. The grain corporation stipulates to have the right to direct the shipment of that grain and will use this right to direct it to those mills that need supplies later. Such districts as Utah and Colorado and Eastern Idaho will be investigated immediately as to whether the current of wheat now flowing in should be allowed to leave the section at all and as to how much, if any, should go. The Food Administration has also devised a form of permit for the creation of seed stock by a modification of the creation of seed stocks by a modification of the storage regulations so as to encourage the retention of seed in the sections where it is to be used. The Food Administration entirely agrees the grain control should be used to preserve milling stocks in those districts where they will afterwards be needed for future consumption with as little transportation burden as possible and the assurance that the wheat can always be sold to the grain corporation at the price stated, should encourage the local bankers to accept such credits freely and there will be no difficulty in any event of rediscounting such paper at the Federal Reserve Bank, thus enlarging local credit facilities. With a view to ameliorating the situation arising from the rigid action of the new department of Agriculture grading Act the food Admistration is undertaking to buy all grades below number three on sample until further notice. This should greatly assist the farmers who have grain at no 4 or lower grades. Arrangements have been made for overseas handling of wheat permitting a new base price being established at San Francisco and Los Angeles of $2.10 number one northern and for certain points in Utah and Southern Idaho this will be found a more advantageous outlet than Omaha and Chicago. The government guarantees of $2.00 a bushel at principal interior

(Continued on page 15)



A fireproof garage built of concrete.

America's Responsibility

Europe is short of food, due to the diversion of millions of men from production to war, to the occupation of land by the armies, to the isolation of markets by belligerent lines. Always dependent upon imports for a large portion of its food for men and animals and for fertilizers, the submarine destruction of shipping has limited Europe in her imports of fodder and fertilizers until many animals have necessarily been slaughtered and the soil reduced in productivity. Furthermore, shipping must now be devoted to the most concentrated foods and by getting these from the nearest market —North America. All of these conditions will continue to cumulate until the war is over.

The supplies in the world's larder for the next twelve months are now known. They are too short to support our allies unless every man, woman and child enters National service to support the Food Administration.

France, England, Ireland, Italy, and Belgium in peace time import 40 per cent of their wheat. Owing to the reduction in harvest they must during the next twelve months import 60 per cent. In peace times we furnish 8.2 per cent of their breadstuffs; Canada furnishes 11.6 per cent and they draw from other markets 20.2 per cent. This year, the fine exertion of Canada will furnish about 15 per cent, we must furnish 20 per cent and we must reserve 2 per cent for neutrals from whom we draw vital supplies. This leaves 25 per cent which the allies must eke out by use of other cereals in their war bread, obtain from other markets or further reduce consumption. Our 22 per cent means 220,000,000 bushels of wheat against our surplus in this year of short crops of only 88,000,000, if we eat normally. If we reduce our wheat flour consumption from 5 pounds per week per person to 4 pounds, we shall make available our quota.

The food animals among the Allies have decreased since the war began by about 33,000,000 head, thus their meat, fat, milk, and butter have decreased in the face of increased need. They normally import 30 per cent of their fodder-grains, corn, oats, barley, and rye, Owing to the reduction in their harvest they must, this next twelve months, import 56 per cent if they receive the normal amount. In peace times we furnish them under 2 per cent, and Canada under 1 per cent. This year we must alone furnish them with at least 40 per cent, as Canada produces little but wheat. Our quota means 500,000,000 bushels and we can do it if our great corn and oats crops mature.

They need the cereals other than wheat, not only to supply feed for animals but partly to substitute for wheat in the bread. They can, however, only absorb a certain amount of corn for human food, for, except in Italy, they have never eaten corn bread, and have no adequate mills, and, besides, household baking is a lost art and corn bread can not be distributed from the bakeries. Therefore, they must have wheat as the basis for their war loaf.

France and Italy formerly produced their own sugar. They can not do so now. England imported largely from Germany and Russia. Therefore, our allies must now come to the West Indies for over 2,000,000 tons if they are to obtain a normal amount. They thus draw from our own source of supply and we must divide with them.

Of potatoes and other vegetables we have a superabundance, which we can not ship, because they require from 4 to 10 times the tonnage of more concentrated foods. We have abundant fish, sea foods, and poultry.

Therefore, we have two clear duties: First, to substitute other commodities we have in abundance for those that we can ship; second, to eliminate every waste. If in this way we can reduce our average consumption per person 1 pound of wheat flour, 2 ounces of fat, 7 ounces of sugar and 7 ounces of meat per week, and if we use our milk and butter carefully and without waste, we can maintain our own people on a full diet and can still supply the deficiency in our allies' food, for when these apparently small individual savings are multiplied by 100,000,000 every week they assume gigantic proportions and offer a complete solution of our problem.

We must remember that every flag that flies against Germany is by proxy the American flag, that those fighting in our defense can not be maintained over this winter without the minimum food necessary for their armies and ours, and for their men, women, and children at home. The provision of these needs can be accomplished only by the resolute personal service of every man, woman, and child in this country.

DAIRYING

MARKETING THE DAIRY PRODUCTS FROM THE FARMERS' STANDPOINT

Sterling E. Price.

Since the county creamery has come into existence, dairying has taken rapid strides. They have furnished a fair market, but here again we find disadvantages. The skim milk problem is not so serious for while the skim milk returned is not as valuable as farm separated milk, it furnishes fair hog food. The big disadvantage lie in the low price paid for the milk, the unfair tests and weights and the competition a country creamery meets with a large concern. The competition is solely the farmer's fault. Several field county creameries were visited and in every case the failure was due to farmers patronizing a big concern because a temporary price of a few cents higher than the local price was offered. Four counties in Utah were visited where in but two small creameries were in operation independent of the creamery corporation, and the price of milk ranged from 6 cents a gallon to 14 cents a gallon and from 10 cents to 32 cents a pound for butter fat. In a county joining one of these where the farmers have gotten together the price of butter fat ranged from 30 cents a pound to 42 cents a pound with an average of 38 cents a pound. This, without doubt, shows thoughtless, selfish management on the part of the farmer.

A coroporation creamery was visited in Grand Junction and they gave the report that no creameries were in operation between there and Salt Lake City, Utah. They had put out of business, or prevented from going into business, a district of 350 miles radius and have established shipping stations throughout this territory paying prices just enough to keep the dairyman in the business.

Idaho—"Complaints have repeatedly been made to this department by small creameries situated throughout the state that larger concerns were invading their territory with unwarrented prices for butter fat, in some instances considerably above the market price, and that because of this they were losing their customers and in consequence would either have to close down their business or sell out."

Other minor items of disadvantage in creamery marketing are the careless methods of handling and producing milk which the farmer falls into, and he has to accept the weights, tests and objection of the creamery man.

These methods outlined seem to the farmer the only feasible and economical methods of marketing his dairy products. There are many other methods which a few business-like farmers are following and by which they are becoming wealthy.

First and most profitable among these is the private market, i. e. supplying a catering house, a hotel, restruant, rich families, saloon and such with an A grade product. This is one of the most pleasant and easiest and most economical ways of marketing. Several house wives report their butter contracted for 25, 30 and 35 cents a pound the year round, Milk 5 cents a quart delivered in bulk, buttermilk from 5 to 20 cent a gallon, and cream from 10 to 30 cents a pint. Others gave cream from 70 cents to $1.00 a gallon for cream testing from 18 to 22 per cent fat, many were getting 2[illegible] cents a gallon for milk in bulk. One reported 50 cents a gallon for milk to the Baltimore Hotel in K. C. In many cases such markets are not thought of by the ordinary farmer. If he realized that by paying from 30 cents to 50 cents express on 20 per cent of butter he could in many places get 10 to 15 cents a pound more for it or 10 to 20 cents more a gallon for his cream, surely he would take advantage.

Where milk testing 3.5 per cent fat is sold at the price per gallon given in the table, creams of Different per cents should sell at the price also given below:

Price per gal.	20% cream	25% cream	30% cream	B. fat @ lb.	butter @ lb.
$ .16	$ .74	$ .90	$1.00	$ .46	$ .35
.18	.84	1.04	1.26	.53	.41
.20	.96	1.08	1.43	.60	.47

A second way of profitable marketing is making special products such as producing milk for babies. This is more expensive to produce but the price increases corrospondingly, Ben R. Eldridge of S. L. C. Utah reports the sale of such milk at 12.5 cents a quart but in educating the people to the value of his product the cost was so great that he thought it more profitable to produce grade A milk at 10c a quart. Many other places, especially larger cities report a great profit from this special product. Other special products which bring great profits are selling whipping cream and cottage cheese.

Mrs. B. from near Portland Oregon reports the following form such:

Mrs. B. owns a farm of ten acres twelve miles from market. Her seven Jersey cows produce an average of sixteen gallons of 4.5 per cent milk daily. The following is a statement for an average month:

Receipts.

648 pounds cottage cheese (12% fat) at 15c	$97.20
390 pints whipping cream (34% fat) at 20c	78.00
Total receipts for milk produce	$175.20

Expenses.

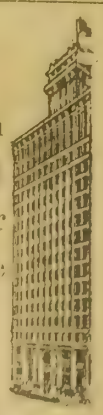
Monthly cost of feed, labor, etc.	$52.50
Monthly cost of marketing	20.00
Total expenses for the month	$72.50

Mrs. B's profit for one month $102.70

The demand for sweet cream from dealers who supply this commodity in bottles to consumers and for ice cream manufacturers is rapidly increasing. The supply is very hard to get and frequently has to be shipped long distances. The prices paid for this product usually ranges from 3 cents to 12 cents higher for butter fat per pound than can be obtained from its sale in the form of butter.

Report from creameries marketing ice cream show that some of these are marketing a large percentage of their product in this way. The average cost of marketing a gallon of ice cream is 45 cents and the same report shows the average wholesale selling price to be 87 cents leaving a margin of 42 cents a gallon. 100 pounds of 18 per cent cream is equal to 12 gallon which with a 66 per cent over run will produce 20 gallons of ice cream and if sold for 87 cents a gallon will amount to $17.40. Allowing that the sugar, flavoring, etc cost $1.40 there is left $16.00 for 18 pounds of fat used. On this basis the butterfat sells with a 21 per cent overrun would produce 21.78 pounds of butter and if sold at 32 cents a pound (the N. Y. average price for 1915) would amount to $6.97 or 38.5 centsa pound for the fat. A comparison of these items shows a difference of 50.3 cents a pound for butter fat. This is just an average instance. Many large plants report even greater profits than this. An ice cream plant of Chicago reports an overrun of 100 per cent with a trade that averages $1.25 a gallon and a wholesale trade of 80 cents a gallon with the cost of production at 40 cents a gallon. A plant at Excelsior Springs Co. reports a wholesale price of 75 cents a gallon, 85 per cent overrun and cost of production 45 cents. The Bauer Ice Cream Co. of Denver make an 18 per cent ice cream for 70 cents a gallon and retail at $1.00 a gallon in quantity or $1.25 to $2.00 a gallon in small lots. Most of these ice cream companies are forced to buy their cream from creameries and large milk plants because the farmer falls to furnish a standard product and a reliable amount. In every case investigated the ice cream manufacturer bought his cream from a creamery, the creamery making a net profit of from 5 cents to 15 cents a gallon. If the farmer or group of 3 or 4 farmers would co-operate and furnish a concern with a A grade, standard product why couldn't

You will find a cordial, helpful spirit at this bank, whether your account be large or small.



Resources over $9,000,000.

Walker Brothers Bankers

SALT LAKE CITY

Why Do You Strive for Quality Products?

Why Not Raise Ordinary Livestock, Ordinary Grain or Ordinary Fruit?

It costs extra money to start and maintain a herd of blooded cattle, hogs or sheep.

It takes extra time and care to select quality seed corn as a basis for a quality crop.

It takes extra money, time and care to start and keep up a quality fruit orchard.

You could do away with this extra expense by being satisfied with just ordinary products. Why do you seek for quality?

Here is the reason: You pin your faith to quality because you know that the extra expense entailed by the effort for quality is more than offset by the extra profits that quality products return.

Quality is profitable in what you raise to sell. It is just as profitable in what you buy to use.

We have at your service a stock of highest quality farm implements. There is nothing of the ordinary in these implements. Their quality has been recognized for years throughout the world.

If you were fully satisfied with raising ordinary products, we might deal in ordinary implements. Quality in what we had to sell would not attract you. But knowing that you appreciate the worth of quality, we are here to serve you with quality goods. You will find the quality of our stock and the quality of our service both profitaole to you. And remember, you can see before you buy.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Zion Canyon

"UTAH'S WONDERLAND"

Reached Via

THE SALT LAKE ROUTE

SALT LAKE ROUTE

"Wylie Way"

From Lund Station—

Thence 102 Miles in Luxurious Autos to

Wylie Camp

A vacation spent in Zion Canyon will be a pleasure long remembered.

For detailed information as to rates and reservations, write or call on:

WM. WARNER, A. G. P. A., Salt Lake Route,
10 East Third South, Salt Lake City.

they furnishthe ice cream manufacturer and save the middleman's profit. They not only save the money profit but it leaves the skim milk for feed on the farm and thereby saves 80 per cent of the fertility contained in the feed. This is the average dairy amounts to a very amount.

Cooperative Creameries

Wm. Olsen.

Much has been said in farm papers about co-operative creameries. They have been very successful in some communities, while at other places they have failed. The reason of these failures has been the lack of support by the people who started out to work with their neighbors in a co-operative way.

It may be interesting and of value to some of our communities to have a detail financial statement of just how one of these co-operative creameries is doing.

The Monroe Creamery Company, has been very successful with their creamery. Not only have they made money, but they have produced a good product and have paid good dividends to the stock-holders and milk producers. In order to make it co-operative in every sense of the word, those who have furnished the equipment for the creamery are paid a good dividend, usually about twenty per cent. The remainder of the profits are divided among the milk producers, according to the amount of milk delivered at the creamery during the year.

A careful study of these figures will show that there is money in cheese making. The report of the Monroe Creamery Company for the year ending July 1st is given below:

FINANCIAL REPORT OF MONROE CREAMERY CO. JULY 1st, 1917.

Receipts:		
Cash on hand July 1st, 1916	$ 1,821.44	
Cash received for cheese sold	28,529.21	
Cash received for stock sold	245.00	
	$30,595.65	
Less cash on hand July 1, 1917	2,973.01	$27,622.64
Disbursements:		
Paid out for Milk	$19,948.79	
Wilford Hansen Salary	870.00	
Hansey Hansen	440.00	
Dan Larsen	600.00	
Jacob Magleby	480.00	
Directors	73.00	
New Building & Improvements	1,363.15	
Advertising	17.42	
Office Expenses and Telephone	102.74	
Cheese Boxes	327.62	
Fixtures	452.81	
Supplies	854.12	
Repairs	40.69	
Expenses at Factory, Freight, etc.	419.35	
Coal	470.47	
Taxes	85.12	
Feeding Company Team	200.85	
Stock Dividend	224.67	
Dividend on Milk delivered	651.84	$27,622.64
Resources:		
Grounds, Building, and Machinery	$ 4,419.64	
Cheese on hand July 1, 1917	1,397.60	
Accounts receivable	2,610.32	
Cash on hand July 1, 1917	2,973.01	$11,400.57
Liabilities:		
Capital Stock	$ 2,446.75	
Accounts we owe	402.31	
Salaries due	205.06	
Owing for milk	930.64	
Working Capital	7,415.81	11,400.56

INSPECT THE SILO BEFORE FILLING

S. T. Simpson.

Unnecessary delay and expense will be avoided if the silo and the machinery used in making silage are carefully inspected before filling is started. The silo should be examined for openings in the walls where air might enter and spoil the stored crop, and for rough places which might prevent proper settling of the corn. The hoops on wooden stave silos be tightened sufficiently to close all cracks, but they should not be tight enough to buckle the staves. The staves will absorb some moisture from the silage. Consequently the hoops should be released somewhat, a few days after the silo has been filled, to prevent the swelling staves from buckling or breaking the hoops. The walls of masonry silos should be inspected for cracks, sand pockets and rough places. Some owners give the inside surface a thin coating of rich cement with a whitewash brush. This is not necessary unless the surface of the wall has become roughened. Metal silos frequently need fresh applications of especially prepared paints to prevent corroding.

A careful inspection of the cutter, engine and corn binder previous to starting work will sometimes save unnecessary stops and repair bills. Unnecessary expense in filling may be avoided by putting all machinery in good running order, and by providing enough teams and wagons to keep the cuter running steadily. Ten or twelve men idle at one time rapidly increase the cost of the operation.

HOLSTEIN CATTLE
Purebred Registered
Send for Free Illustrated Booklets. The Holstein-Friesian, Association of America, Box 279, Brattleboro, Vt.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

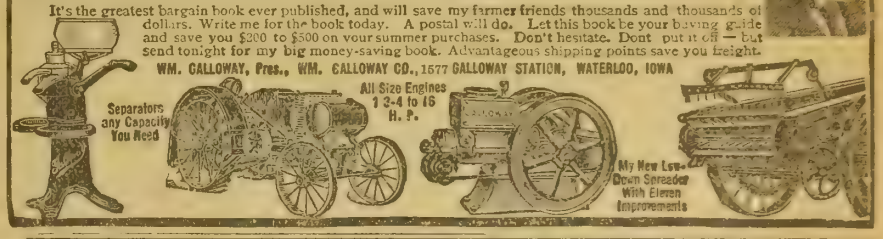
Get My New Patriotic Prices!
On Spreaders — Tractors — Engines — Separators

Find out and satisfy yourself how much you can save by getting your farm implements direct from Galloway—the maker. This direct dealing is actually buying at wholesale, and even less, and saves you 25% to 50% on everything you need on the farm —Spreaders, Tractors, Engines, Separators, Wagons, Implements, Vehicles. I'll tell you why you can save by direct buying in my big, free book. I'll also tell you where the extra money goes—the money you save by dealing direct with the manufacturer.

Write for My Free Book That Keeps the Prices Down

It's the greatest bargain book ever published, and will save my farmer friends thousands and thousands of dollars. Write me for the book today. A postal will do. Let this book be your buying guide and save you $200 to $500 on your summer purchases. Don't hesitate. Dont put it off — but send tonight for my big money-saving book. Advantageous shipping points save you freight.

WM. GALLOWAY, Pres., WM. GALLOWAY CO., 1577 GALLOWAY STATION, WATERLOO, IOWA



MANY NEW FEATURES AT THE STATE FAIR

State Fair and Fall Conference at Salt Lake City Sept. 29th to Oct. 7th, 1917.

Excursion rates on Salt Lake Route. For above occasion the Salt Lake Route will sell excursion tickets from all Utah stations as follows: Nephi-Tintic district and all points East Sept. 29th to Oct. 7th. Good returning until Oct. 12th. From all other points Sept. 28th to Oct. 6th. Good returning until Oct. 15th. Extra equipment on all trains. adv.

HE HAD A USE FOR IT

A man was asked to lend a rope to a neighbor. His reply was that he was in need of the rope just then.

"Shall you need it a long time?" asked the neighbor.

"I think I shall," replied the owner "as I am going to tie up some sand with it."

"Tie up sand!" exclaimed the would-be borrower. "I do not see how you can do that!"

"Oh, you can do almost anything with a rope when you do not want to lend it," was the reply.

TOO FAST FOR HIM

A Georgian from up in the mountains came to town on his yearly trip with a wagon load of corn, sweet potatoes and other produce to exchange for groceries. As he approached the city limits he saw a sign: "Speed Limit 15 Miles an Hour."

Poking his oxen frantically with the stick he muttered: "Oh, my! I don't believe we can make it."

To think failure is to be a failure. But to think success is to be successful.

UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

Entered as second class matter in the postoffice at Lehi, Utah.
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All mail should be addressed to the Utah Farmer, Lehi, Utah, Kirkham Building.
Our office at Salt Lake City, Utah, is in the McIntyre Building.

Members of the

New York Office, 200 Fifth Avenue, S. E. Leith, Mgr.
Chicago Office, Steger Bldg., Tom D. Costello, Mgr.
Minneapolis, Minn., Palace Bldg., R. R. Ring, Mgr.
St. Louis, Globe-Democrat Bldg., C. A. Cour, Mgr.

Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the addess cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

If the farmer is converted that he will realize a fair rate for his labor, we will be able to produce food to feed ourselves and help the world.

Seventy out of every one thousand who go into the trenches lose their lives. A small number when you think they are in the fighting business.

Women are doing their "bit" to help in the harvest of our crops. Women will be employed to do the weighing of beets in some districts, in order to allow the men to do the harvesting.

Did you read the article last week about the use of corn in the home. Why not try some home ground corn meal. Save the wheat for export and use corn and other kinds of cereals for human food.

Potato digging time will soon be here. Some have already harvested a part of their crop. Plan to pit or store part of your crop. The railroads will not be able to handle all the freight at harvest time.

It is a rush job now with the man who is building his silo. In some parts of the State is it getting late for the work of filling the silos. Many new silos will be filled for the first time this year, so we suggest, do it the right way, do not be affraid to ask questi ns of the man who has had some experience.

From present indications it looks like dairy products are going to be extremely high. Cache Valley condensaries are paying sixty-two cents a pound for butter fat. They are supplying the Government with condensed milk. The cow that will produce a reasonable amount of butter fat will be a profitable investment on any farm.

We are very careful about the advertisements that appear in our paper. You can safely deal with any of them. It is important, however, that you mention the Utah Farmer when you answer any of the advs. When you buy from the local dealer tell them you saw the advertisement in the Utah Farmer. This will help us and help you.

The high price of alfalfa hay emphasize the importance of trying out other kinds of roughage feeds. Where the hay crop is short, straw, if fed under certain conditions, will help out very materially. Tons of feed that could be profitably used goes to waste every year. If this shortage will teach us the lesson of using other kinds of feed and allow none to go to waste, it will be a benefit in the long run.

Government farms surveys show that the farmer who is keeping livestock is the one who is making the most money. Another good reason why we should have more livestock on our farms. The man who sold his breeding stock either hogs, sheep or cattle is now wishing that he could buy it back at any where near the same price he sold it for. The thing to do is to secure some livestock for your farm and keep in the game. You will make no money by buying in and selling out when extreme market conditions occur.

CAP THE FLOWING WELLS

If the land owners who have flowing wells will not cap them and conserve the water supply for their own good, the State should do something that will prevent the wasting of so much water. This underground supply of water will be drained and what then? Much of this water is now running to waste and more than that, it is doing serious damage in some places. The land will become water logged and interfer with its productiveness. The proper thing to do is cap these wells and allow only such water to run that can be profitablly used for producing crops, for livestock or the home.

FIGHTING THE WEEDS

The weeds seem to look out for themselves in the way of producing a crop of seed, enough to produce a good crop of weeds next year.

They grow on the ditch bank, in the corners, along the fences and the winds and irrigation water helps them out by scattering the seed for the next year's crop.

Burning them is possible in some cases, not always. Sheep will eat them. Cutting and burning them is often done on some farms. Something should be done to destroy them and the seed to prevent a crop next year.

We would like to hear from some of our readers on how they fight the weeds.

A FARM WORK SHOP

On several of the farms visited by the farmer excursionists this year, they were shown up-to-date work shops. The owners told how they saved time and money by being able to make repairs right on the farm.

With a good work shop many of the repair bills could be avoided by making repairs of worn parts and replacing defective parts during the season when farm work is not so rushed.

The equipment of a work shop will depend upon the kind of work that is done on a farm. Start out on a small scale and practical experience will tell you what tools to buy. Proper arrangement is important, a place for every tool and keep it there when not in use.

A little money spent for the right kind of tools is a good investment on any farm.

STORE SOME VEGETABLES FOR WINTER

If you want to help reduce the cost of your food bills, store some vegetables for winter use. When properly stored, vegetables can be used for the table and it will take the place of more expensive foods and often be more acceptable. We have had many articles in the Utah Farmer on this subject and anyone should be able to store enough vegetables on the farm for family use and often a few to market during the winter.

Proper ventilation, not too cold or too warm, with a certain amount of moisture is necessary to successfully store vegetables. Different kinds of vegetables need different kinds of conditions for storing, what will do for one would not do for another, yet it is worth while to do this in order that we may have vegetables for winter use.

FALL PLOWING

When a promotor comes along and offers to guarantee a good return for the money invested, many people fall for the scheme.

The profits that will come from fall plowing is known to practically every farmer. Sugar experts estimate that fall plowing will mean on an average of from one to two tons per acre more than if the land is prepared in the spring.

Do all the fall plowing you can, turn the soil up so that the rain, snow and frost can work on it during the winter.

PRODUCING MILK

For a time this spring it looked as if every one wanted to go out of the dairy business. Feed was so awfully high and price of milk at that time had not been adjusted to meet the increased costs. Now, it seems that many of our farmers want to get into the milk producing business. The experience of last winter with hay at 35 to 40 dollars a ton has started something. Many of the milk producers have been studying out a way of feeding to reduce the cost and increase the value for producing more milk. Some have been so successful they now want to go into the business.

It takes an extreme condition sometimes to teach us a lesson. There is money in producing milk if you will make a careful study of the business.

SILO SOME BEET TOPS

Try out the idea of siloing a few beet tops. It will help save the hay and reduce the cost of feeding.

We do not recommend the siloing of beet tops in the concrete or wood silos but in a pit (silo) a few feet deep and as wide and long as you have beet tops to store.

The past three or four issues of the Utah Farmer has explained in detail how to do this. With alfalfa hay selling at 10 to 15 dollars a ton it will pay to silo beet tops.

It costs so little, only the time of digging the silos, to store these beet tops that nearly every beet grower can afford to try out the proposition. It means much to the farmer because feed is going higher all the time.

HILL SELECTION OF POTATOES

Potato digging time will soon be here, and we want to suggest that each one spends a little time selecting some of the best hills of potatoes and dig them by hand, saving them for seed. You may find a number of hills that do not give a satisfactory yield. Discord them and keep only those potatoes that produce a large number of potatoes and that are true to variety.

To do this may seem a little hard because of the scarcity of labor, but it will pay big in next year's crop. A number of experiments have been tried out by farmers with hill selected potatoes planted along side the ordinary kind, and the yield in some instances has been nearly double in the hill selected seed.

The best time to hill select your potatoes is before you start to dig.

IMPORTANCE OF GOOD SEED

If we did not believe it so strong we would not follow this question up so carefully, the value of good, clean, pure seed. This is the time of the year to select your seed, at harvest time.

It may seem a little over drawn, but one farmer tells us about producing nearly double this year over last and he gives the seed the greater part of the credit. Sure he had a good seed bed and well manured, but think of nearly doubling your production. Select your seed now. It may be a much higher price next spring and you may not be able to get the kind and quality you want.

Our government is establishing standards of grades and the best way to have first grade quality is by selecting the right kind of seed. You can not expect to produce a high grade wheat if you plant a low grade seed.

Secure your seed now, and put it away so that it can not be distroyed by mice, insects or any other way.

PROPER METHODS IN HARVESTING BEANS

Alvin Keger.

Great care must be exercised with navy beans in harvesting, because of their tendency to discolor. Navies should be allowed to get fairly ripe. This can be determined when the seed is plump and hard and the pods will usually be yellow but not yet dry and brittle. At this stage the vines should be cut and piled in small shocks to cure or dry out. Navies are likely to be discolored by rains, light snows or other moisture. Consequently, it is the policy, with beans at a high price, to stack navies, making the bottom of the stack of straw, and topping out with straw, stacking always if thrashing is not feasible as soon as the beans are cured.

With pintos the danger of discoloration is much less, but they run the same danger of loss from shattering if allowed to get too ripe. Consequently, pintos should be harvested when the pods are yellow and the beans are plump and hard. This can be determined by breaking open and examining the pods. If the pods are allowed to get hard and dry, a great many beans will be lost by shattering in handling.

When harvested as directed, the beans will ripen up and cure properly in the shock. When cured they may be thrashed or stacked, although in our dry climate many beans are left in the field for some weeks waiting for the thrasher so as to thrash out of the shock. The risk with pintos in this practice is not so great as with navies, but there is always some risk when the beans are allowed to stay in the field. With beans at a high price, it is usually profitable to stack, except in those cases when the thrasher may be obtained as soon as the beans are mature.

———o———

Mt. Pleasant, Utah.

Utah Farmer:

Gentlemen:—Can you give me any information regarding the harvesting of beans, I have one acre of navy beans, some of the pods are dry now but the majority of them are still green or just turning yellow, is there any danger of the frost damaging them before they all get ripe, and if so do you think I should pull the vines up and let them ripen in the sun. Also what do you think would be the most economical way to harvest and shell a small patch of this kind.

Thanking you in advance for the favor, I remain,

Yours very truly,
J. J. Nichols.

Answered by Dr. F. S. Harris.

Small patches of beans are usually pulled by hand and allowed to stand in the field with the roots up. This enables the pods to mature gradually instead of drying up at once. It is better to pull the beans before all the pods are ripe, otherwise those that were ripe first will shell out on the ground. Frost makes the pods shell out faster than they would otherwise do. If a regular bean thresher is not to be had, you could thresh out by hand. This can be done rather rapidly by the use of the old fashioned flail.

Where large areas of beans are raised they are pulled as well as threshed by machinery.

———o———

SELECT SEED CORN THIS FALL

The first step toward making a big crop of corn next year must be taken this fall. It must be taken in the cornfield by selecting an abundance of good seed. Of all the things which combine to make a big corn crop—a good season, good soil and its proper treatment, and good seed—the quality of the seed is one of the most important. And good seed is one of the factors for making a big crop which is entirely within the control of the farmer. The season may or may not be good; the natural condition of the soil is in some degree dependent upon the character of the season; the proper treatment of the soil both in preparation and in later cultivation is somewhat dependent upon the labor supply; but good seed in abundance can always be had. It is a home-grown product. Very often in the spring farmers buy high priced seed corn; but nearly always they could have got just as good or even better seed from their own fields in the fall, had they been willing to spend a little time and pains in selecting it.

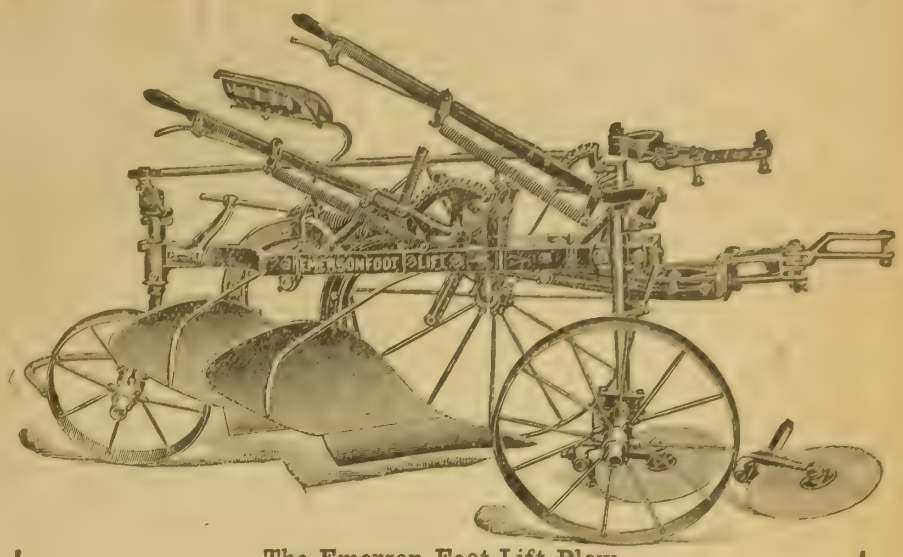
Sometimes seed corn is so scarce in the spring that good seed is hard to find, and the grower is forced to use seed of inferior quality, which reveals itself in a poor stand and a lack of thrift in the young crop. Unless the proper steps are taken this fall, a scarcity of good seed is more than ever likely to occur next spring when the acreage will doubtless be greatly increased for the big war crop and seed will be in great demand all over the country. It is vitally important for farmers to save a large supply of seed this fall—enough for all possible needs. Perhaps no other work, except that of seeding wheat, will pay so well for the time spent as the selection of good seed corn from the field.

Experiments have repeatedly shown that home-grown seed usually is better than seed brought into the locality from another latitude. It has also been shown by experiments and borne out by practical experience that seed selected from the field, if properly dried and stored, always is better than that selected from the crib. The opportunity for good selection is greater in the field. The person who gathers the seed can then compare the individual plants and make his selection from those which yield the most grain. But if he waits to get his seed from the crib he can only select good looking ears, without knowing whether they were borne by high yielding plants or by low yielding plants, by early plants or by late plants. He can get no notion of the previous productiveness of the seed. Crib selection is therefore uncertain to give good results; field seletion is the only sure method. Although many directions for selecting corn in the field are given, they can all be brought together in one good rule: select the ears of plants that yield more grain than surrounding plants grown under the same conditions.

———o———

Care should be taken to dry off the ewes properly after their lambs have been taken away; this is done by milking out the ewes at intervals of two or three days after the separation until the ewes are dry.

Emerson Foot-Lift Plow



The Emerson Foot-Lift Plow

Both levers on the Emerson Foot-Lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the Plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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Better than other Hogs—

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HOME

HOME ECONOMICS ASSOCIATIONS PROGRAM AND SUGGESTIONS

Program.

1. Dairy Products in the Diet
   (a) Ways I can use skim milk
   (b) How to make cottage cheese
   (c) Cottage cheese recipes

2. A discussion as to the benefit of a course in the schools in Mending and Renovating of Clothing, as a means of inculcating habits of economy and assisting the mother in the home.

Attention!

Will the president of each association please send in to the Extension Division a report of the summer's work in conservation to include:

(a) Canning
(b) Drying
(c) Any other work

Storage of Winter Vegetables.

Sand is being found to be one of the most practical materials in which to store vegetables and even the hard fruits. Some of the vegetables which are thus stored are carrots, turnips, beets, radishes, cabbage and potatoes; while among the fruits apples keep particularly well. Matured vegetables can of course be kept with less danger of bacterial action than the young, though many prefer to preserve the young vegetables on account of its palatability. Carrots not smaller than ½ inch and beets not smaller than 2 inches in diameter, and other vegetables of a corresponding size can be kept satisfactorily in sand if a sufficiently low temperature is maintained.

For the use of sand for storage have a large box or bin in a cold cellar. Place a layer of practically dry sand in the bottom. On this place a layer of root vegetables which still have their roots but which have only a small projection of stalk. Place the vegetables so as not to touch or they will deteriorate. Use alternating layers of vegetables and sand, fill the receptacle, covering all with a generous layer of sand.

To can vegetables which can be stored is a waste of bottles and energy. It is often desirable to have a few bottles of vegetables on hand for cases of emergency. The canning of such is best done when some of the bottles are being emptied in late fall when the heat has subsided and the housewife's rush of summer work is over.

Raw vegetables should be used to a greater extent than they are used at present, since the nutrients are to some extent destroyed or wasted in cookery. Raw cabbage is really more easily digested than when cooked. The grated root vegetables such as carrots, turnips, and finely shredded cabbage are excellent served in salads.

The Making of Vinegar.

The best vinegars are from cider or wine although vinegar can be made from molasses or sweetened water. In all cases through fermentation the sugar is converted into alcohol and then into acetic acid. The fermentation occurs from an organism commonly known as the "mother of vinegar" which grows only in the presence of oxygen.

Vinegar can be made by allowing one of the above mentioned liquids to remain in a warm state with oxygen freely entering it until the complete fermentation process occurs. This process takes a long time, the length of time depending upon the amount of air present, etc.

When vinegar is made in quantities the process is hastened by allowing the liquid to pass through a tank filled with shavings and containing some "mother of vinegar" and at the same time air is admitted so as to secure a good supply of oxygen. Vinegar properly made should be clear and not form a deposit or produce any "mother." To prevent these conditions it should be strained and stored in clean jugs which will protect it from the air, for so long as air is excluded fermentation will not go on. If it does get cloudy in spite of the exclusion of air the trouble is that fermentation process has not been allowed to be completed.

If you use a jug in which vinegar has already been stored and in which some "mother of vinegar" still remains, the process of vinegar making will be greatly hastened.

Sour apple sauce, left-over fruit juices, rinsings of molasses or honey pitchers, if poured into the vinegar jug will result in excellent vinegar when left exposed to the air and allowed to ferment sufficiently.

Using Milk and Its By-Products

Excerpts from U. S. D. A. Leaflets.

Cottage Cheese.

Making—

By curdling at a low temperature, not over 75 degrees F.

By pouring hot water through the mass, stirring constantly.

By use of 2 or 3 drops of liquid rennet to a gallon of milk warmed at 80 degrees F. One-eighth of a junket tablet may be substituted for the rennet. The curd is not cut in this case. After the curdling and cutting the temperature is raised to 100 degrees F. for half an hour, and then drained through a cheese cloth sack.

Recipes—

Jelly, nuts, onion, sugar, candied fruits, or dried fruits may be added to the cheese.

Salad.—To one pound of cheese add one and one-half tablespoonfuls of cream, one tablespoon of chopped parsley and salt, place in wet mold lined with greased paper. Serve cut in slices on lettuce. Nuts may be sprinkled through the cheese.

Rolls.—Beans or peas may be combined with the cheese with enough bread crumbs to make the mixture thick enough to form a roll. This will take the place of meat. A pound of cottage cheese gives as much flesh forming food as a pound of meat. A pound of cottage cheese supplies energy equal to eleven ounces of round steak, five and a half of fresh ham, six of loin pork chops, and eight and one-third sirloin steak.

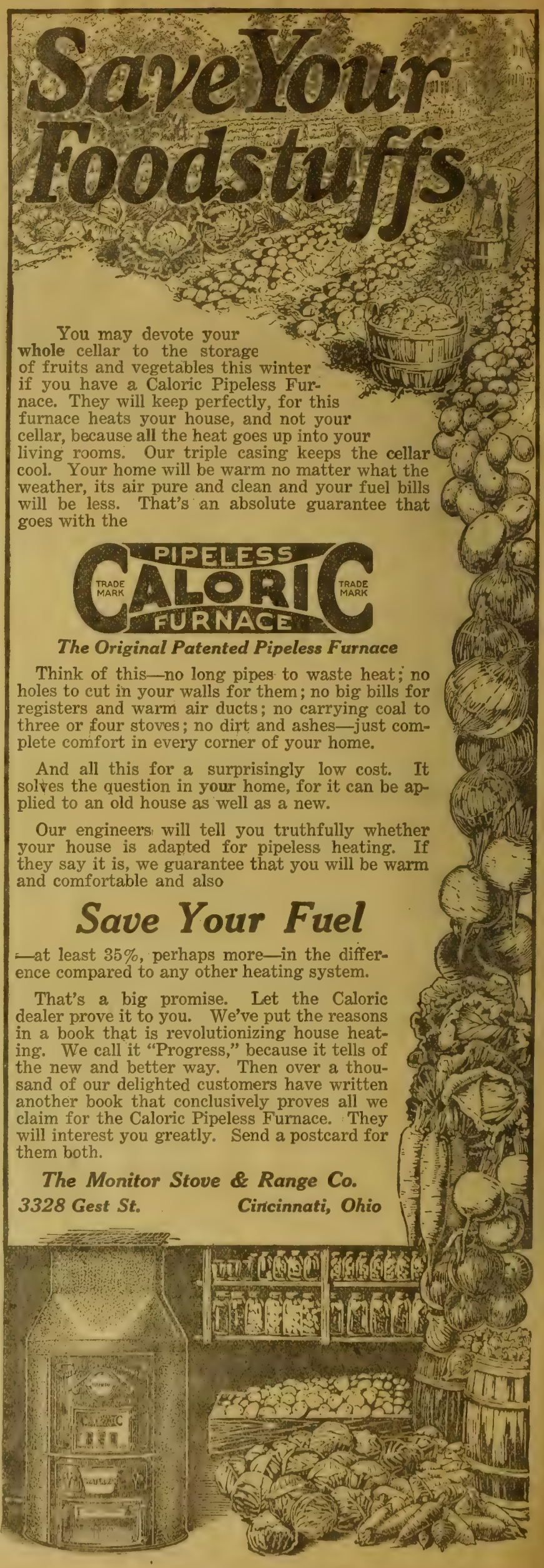
Roast.—Mash a pound of cooked or canned beans, add cheese and crumbs to stiffen. Bake in a moderate oven, basting with fat or water May be served with tomato sauce.

Cheese Sauce.—To one cup of milk add a tablespoon of cottage cheese, 2 tb. of flour, season to taste. Thicken the milk and flour, add cheese, stirring till melted. This sauce may be used in creaming eggs, or toast, and with the addition of a little more cheese may be used on macaroni and rice.

Pimiento and Cottage Cheese Roast.—2 cupfuls of cooked Lima beans, ¼ lb. of cottage cheese, 3 canned pimientos chopped, bread crumbs and salt. Put the first three ingredients through a chopper. Mix thoroughly and add bread crumbs until it is stiff enough to form into a roll. Brown in the oven,

Wonderful Egg Producer

[illegible] poultry raiser can easily double his profits by doubling the egg production of [illegible] discovered that revitalizes the flock and [illegible] time. The tonic is called "More Eggs." Give your hens a [illegible] of "More Eggs" and you [illegible] and connected with results. A dollar's worth of "More Eggs" will [illegible] write E. J. Reefer, poultry expert, 4286 Reefer Bldg., Kansas City, Mo., who will [illegible] of "More [illegible] confident is Mr. Reefer of the results that a [illegible] costs you nothing. Send a dollar today [illegible] a fortune out of poultry.



basting occasionally with butter or other fat, and water.

Cottage Cheese and Nut Roast.—1 cupful of cottage cheese, 1 cupful chopped English walnuts, 1 cupful bread crumbs, 2 tbsp. chopped onion, 1 tbsp. butter, juice of half a lemon, salt and pepper. Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients and moisten with the water in which the onion has been cooked. Pour into a shallow baking dish and brown in oven.

Skim Milk.—A valuable food as a tissue builder; as a means of supplying protein it will serve as a means of conserving meat. It also is rich in such minerals as calcium and phosphorus. Used in place of water in breads it adds as much protein to one pound of bread as is contained in one egg. To cook a cupful of cereal in three cups of skim milk is to add the amount of protein as contained in three eggs. Vegetable milk soups are also nutritious and economical. In cases of celery, lettuce, cauliflower, asparagus, the older parts may be used, mashing them and straining the pulp through a sieve.

Cereal puddings may also be made with skim milk. A good method of extracting the protein is to put the cereal and milk in a double kettle, using a large quantity of milk and allowing it to cook down. The water evaporates and the food materials are absorbed by the cereal.

Buttermilk has nearly the food value of whole milk except the fat. The lack of fat lowers its food value but it is a good source of protein. A variation of buttermilk is buttermilk lemonade. Use the juice of three lemons to one quart of buttermilk. Add sugar to taste. Clabbered milk served with fruits, jellies, nuts, or plain with sugar is nutritious.

It is a crime to waste products that contain so much nutrition. Train the children to use them.

SKIM MILK SOUPS.

Tapioca Cream Soup.

1 cup tapioca (pearl).
1 quart milk.
2 slices onion.
3 tbsp. fat (butter or beef drippings).
2 tbsp. flour.
1½ tsp. salt.
Pepper.

Cook tapioca until transparent. Heat milk and onions, strain. Melt fat, brown flour in fat, add milk and tapioca. Heat and serve.

Milk Vegetable Soup.

3 cups of the cooked and strained pulp of celery, carrots, corn, etc.
3 cups milk.
1 slice onion.
3 tbsp. flour.
3 tbsp. fat.

Brown flour in fat, add milk which has been heated with onion and strained, then vegetable pulp. Heat.

Tapioca Cream.

4 tbsp. minute tapioca.
2 egg yolks.
½ cup sugar.
2 egg whites.
Vanilla.

Heat milk and tapioca until the latter is transparent. Remove from stove. Add egg yolks and sugar which has been beaten together until smooth. Fold in stiffly beaten egg whites. Add flavoring when cool.

Rice Puddings.

4 cups milk.
1-3 cup rice.
½ tsp. salt.
1-3 cup sugar.
Grated rind ½ lemon.

Mix ingredients using 2 cups milk. Bake in a very slow oven stirring ocassionally and adding other 2 cups of milk as needed.

Method of Cooking Dishes Containing Milk and Milk By-Products.

Milk is valued for its protein content. Protein is toughened by high heat, therefore milk and products made from milk should be cooked at a low temperature. Cook food containing much milk in a dish over water to prevent scorching and curdling due to too high heat. Cook cheese in only a warm oven or in liquid below the boiling point or you will have strong acid flavors developed and tough leathery texture.

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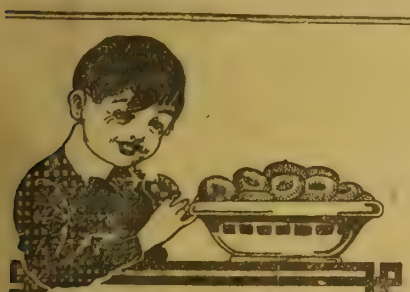

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VALUE OF EDUCATION TO THE FARMER

O. R. Johnson.

"Is education worth while for the farmer?" is a question that has often been answered in a rather indefinite way. Not much information has been obtained on this particular point. The only accurate way of finding an answer this question is by comparing farmers who have reached different stages of advancement in school work.

A comparison has been made on the basis of definite data secured in the 1912 Farm Management Survey, conducted by the College of Agriculture of the University of Missouri in the western part of Johnson County, Missouri. The farmers were divided into two groups, containing respectively, 554 farms, whose operators have received only a rural school education, and 102 farms, whose operators have gone further than the rural school. The training received by this second group in addition to their school educaton amounted on the average to practically two years in the high schools of today. The number of operators receiving a college education was so small as to make a division on this basis impracticable. A comparison of various factors affecting the farms of the two groups will, it is believed, give a more definite idea of the relative positions of the two classes of men. This should answer to a considerable degree the question as to how well education pays the farmer.

In the first place, it should be noted that 15.5 per cent of all farm operators received more than a rural school education. In other words, about one man out of every seven went further than the rural school. Table I shows that the better-educated man operates 44.2 acres or 33 per cent more land. He owns four-fifths of the land he operates while the man of inferior education owns only a little over three-fifths of the land he farms. The man with more education has about 11 per cent higher investment—$89 instead of $80 for each acre of land he operates. The higher investment per acre usually means better land—in other words, land that will give higher yields.

The better-educated farmers keep about one and one-sixth time as much stock as the others, as is shown by the number of acres of crops grown for each animal unit kept. The man with more school training also handles more crops with each workman he employs. Each workman on farms of the first group handles 53.5 acres of crops, while a workman in the second group of farms handles 61.2 acres. In other words, the better-educated man is doing about one and one-fifth times as the man with less school training.

Table 1. Farm Operations of Men of Different Degrees of Education.

	District school only	More than district school
Number of farms	554	102
Average size acres	134.0	178.2
Area		
Owned acres	83.4	140.4
Rented acres	50.6	37.8
Owned per cent	62.2	78.78
Rented per cent	37.8	21.22
Investment per acre	$80	$89
Total value	$10,720	$15,859.80
Crop acres		
Per animal unit*	4.3	3.6
Per man	53.5	61.2
Per horse	14.6	14.8
Productive work units**		
Per man	147.0	171.7
Per horse	37.1	30.7
Percentage of receipts from crops	37.1	30.7
Crop index***	97.0	102.0
Labor income****	$382	$655
Family living	$390	$449

*An animal unit is a horse, cow, five mature hogs, or seven mature sheep; two young animals are regarded as equal to one mature animal of the same kind, on the basis of feed and the manure produced. This unit is only approximate at best.

**A productive work unit is a 10-hour day of productive labor, done by either a man or a horse. It includes work on livestock, on farm crops, or on the improvement of land, but on work stock; on the repairs of fences, buildings, and machinery; or on anything else included in the maintenance of the farm.

***A crop index of 97 simply means that the yield per acre of all crops on this farm or group of farms is 97 per cent as great as the average yield of the groups of the region.

****Labor income is the farmer's net [illegible] after paying from his [illegible] all [illegible] farming expenses [illegible] so [illegible] at 5 per cent, [illegible] wages for [illegible] and [illegible] of his [illegible], but excluding [illegible]

Previous work by the farm management department has shown that the crop acreage almost entirely controls the amount of work which the work stock on the farm has to do and that the man who keeps more livestock has more regular employment for his men. This table shows that while the man in the second group of farms, or the one with more education accomplishes more work, his horses do about the same amount of work as do the horses of the first group of farms. These figures bear out the statement just made above. The man keeping more livestock does more work, while by growing the same crop acres per work horse, his horses do practically the same amount of work as do those of the first group.

The farmers that have received less school training sell almost 25 per cent more crops than the farmers that have received more school training. Thirty-seven per cent of the net receipts of the farm come from the sale of crops in the case of the first group of farms, while only 30 per cent, in the case of the second group. The effect of selling a greater proportion of crops on the farms is shown in the crop index figures for each group. The crop index of the first group is 97 per cent—

(Continued on page 13)

Uncle Sam Says "PRESERVE"

The government urges you to "put up" all the fruits and vegetables you can. If you don't need them someone else does.

To be sure your fruits and jellies will keep, seal them with Parowax. It prevents fermentation and mould by keeping out all air.

Parowax has no taste or odor. It is absolutely pure. At grocers and druggists everywhere in handy pound cartons.

THE CONTINENTAL OIL COMPANY
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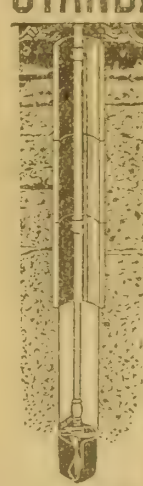
Parowax

Water

WHERE and WHEN you want it—for house, barn, field, any place. Have all the water you want all the year 'round. DIG YOUR OWN WELL with

STANDARD WELL-BORING OUTFIT



No power required, easily operated by hand. Digs wells 8 to 16 in. diameter, 40 to 100 ft. deep. One man dug 40-ft. well in 10 hours. Another bored 2 wells each 64 ft. deep and wrote "it beats expectations."

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Easy to get 50 cts. to $2 per ft. digging wells—make $20 to $30 per day boring wells for neighbors. One man dug 45 wells—another just finished 2, has 6 more ordered. Digs post-holes in 10 minutes. Satisfied users in 46 states. Every claim guaranteed and proved. Write now, TODAY, for information.

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Dep't. 33 106 W. 3rd Street, Cincinnati, O.

About The Silo

ADVANTAGES OF THE SILO

Among the advantages claimed for the silo, particularly at this time when the high price of grain threatens the very existence of the dairy industry, is that less grain may be fed without reducing milk production, provided the dairyman feeds more silage and legume hay. It is pointed out that the building of silos at this time is like the building of ships or fortifications; the silo will help to win the war because it means the saving of grain. Less grain is available for the feeding of cattle, since it is needed for human food and must be conserved for that need. Yet milk production must be maintained, and this can be done by supplementing a shortened grain ration with silage.

The silo offers the best way of preserving the mature corn crop, 40 per cent of the food value of which is in the stalks and leaves. It also saves the crop which, for any reason, must be harvested before it is mature. When the farmer harvests only the ears of corn he loses nearly half the value of the crop; when he puts it into the silo the loss is very small. When drought, frost, or insects threaten a field of corn before it is ripe the entire crop may be lost unless the farmer has a silo ready in which to preserve it.

Value of Succulence.

Just as fruits and green vegetables are canned to supply succulence to the family during the winter, the silo supplies succulence to the cow, and succulence adds to the milk flow. The abundant milk flow obtained from June pasture is, to a large extent, due to the juices of the grass; the silo provides a similar juiciness during winter, when pasture is not available. It promotes the health of dairy cattle by providing the coarse feed to which the digestive system of the cow is accustomed. Cows like silage, and no other feed combines so well with dry hay and grain to produce much milk at little cost.

MAKING SILAGE

Corn makes the best silage when the kernels are well dented. Three-fourths of an inch is recommended as the best length to cut the corn, though the finer it is cut the better it will pack and the better the cattle will clean it up. Coarse-cut corn does not keep as well, and a great deal of it is wasted in feeding. Silage is usually wet when put in the silo; but if it does not feel wet, water should be added. This may be done by means of a hose through the blower, or by wetting successive layers of silage as they are added. It takes several weeks for corn to pass through the heating process which changes it to silage.

SHOCK CORN IF SILO IS NOT READY

Every fall numbers of farmers are delayed in getting their silos completed and find it necessary to cut their corn and shock it before the silo is ready to use in order that the corn may not become too ripe. Other farmers are interested in refilling their silos after the contents have been fed out. Both instances require that shock corn be put into the silo if the silo is used. The Missouri College of Agriculture has investigated the possibility of using shock corn for silage. During the fall and winter of 1913-14, three small silos were filled with corn fodder at different dates and with varying amount of water. Visits were also made to ten or twelve farmers who were using silage made of shock corn and samples were procured for analysis.

The opinions of the men who had used silage made of shock corn may be summarized as follows: (1) It is a satisfactory feed and animals find it more palatable and appear to do better on it than when fed shock corn. (2) Silage made in this way is not equal to that made by putting corn into the silo at the proper stage. (3) Refilling a silo in the middle of the winter with corn fodder prevents the loss in feeding value which occurs, especially toward spring, when fodder is left in the shock. (4) It is more convenient to feed from the silo than from the shock. (5) Cattle eat more of the stalk when it is in the form of silage, thus conserving a large amount of feed which, as shock corn, would be wasted.

It is doubtful if putting dry corn fodder into the silo will ever become a general practice on account of the large amount of water which is required to put it in proper condition. On most farms it is entirely out of the question to consider putting the dry corn into the silo because of not having an abundant and convenient water supply. The studies made with different amounts of water show that corn which has stood in the field until it has thoroughly dried requires about a ton of water for each ton of corn fodder. This amount of water gives the silage about the normal composition found when corn is put into the silo at the right stage. If, on account of wet weather, the fodder is damp at the time of filling the silo, the amount of water may be reduced a little but if this amount is much less than equal parts with the fodder used, more or less mould will develop in the silage. Failure to add enough water was the most common fault found with the silage made from corn fodder in the ten or twelve silos visited.

DANGER IN SILOS

Danger of carbon dioxide gas accumulating in silos must be borne in mind by those who would exercise the proper safeguard in removing silage. Under certain conditions this dangerous gas accumulates in silos, as a result of the process of fermentation undergone, and death by asphyxiation may result in handling the silage. A case of this sort is reported to have occurred when four workmen jumped down into a silo where the silage reached with six feet of the open door. They were removed five minutes later in an unconscious condition, but none was resuscitated, although the attention of physicions was promptly given.

This fatal accident would seem to make it the part of wisdom for the doors of silos being left open as the silage is removed. By having doors just above the level of the silage left off or ajar as fast as the silage is removed, the outside air is permitted to circulate freely in the emptied part of the silo and imprisonment of noxious gases so avoided.

WHY MILK TESTS VARY

The Missouri College of Agriculture has been investigating the causes of variation in the composition of milk for several years. This subject is of importance to the manufacturer of dairy products, to the producer and of special significance in connection with the use of milk as food for infants. The College has found several causes for variation in milk not recognized before.

It is often observed that milk is poorer in fat in summer and becomes richer again in the fall and the farmers have generally assumed this to be due to the watery condition of grass as compared with the dry feed received during the winter. Tests have shown that the cause of this is not grass feeding but the temperature. For some reason there is a tendency for the milk to be richer in fat during cold weather and to become poorer when the weather becomes very warm regardless of the feed consumed.

A second factor of importance as influencing the richness of milk is the fatness of the cow at time of freshening. A cow high in flesh at calving times gives very much richer milk for sometime than would be the case were she thin.

This knowledge is now made use of by every breeder of dairy cattle who desires to make the largest possible record for milk and butter fat production. Another interesting discovery is that when a cow is underfed that temporarily she gives richer milk rather than thinner as might be expected. This is of great importance in connection with making tests of cows and a failure to understand this effect has resulted in wrong conclusions from many experiments conducted with cows in the past.

When you answer an advertisement always mention the Utah Farmer.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE AND SOYA BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building, Salt Lake City, Utah.

$675 Buys It!

Studebaker—SEVEN Passenger—1917 Model

40 Horse Power—Four Cylinder— DELIVERED TO YOUR HOME

Same Model Sells Now at $1,140 F. O. B. Salt Lake.

THIS IS AN ACTUAL PHOTOGRAPH OF THE CAR
Taken in Liberty Park, Salt Lake City.

Here's a genuine bargain for the man who wants a family touring car or one to use for business. It is not a new car. It has been used by one of the managers of a large firm who has given it good care. A business change makes the use of the car unnecessary. So now its to be sold and and that without delay. Terms to responsible parties if desired.

It is fully equipped—five tires, complete set of tools, special tool box, jack, pump, new gasoline saving device which also gives added power, top cover and extra rim. My business takes me all over Utah so if you live in this State I will bring the car to your home, demonstrate it and teach you to drive it. That's fair isn't it? If you want it write today because this kind of a proposition won't keep. First come—First served.

JOHN D. GILES, 600 Vermont Bld. Salt Lake City

FARMERS
ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking **Account with this Bank.** Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

Utah Savings & Trust Co.

255 So. Main, Salt Lake

W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
F. M. Michelsen, Cashier.

Live Stock

HOG JUDGING CONTEST

The National Duroc-Jersey Record Association is offering a trophy cup for judging of Duroc-Jersey hogs at the coming State Fair. This contest is open to "any individual under 25 years of age who has never taken part in a hog judging contest of state character, who has never acted as an official judge of hogs at a fair or show, and who has never served as a teacher of Animal Husbandry in a college or high school." The contest is to take place at 10 A. M. the second day of the fair, October 2nd.

This is a real opportunity for some of your young men to get some good experience.

FATTEN EARLY PIGS

First Fall Markets Are the Highest—Pastures and Grain Forages Give Economical Results.

Pigs which were farrowed early and are about six months old at this time may profitably be finished now and rushed off to market. The early fall market has been the highest market for a number of years, because the number of well-finished hogs arriving at this season is limited.

Pigs may be fattened quickly and cheaply on the nutritious pasture when supplemented by a full grain ration. After deducting the pork same amount of grain fed in dry lot, every acre of these pastures produces from three to six hundred pounds of pork. The full fattening power of the grain is realized as well as a profit on the pasture consumed.

Pastures to Use.

Pigs should be continued on these feeds until fat, usually for a period of six weeks at least. Alfalfa and clover may be pastured as long as forage is required, and they will produce the largest gains due to pasture. An acre of alfalfa furnishes pasture for fourteen to sixteen 150-pound hogs during this short fattening season, while clover will carry from three to four hogs less per acre. Rape is an excellent forage, and although it does not produce as much pork per acre as the two legumes previously mentioned, it returns very good profits for the trouble and expense of planting the corp. It affords pasture for a period of four to six weeks for ten to twelve 150-pound hogs per acre.

Methods of Feeding.

If the pigs are hand fed it will pay to go slow the first week and gradually get them on full feed. After they are accustomed to the method of feeding, they may be pushed along as rapidly as possible without much danger from loss of appeite. Even on leguminous pasture some protein supplement, such as tankage, should be fed with the grain in the proportion of one part of tankage to ten or fifteen parts of grain. A daily ration equal to 4 per cent or 4.5 per cent of the live weight is the maximum amount of grain that a pig will consume.

The self-feeding method is a very efficient system of feeding during this period, and produces results equal to, or better than, those obtained by hand feeding. Grain is consumed more rapidly and economically, causing the pig to attain a marketable weight in a shorter time and with a smaller amount of grain.

PIGS, PORK AND PROFITS

Farmers, of the intermountain states, particularly of Utah and Idaho, are becoming much interested in the livestock situation as affected by the grain markets. With the announcement of wheat prices for the entire nation, which stabilize the prices for other grains used in feeding, there has come a decision among many farmers to re-enter the stock raising business to a heavier extent, for they feel that the gamble has entirely disappeared and that, with definite market prices for the feed and high prices for the animals they are certain to have financial success.

Particularly is this feeling true of the farmers engaging in hog raising. There was a tendency until very recently to sell all pork producing animals, even the brood sows, because of high prices for grain. This is now changing, much to the benefit of the livestock industry of the two states. In Idaho many of the farmers are trying to secure brood sows from Nebraska, to which they shipped this stock a year ago.

One of the men interested in pork raising declared yesterday that with the wheat price basis at $2.20, wheat in Utah will bring about $1.80, or from $1.60 to $1.70 for the usual feed grades. Rye, barley and oats will be reduced in price, compared with the summer figures. Barley can now be bought, on the farms, at two cents a pound, according to this man. With these figures and a scientific showing that from 350 to 450 pounds of feed is necessary to produce 100 pounds of pork—depending on the age of the animal when fed—it is possible to raise hogs at eight cents a pound and sell them for prices ranging from 17 to 20 cents a pound in Utah. This means more than 100 per cent gross profit.

Such a situation certainly indicates that the farmers of Utah and Idaho who are keeping their brood sows and attempting to get more from other states are taking the wise course.—Ogden Examiner.

HANDLING HOGS IN TRANSIT

Every hog that is killed in transit due to overcrowding or mishandling, means a loss at present prices of probably more than $30 to the shipper as well as a waste of meat needed by the Nation. Mortality in transit or after arrival at the central market can be lessened greatly in hot weather by the practice of the following simple precautions on the part of shippers and dealers:

1. When hogs are very hot, during or after a drive, never pour cold water over their backs.

2. Before loading, clean out each car and bed it with sand which, during dry, hot weather should be wetted down thoroughly. Hogs in transit during the night only are not so likely to be lost from overheating as are the animals shipped in the daytime. With day shipments in hot weather it is highly advisable to suspend burlap sacks of ice from the ceiling in various parts of the car in order to reduce the temperature, and incidentally, to sprinkle the animals with cool water. The ice sometimes is placed in sacks on the floor, but the animals are likely to pile and crowd around the cakes so that only those close to the ice are benefited. The ice should be sufficient to last to the destination.

3. Do not overload. Crowding hogs in a car during warm weather is a prolific source of mortality.

4. The feeding of corn, because of its heating effect, before and during shipment in hot weather should be reduced to a minimum. Oats are preferable where a grain feed is necessary. The maximum maintenance requirement of hogs in transit for 24 hours is one pound of grain a hundredweight or approximately three bushels of corn to a car. In the past, thousands of bushels of corn have been wasted in livestock cars.

WARM THE WATER FOR DAIRY STOCK IN WINTER

Cheaper To Heat Water Than For Cows Themselves To Do It With Expensive Feed.

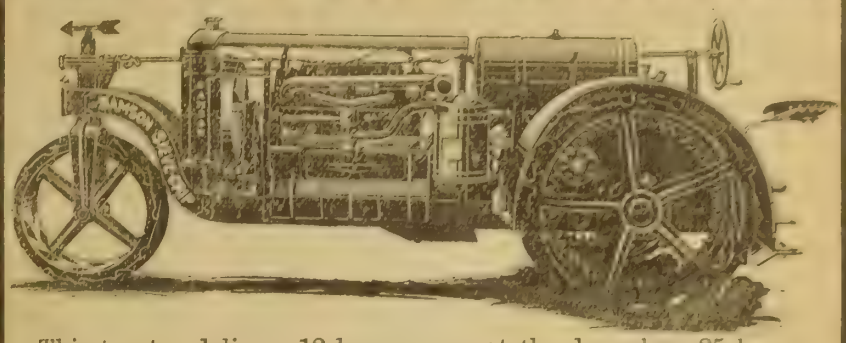
A good supply of clean, fresh water should always be at hand for dairy cows. Much water is needed for the high-producing milch cow owing to the nature of her product, about 87 per cent of which is water. It should be handy at all times and in the winter, if the tank is outside, heat should be applied to take the chill off the water. Cows will drink more water if warmed to 60 or 70 degrees F. than if made to drink ice water. A tank heater can be provided at low cost that will keep water at proper temperature, thereby saving feed and energy of the animal. It is cheaper to warm ice water than to allow the cow to warm it with high-priced feed.—H. C. Nevius.

King Solomon and King David
Led merry, merry lives,
With many, many lady friends
And many, many wives;
But when old age crept over them,
With so many, many qualms,
King Solomon wrote the Proverbs
And King David wrote the Psalms.

Inquisitive Gentleman—Dear me! Have you been wounded?

Tommy—Oh, no; I was cleaning the bird-cage, sir, and the canary kicked me.

SAMPSON SIEVE GRIP TRACTOR



This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns gasoline, distillate or kerosene, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price $1,600.00, delivered on cars at Salt Lake. Tractors on hand for immediate delivery. Also plow equipment for same.

See Our Exhibit at State Fair.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

Why don't you sell Life Insurance?

I know of no business that pays better for honest intelligent effort than the **selling of life insurance**—and no business wherein a man may render greater service to his fellows. There is a greater demand for it today than ever before.

Right now I am looking for men to represent The Beneficial Life—The Big Home Company. This fall and winter there is an **exceptional opportunity** for a man who is willing to work, and there is every reason to believe that the business will get better each year.

I prefer a local man with a home and family. He must be **absolutely honest and dependable**—one who will tell **only the truth** and who will conduct his affairs **honorably**. Previous experience in life insurance is **not** necessary. I really prefer a man who has never sold insurance but who has some selling ability.

I will teach him the insurance business and also give him a course in salesmanship—**all without charge.** The company pays his state license and gives him an agents outfit free. His entire time is desired but **not** aboslutely necessary. He will be well paid for whatever time he devotes to the business.

The life insurance business today is attracting some of the biggest men in the community. It is big enough for **big** man. We are planning a big fall and winter campaign and now is the best time to begin.

The **first** satisfactory man who applies in each community where we are not now represented will be appointed.

John D. Giles

DIRECTOR OF AGENCIES FOR UTAH
600 VERMONT BLDG. SALT LAKE CITY

Gamut Gas Engine Oil

For engines over six-horse power use Gamut Gas Engine Oil—Heavy.

For engine's under six-horse power use Gamut Gas Engine Oil—Light.

Utah Oil Refining Co.
Salt Lake City

LIVE STOCK

CONSERVATION OF HORSE FEED

H. Jefferson.

If the mangers and feed boxes in your horse stable are like the average you can get $25 per day for time spent in knocking them out and rebuilding them this fall.

Take notice and you will find that eight out of ten of the feed boxes for horses are little shallow affairs that permit the horse to throw out and waste sometimes one-third of his feed. This may sound extravagant yet I have seen it often enough to feel safe in the statement.

The majority of horses acquire the habit of shoving and tossing their feed about with their noses while eating. Did you ever see an old worker give his nose a flirt through his feed, dumping a pint or so of it out over the side of the trough? And did you ever see a horse get a big mouthful of feed and spill part of it on the hay and out in front of the manger or maybe back in the bedding? This spilled grain was not all lost but the most of it was. Haven't you got a horse or two that breaks ears of corn over the side of the manger, dropping the pieces on the floor? Did it ever occur to you that a big deep feed box would do away with 90 per cent of this waste?

The grain feed box should be not smaller than 2 ft. by 15 inches and 15 inches deep. If it is placed in a corner with a wall on two sides and a partition or side board on the third side high enough that the horse cannot handily get his nose over it, leaving open only one side to eat from, it is almost impossible for him to waste grain. In the common single stall the feed box can be built the size indicated above and a side board built at the sides and front high enough that the horse will keep his nose inside while eating.

This will do away entirely with tossing the feed out. When once the horse gets his head inside this high-sided feed box he is not apt to back out to swing his head to one side and spill his rations. Eight or ten smooth round stones as large as a medium-sized apple put in each feed box helps to keep the horse from getting too big a bite and keeps him from bolting his feed.

Remodeling the feed boxes need not be a costly job. Do it on stormy days and when other work is not pressing. Use scrap lumber and have it hard wood if possible. Horses soon chew pine boxes to pieces.

Such large grain boxes will take litle off the end of the hay manger in the regulation stall but this is not serious. The hay manger should be a big deep square box with a tight bottom in which the hay can be dropped instead of the narrow trough with a slat bottom as is often seen. The hay manger bottom should be tight so grain dropped into it will not sift through. Nail a couple of laths across the top of the hay manger so the horse cannot toss the hay out. Don't chuck the manger full of hay but drop in a regular feed the same as feeding oats or corn and let the horse clean it up without waste. A pound and a half of good hay to each hundred pounds of work horse is enough when a liberal grain feed is given.

A manger kept full of hay encourages the horse to toss part of it out, hunting a fresh bite, and when he once learns he will try to throw it out if only a few straws are given.

How can you collect $25 per day fixing mangers and feed boxes? Just figure how much you feed your horses in a year. Suppose they waste ten per cent of it because of poor mangers. How long will it take to change the mangers? How much scrap lumber will it take?

Here is a chance for conservation.

ECONOMY IN WATERING HOGS

On every farm there should be some economical way to furnish clean water for hogs at all times. Sloppy food does not answer for both food and drink. Where slop is fed like a thick mush, as it ought to be, the hogs will seek drinking water between feeds. If the slop is too watery the animals will in their endeavor to pick out the solids, swallow more of the liquid than in good for their digestion.

If the animals are watched when they are eating, it will be noticed that they eat awhile and then run an take a few swallows of water, after which they go back to the feed. They will go back and forth to a hog waterer all day.

There is too much independence on surface water for hogs and other stock, too. Ponds, unless they are fed by good springs, become stagnant, and especially is this true in the summer time. Of course such water is bad. The water obtained in ditches and other small streams is little if any better. All such water sources are prolific breeding places for the germs that bring on some of our most troublesome swine diseases.

Good wells furnish the purest and cleanest water for stock of all kinds. Some way should also be arranged to get the water to the stock with the least labor and loss of time.

Many an hour I've spent carrying water to the hogs in pails. It's a mean, nasty job. I was small, then, and I'm pretty well convinced that the hogs did not get any more water than was good for them. I poured the water right into the trough—at least I aimed to. The hogs climbed over each other and into the troughs and sometimes I got a whole pailful of water into the trough, but usually it was poured over the heads of the animals and wasted.

That was a good many years ago. Yet at the present time many farmers are watering their hogs in the same way.

The farm of today should have up-to-date water works. A gasoline engine is a fine thing to use to pump the water into the tanks from which it can flow into automatic waterers, where the animals can secure water at any time. And the saving of a few hogs that may be lost through disease from using unclean water will more than repay for the whole arrangement.

WHAT THE FOOD PRODUCTION BILL PROVIDES

Eleven million three hundred and forty-six thousand four hundred dollars to be used in stimulating production, for protecting and conserving foods, and for a survey of the country's food resources.

Staff of county agents to be increased until at least one agent will be stationed in practiclaly every agricultural county in the United States that will co-operate with the department and the State Agricultural College.

Women county agents for demonstration work in home economics to be increased in rural counties and similar agents to be placed in towns and cities for first time.

Farm help service to be extended in co-operation with Untied States Department of Labor to assist in bringing farmers and farm laborers together.

Country-wide survey to be made of food on farms, in storage, in shops and in homes. Estimates of family consumption of food to be made.

Extension of crop estimating to crops not hitherto reported and to include special inquiries to gather information on extraordinary farm conditions.

Hog and poultry production to be stimulated as far as practicable.

Increased production and conservation of dairy foods to be encouraged.

Animal diseases to be combated on larger scale.

Increased efforts to be made to combat insect pests of plants and animals.

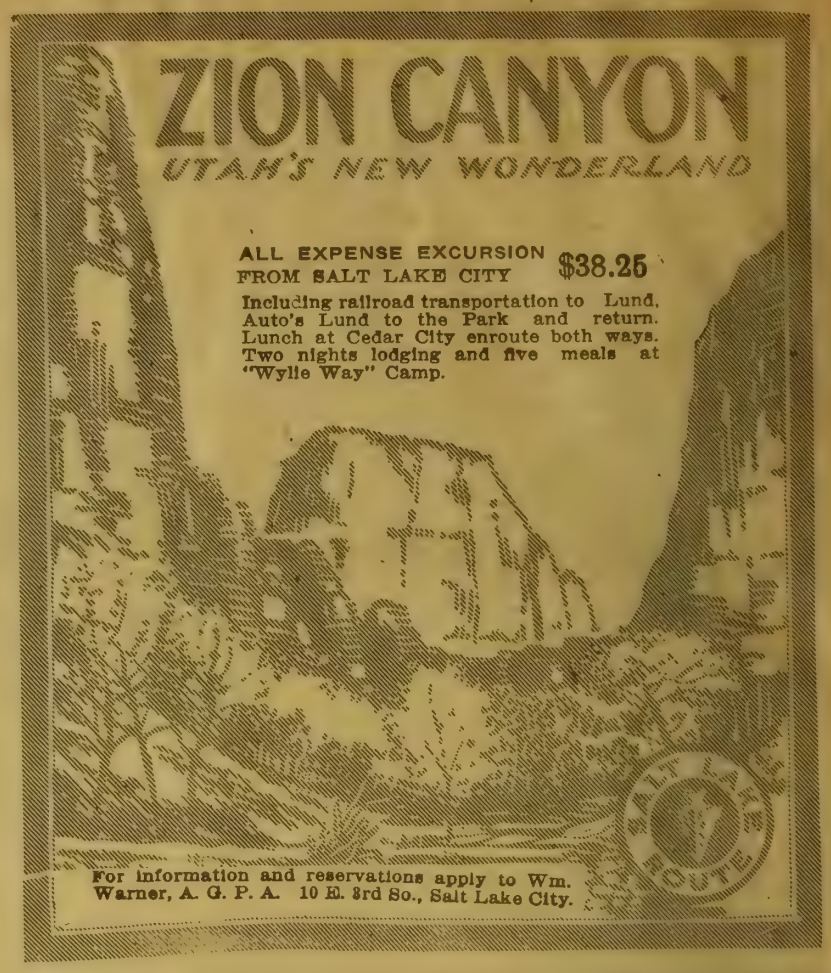
Further steps to be taken to destroy animal pests and predatory animals which injure crops and kill livestock.

Work for the control of plant diseases to be extended.

Survey of seed supplies and needs to be made and results published so that farmers will be assisted in obtaining a sufficient supply of good seed. Seed to be purchased and sold to farmers by the department if necessary in restricted areas.

Demonstrations to be carried out in the proper handling, packing, shipping, and marketing of perishable fruits and vegetables to decrease spoilage.

News service for various farm products to be extended so that producers and consumers can be better informed as to the supply and demand and can sell and buy with less expense, less spoilage, and less lost motion.



CUTTER'S
BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

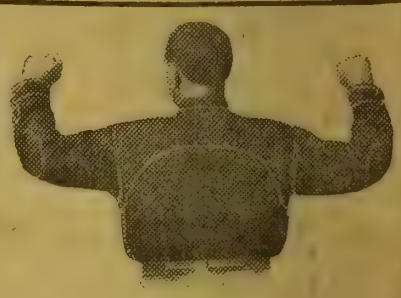
Prices:
10 dose pkge. Single pills $1.00
50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
50 dose pkge. Double Pills 6.00
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent



It's a "Made-rite" Work Shirt

If you want comfort along with the best workmanship and lasting qualities in your work shirts, you should wear

SCOWCROFT'S
"MADE-RITE"

They are the strongest and most comfortable work shirts made.

JOHN SCOWCROFT & SONS COMPANY
Also MAKERS of
NEVER-RIP OVERALLS
and Work Clothes
OGDEN, UTAH.

VALUE OF EDUCATION TO THE FARMER

(Continued from page 9)

in other words, the average yield on these farms is 3 per cent below the average for the whole section. On the second group of farms the yields are 2 per cent above the average for the section. It should be recalled that this point was mentioned in connection with Table I, where it was found that the second group of farms had the higher investment per acre. This figure shows that the second group of farms is occupying better-yielding land.

A careful consideration of these fatcors will lead us to conclude that the man with more school training is getting along a little better. The next figure in this table brings out this point very forcibly. The labor income of the man receiving only a district school education is $382. This means that after he has paid all farm expenses for the year, has allowed his family hired man's wages for any work they may have done on the farm, and has allowed his money the 5 per cent interest to which it is entitled, he has left for his own labor and management $382, in addition to a house to live in, and products which the farm has furnished him toward this family living. The better- educated man has $655 labor income, or within $110 of twice as much for his time and labor in addition to his house to live in and the products which his farm contributes toward his living. The last figure in this table makes a comparison of the total cost of family living of the two groups. There is only about $60 difference in the total amount of money spent for the family living.

In conclusion, there are several points which these data bring out. The one of greatest interest, perhaps, is that the better-educated farmer is making an income 71.4 per cent greater than the man with less education. After the labor income of the man with less school training is adjusted to allow for difference in size of business, the man with more education still has about 40 per cent greater income than does the first mentioned group. The other factors indicate strongly that the better-educated man has his business better organized. The facts that he gets slightly better yields and has a system which furnishes him more productive labor, and that he keeps more livestock, seem to show that he has somewhat greater ability in the organization and handling of his business. Because of this fact, it is found that he makes enough larger labor income to pay interest on approximately $5,500 capital, and allowing for the difference in size of business he still makes enough larger income to pay interest on $3,700. Other studies have shown that with this size of farm each acre that the farm is increased will add approximately $2 to the labor income, but that the investment per acre on the two farms is not enough different to make any difference in the income in favor of the better-educated man. Also, the difference in crop yields is not great enough to change the labor income materially. With these facts considered, it would appear as though the man who has received more mental training, has increased his efficiency thereby, to the extent of making interest on a capital of at least $3,700. This does not seem to be a bad investment for the small amount of time he spends in getting the additional training and the probable expense of obtaining this training. While other factors may have ployed some part in his greater earning capacity, yet from a careful study of the organization of his business, it appears that education must have proved a very large part in his greater earning ability.

—o—

RIGID CENSORSHIP

"I wish to see Mr. Louis about a bill."

"He's on his vacation."

"Did he leave any address?"

"Yes, sir. For bill collectors it's 'somewhere in America.'"

ROTATION SYSTEMS FOR IRRIGATED SECTIONS

By F. S. Harris, Director Utah Agricultural Experiment Station.

Land recently brought under cultivation from its virgin state is usually fertile, and as a result very little attention is given to conserving soil fertility in new countries. After the land has been cultivated a number of years and its productivity begins to decline more attention is given to proper methods of handling it. At first no systems of cropping is followed and but little attempt is made to save the farm manure; later all fertilizing materials are saved and crops are rotated in the manner that will give the highest returns. In the West agriculture is just reaching the stage where farmers find it necessary to revise the old slip-shod methods of cropping and adopt definite rotations based on scientific principles.

Irrigated land offers splendid opportunities for good rotations since so many crops can be produced, and the intensive methods, which accompany irrigation, are particularly favorable to rotations. We should expect, therefor, to see during the next generation very satisfactory systems of cropping in operation on the irrigated farms of the West.

It is probable that in many districts alfalfa will be the foundation of most rotations. This crop requires very little work, which makes it fit in well with such crops as corn, potatoes, sugar beets, and other cultivated crops. Alfalfa also furnishes a means of enriching the soil provided a crop is plowed under. Many farmers labor under the impression that the mere growing of alfalfa on the land for a long time without plowing any of it under will fertilize the soil; this is a mistake. Alfalfa uses plant food the same as any other crop. It does, however, gather nitrogen from the air and store it in the crop, but if the crop is hauled away the nitrogen is taken also. With the return to the land of the manure resulting from feeding alfalfa, considerable fertility is brought back; but in addition to this it is a good plan to plow under a full crop of alfalfa before putting in the next crop in the rotation. A good manuring combined with the plowing under of a crop puts the land in first class condition for the crop that follows. Usually a cultivated crop should follow alfalfa or any soil that is plowed under. This gives an opportunity to kill the sod plants and assists the organic matter to become thoroughly incoroporated into the soil. Where corn is raised it makes almost an ideal crop to follow alfalfa; in fact, corn almost follows the sod-producing crop in the rotation. Potatoes also make a good crop to follow alfalfa and when a piece of alfalfa is plowed under part could be planted to corn and part to potatoes, the amount of each depending on the relative profitableness of the crops.

If sugar beets are to be included in the rotation they can follow corn or potatoes to good advantage and can usually be raised two years on the same land with profit. The beets can be followed by a year of beans, peas, or grain, after which the land can be put back into alfalfa with a grain nurse crop.

If a farmer has 100 acres of land the rotation could be worked out as follows: 50 acres in alfalfa which would remain on the land five years. Ten acres of the alfalfa would be broken up each year and 10 acres planted. When the alfalfa is plowed up a crop of hay can be turned under to advantage. The ten acres that is broken would be planted to corn or potatoes, or a part to each. The next two years beets would be on this 10 acres, followed by beans, peas, or grain. The last year of the rotation would be devoted to grain with new alfalfa.

This would give on a 100 acre farm 50 acres of alfalfa, 10 acres of corn and potatoes together, 20 acres of beets, 10 acres of beans, peas or grain, and 10 acres of grain with new alfalfa. Although this rotation has a number of weaknesses, it also has many strong points and if practiced in connection with a liberal use of farm manure will keep the land in good condition for each crop. It also insures an even distribution of work and income.

No one system of rotation is adapted to all farms since soil, markets, climate, and other factors are so variable. Each farmer should study his own conditions and try to get a rotation adapted to them. It is important that the subject be given attention and some system planned.

—o—

IT MADE A DIFFERENCE

An excited Chinese laborer dashed into a foreman's tent, when they were building the Panama canal, and cried:

"Oh, Mister Boss, Chung Lo him stuck in mud up to him ankles."

"In the mud up to his ankles!" roared the boss. "Why the deuce don't he get out?"

"Oh, Mister Boss, him upside down!"

Have You a Son of Your Own?

Is there any other young man in your community in whom you are interested?

Are you anxious for these young men to succeed in life?

Do you know that more men fail because they are not suited to their work than from any other cause?

These questions will help you to decide whether or not you should have the new book, entitled

The Young Man and His Vocation

by Dr. Franklin Stewart Harris of the Utah Agricultural College.

Dr. Harris has made a special study of the industrial needs of young men. He has prepared two manuals on vocational subjects for the Young Men's Mutual Improvement Associations, and he is thoroughly familiar with the problems of the young men of the West.

His book contains the cream of his writings on the subject.

Can you afford to have your son get along without this book? Send $1.25 Today to the

BOOK DEPARTMENT—THE UTAH FARMER
Lehi, Utah.

BACK EAST EXCURSIONS

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"HOME VISITORS"

From All Utah Stations

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WM. WARNER, A. G. P. A., Salt Lake City.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

A REAL OPTIMIST

Mrs. Bingem—What a cheerful woman Mrs. Jolley is!

Mrs. Harde—Isn't she? Why, do you know that woman can have a good time thinking what a good time she would have if she were having it!

—o—

During the war, take your coat off —but keep your shirt on.

The Manufacture of Unfermented Fruit Juices

By T. H. Abell, Assistant Horticulturist, Utah Agriculutral College.

Many dollars worth of sound but unmarketable fruit which goes to waste every year could be made to pay for itself if not to yield a profit. Among the methods of utilizing this waste fruit is that of making unfermented fruit juice. The market demand for unfermented fruit juices seems to be now well established in certain places and is rapidly growing in others. It should also be used freely as a home beverage and can be easily made in the home.

There are three necessary operations in the manufacture of unfermented fruit juice: the extraction of the juice from the fruit, the clarification of the juice and the sterilization in the container to insure its keeping.

Only sound ripe fruit should be used, as green or decaying fruit is almost certain to spoil the flavor of the product or cause disaster in some stage of the process, especially before the final sterilization. Ripe fruit possesses the most juice and the most sugar, giving it the best flavor. The fruit is first washed and then ground or crushed usually with an apple crusher or grater. This facilitates the flow of the juice in pressing. The crushed mass is then pressed to extract the juice. For home manufacture the best outfit is probably the common apple cider crusher and press, while on a large scale the "rack and cloth" or "cheese" method with a hydraulic press is used extensively. The pressure, in all cases should be fairly steady and only gradually increased. The juice from the first pressing is always the best and that from any subsequent watering of the pulp and further pressing will be inferior. The press basket, cloth or whatever is used to hold the pulp should be cleansed with hot water every night, while in use. If these precautions are not taken, the utensils will collect an abundance of yeasts and bacteria which will contaminate the juice and perhaps spoil the product.

The next step is the clarification of the juice. If it is allowed to stand undistrubed for a day or two, most of the sediment will settle. This natural settling is usually not sufficient to remove all the sediment, and there are many methods used to complete the clarification. One is the addition of "finings," such substances as tannin and gelation, dried egg albumen, casein, and silicate of soda or powdered isinglass, after which it is allowed to stand a few hours more and the finings settle to the bottom, carrying all sediment with it. The juice is usually pasteurized, the finings stirred in, and then allowed to stand until clear.

Another method of clarification, for which good results are claimed, is the use of a milk separator. After the first settling, the juice is pasteurized (heated to 160 degrees F. for one-half hour) and run through the separator at least twice. The sediment clings to the bowl. The bowl should be cleaned often.

After the clarification the juice is pasteurized by heating in fruit jars, bottles or other containers 150 degrees F. for one hour or 160 degrees F for one-half hour. This kills all organisms which cause fermentation.

The juice is then placed in the containers in which it is to be kept, the corks or caps are taken from boiling water and put in place and the whole put into a water bath where it is heated for the final sterilization. When bottles are used the corks are tied on to keep them from blowing out. The temperature for this heating may range from 150 degrees F. to 195 degrees F. but in general, the lower the temperature the longer the heating; and the final sterilization should be at a higher temperature than was formerly used in pasteurization, as it is liable to cause a further precipitation of sediment.

This method, with variations, may be used for the preparation of the juice of most any fruit. For small fruit, like grapes, the press basket may need to be lined with cloth or even clean straw. It is also necessary to pasteurize grape juice and then skim it, immediately after pressing and before the natural settling.

Cleanliness in each operation and care in the final sterilization is the key to success in making palatable and well preserved unfermented fruit juice.

—o—

MORE LIKELY

"Any rags, Any old iron?" chanted the dealer, as he knocked at the suburban villa. The man of the house himself opened the door.

"No, go away," he snapped, irritably. "There's nothing for you. My wife is away."

The itinerant merchant hesitated a moment, and then inquired: "Any old bottles?"

—o—

When lambs are weaned, keep them on the old pasture for a few days and remove the ewes to pastures as far away as possible. When accustomed to being by themselves, the lambs should be put on good fresh feed.

FOR SALE—REAL ESTATE

Ninety acres fruit and stock farm near Ogden, 30 acres in choice fruit, $1,000 in tools and implements. Full water right. Will sell with or without this years crop. One-half of purchase price can run at six per cent. Will consider trade for desirable city or farm property.

O. A. KENNEDY
Utah Nat'l. Bldg. Ogden, Utah

UINTAH BASIN FARM FOR SALE

160 acres, 120 acres irrigable, 73 shares paid up water stock, representing over one second foot of water.

50 acres plowed and partly seeded, three wire fence, good locality, near town of Myton, close to state road.

Owner has more land than he can care for, and make beneficial use of water on, land near by sold recently for $75.00 per acre, land adjoining held at $40.00 without any improvements on it. To make quick sale offer this place for $4,000.00, can give terms to suit. Will consider trade.

P. O. BOX 225, MYTON, UTAH.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.
Fairview Utah

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

AN IDAHO RANCH BARGAIN

480 acres, all can be irrigated, two running streams across property, adjoins open range, eight miles from railroad station and two miles from school. All fenced and produces 200 tons of hay. Includes 150 cattle, 15 horses and all necessary machinery. Price $17,500, terms.

FEDERAL LAND CO.
Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

RELIABLE FARM BARGAINS

KIMBALL & RICHARDS,
"Land Merchants."

Within five miles of Salt Lake City, in the southeast, we have one of the most ideal farms and chicken ranches to be found in the state of Utah. This property contains 42 acres, six-room house, large barn, silo, place to feed the cows direct from the silo to the barn, good orchard, chicken coop, brooders. This chicken equipment has cost $3000 and is in first-class condition, all steam heated. There is a fish hatchery on the place. beautiful stream of water; ground planted this year to sugar beets, grain and other crops. This property can be had on a quick sale for $11,000. That will include all the machinery on the place, one good cow, all the chickens on the place. The potatoes have not been dug, the sugar beets are still in the ground and a lot of other crops still to harvest that will go with the sale of this place. If you are looking for a beautiful farm that is an all-around farm and chicken ranch and fish hatchery, with about forty acres of first-class ground, this would certainly appeal to you. We can make terms on this place.

Just below 14th South we have two acres at $500 per acre, 10 per cent down and ten years on the balance.

On 16th South we have one acre and a nice little home for $1200, easy terms.

We still have one farm belonging to the Keystone Steel & Wire company of Peoria, Illinois, for sale. These people have instructed us to sell this immediately. The farm is one of the best in the Bear River Valley, both from the point of improvements, location, soil and water right. The property contains 120 acres and has a beautiful home, granary, machine sheds, icehouse, hog pens, chicken coops, blacksmith shop—in fact, all the buildings that could be desired on any first-class farm. These buildings are in a fine state of preservation, having been well painted. This property lies on the main county road, a short distance from the town, and lies in such a way that it is easy to irrigate, being next to the main canal. This property can be had on 25 per cent down and ten years on the balance, 6 per cent interest. We are holding this at $175 per acre. This property is really worth $225 per acre. If you are looking for a farm that will pay for itself with your work, this certainly will appeal to you.

We have a number of farms for sale in Cache valley. One farm of 75 acres at $110 per acre. This property is under a high state of cultivation and lies in a good locality, near schools, churches and railroad station.

160 acres for $7000. This property lies under the canal and is splendid land. This property can be had for 10 per cent down and ten years on the balance.

At Farmington, a part of the old Bishop Secrist farm for sale, lying below the county road, and has been considered for years one of the best farms in Davis county. This farm can be had for $250 per acre. We are willing to give terms on this farm.

700 acres of dry farm land which has produced a wonderful crop this year. This property is one-half planted to summer fallow grain now; good house, barns and other improvements. The canal runs through the property and it is all subject to irrigation; one mile from the railroad station and lies in the center of the Bear River valley. This property has a combined harvester and all necessary machinery and can be bought for $55 per acre. We are willing to give good terms on this property.

KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street, Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS
WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

ABOUT THE RRICE OF WHEAT

(Continued from page 3)

primary markets for the 1918 wheat is fixed by law to the principal interior primary markets these being the various terminals of the present grain corporation and the price at points removed from these terminals will be as in the present situation reduced by the same freight differentials as at present. In other words the price under the guarantee for 1918 will work out at roughly from sixteen to twenty cots a bushel under the governmet price for this year's wheat. Therefore it is to the advantage of the producers to market this year's wheat while they have the opportunity of the larger price. In fact the present price has been graded above the government guarantee fo the reason among others that it would induce the immediate and advitageous marketing of the present heat. The proposition to establishan inter-mountain terminal for the purchase of wheat by the grain corporath is out of the question for the reason that it would open up the whole suect in each one of the other forty eight states and would entirely disrupthe natural flow of grain to the estaished markets. In regard to increasing the amount allowed to grain dealers in the inter-mountain country for handling wheat it would be impossible to make exceptions to a generarule for the reason that every pacular section has its own particulaproblems and cost of handling andthe alterations made in method grading and the base market estashed on the Pacific coast should brove the position of the farmer a the grain dealer.

(Signe W. W. Armstrong,
Representative United States Food Administration.

Sed Wheat
and Rye
ForFall Planting
GOur Prices
Voler Seed Co.
SA' LAKE CITY

GOVERNMENT RECOMMENDS TWO GRADES FOR MARKETING POTATOES

Two standard grades for potatoes have just been recommended by the United States Food Administration and the United States Department of Agriculture. Results of field tests in grading and packing and of experiments in marketing graded and ungraded potatoes show that marketing potatoes by grades is desirable, practical, and economical.

Further, it has been ruled by the Federal Reserve Board that "potatoes, properly graded and packed and stored in a weatherproof and responsible warehouse, as evidenced by its receipt, would undoubtedly constitute a readily marketable, nonperishable staple."

The present prospect of a very large crop of potatoes, the food supply situation, the overtaxed transportation facilities, and the ruling that Federal reserve banks may make loans against potatoes properly stored in approved warehouses emphasize the importance of adopting uniform grades.

Grades Recommended

The No. 1 grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth, cuts, scab, blight, dry rot, and damage caused by disease, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths (1⅞) inches, and of potatoes of the long varieties one and three-fourths (1¾) inches.

The No. 2 grade shall consist of potatoes of similar varietal characteristics, which are practically free from injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects, or mechanical means. The minimum diameter shall be one and one-half (1½) inches.

Reasonable tolerances are allowed for variations incident to commercial grading and handling and explanations of the terms "practically free," "diameter," and "free from serious damage."

GENERAL SUMMARY OF WEATHER DURING AUGUST

There were no marked departures from normal weather conditions during the month of August. Temperatures averaged slightly above normal in the southwestern quarter of the State, and somewhat below elsewhere. The warmest periods were the first ten days of the month, and from the 21st to the 25th, with the actual maximum for the month generally on the 3rd, 7th or 9th. The lowest temperatures occurred most frequently during the last four days, and resulted in light frosts at a few of the more elevated farming sections, but without material damage. Precipitation was generally less than the average, only six stations reporting amounts above the normal. Showers occurred in most sections of the State during the week from the 12th to the 18th, but there were no well-defined rainy periods, and there was rain at some stations on every day of the month but the amounts were in most cases quite small. There was some local damage to telegraph and telephone lines and to fruit on the trees by lightning and wind, accompanying the thunder storms of the 25th to the 28th.

Haying and harvesting proceeded rapidly under favorable weather conditions. By the end of the month the second crop of alfalfa was mostly cut, and the seed crop was doing well except where damaged by grasshoppers and weevils. Thrashing was nearly completed, and fall plowing had begun. Despite the deficiency in precipitation, pastures and ranges, and consequently stock, maintained good condition in the greater part of the State, especially in the higher ranges, which are largely in the National Forests. Fruits, sugar beets, potatoes and tomatoes made satisfactory progress. Apricots and early apples were gathered during the month, and late fruit promised a large crop, but the fruit itself, especially apples, was of a small size. The canning of beans and peas was completed, and tomato canning begun with tomatoes of excellent quality.—T. A. B.

Temperature.

The monthly mean temperature for the State as shown by the records of 79 stations was 68.9 degrees. The mean departure from the normal for 39 stations having records for 10 or more years was—0.6 degrees. The highest temperature observed was 100 degrees at St. George on the 2nd; the lowest was 30 degrees at Snowville on the 29th.

Temperature were above normal at 14 stations, mostly in the southwestern part of the State, and below normal at 25 stations.

Precipitation.

The monthly mean precipitation for the state, as shown by the record of 123 stations was 0.51 inch. The mean departure from the normal for 52 stations having records for ten or more years was—0.52 inch. The greatest monthly amount was 2.01 at Monticello; the least was none at ten stations. The greatest amount in 24 hours was 1.05 inches at Monticello Ranger Station on the 13th.

Precipitation was entirely in the form of thundershowers, mostly light, which were well distributed geographically, and also through the month.

BALANCED RATIONS AND FORAGE CONSERVE FEEDS

In these days of food shortage it is important that meat be produced with a minimum of feed suitable for human consumption. This can be done by using more forage and by feeding properly balanced rations.

Cattle will make good gains on silage with linseed oil meal or cottonseed meal. Steers fed a daily ration consisting of silage 49.4 pounds, linseed oil meal 4.35 pounds, and alfalfa hay 5.8 pounds, gained 2.44 pounds per head per day, brought $12 a hundred and returned a profit of $15.54 a head.

A lot of similar steers fed shelled corn 17.11 pounds, linseed oil meal 2.85 pounds, silage 30 pounds, and alfalfa hay 3.78 pounds, gained 3.26 pounds per head per day, brought $12.75 a hundred and returned a profit of $10.08 a head. Adding shelled corn increased the rate of gain and the selling price, but cut the profit per head $5.46. Hogs fed on forage crops required 3.18 pounds of grain for each pound of pork. Those fed in a dry lot required 5.11 pounds of grain for the same gain. The hogs on forage returned $2.20 a bushel for corn, and those in the dry lot returned $1.32 a bushel. These figures are based on a sale price of $12 a hundred for the pork in both cases.

Much forage which could be profitably utilized by lambs goes to waste on a number of farms. A good growth of cowpeas or soybeans in corn will pasture 3 or 4 lambs per acre from September 15 to November 1, and this feed will make about 15 pounds gain on each lamb.

Hogs fed tankage with corn in a test returned a profit of $13.05, while those fed only corn returned only $5.75.

A little girl whose father was a commercial traveler sat on the porch holding a kitten and, creeping close, her mother heard this:

"Kitty," said the young miss, "I know you an' I know your mamma, an' I know all your little brothers an' sisters, but I ain't ever seen your papa." Then, after a brief pause, "I spec' he must be a commercial traveler.

$10.50 Los Angeles and Return
Tickets on Sale Daily
une 15th to Sept. 30th
Div Routes Via Rail and Steamer, Including San Francisco
Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.
Stopovers at All Points. No Validation Fee.
Final Limit October 31, 1917.
For Reservations and Routings, see
Local Agent, or Address
WM. WARNER, A. G. P. A.,
Salt Lake City, Utah.

Richards Durocs
are now on exhibition at the Idaho State Fair, Boise, Idaho.
They will be shipped from Boise to Salt Lake for exhibition at the Utah State Fair September 29 to October 6.
See us at the Fair and if you are in the market for a Choice Boar or Sow we can furnish your wants.
We guarantee to please or will refund your money.
RICHARDS LIVE STOCK CO.
Virginia, Idaho.
"Home of the Champion Durocs"

BROWN BROKERAGE COMPANY
Eccles Building, Ogden, Utah.
Our business is selling in car lots.
COTTON SEED CAKE & MEAL
CORN, OATS, HAY, STOCK FEED
Provide against uncertainties of transportation by anticipating your requirements early.

FOR SALE
Registered Duroc Jersey pigs from "Richards Defender" and Pathfinder" and "Illistrator" breeding. Some fine boars and sows of "Burks Goodenough" young boars for sale from "Harolds Model," Blue Ribbon sow, at Utah State Fair 1915 and 1916 and "Defender."
VICTOR R. FISHER
Oxford Idaho.

Produce market wishes to hear from parties having all kinds poultry and fresh eggs for sale. Box 237 Ely, Nevada.

KESKO FARM
Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers
also
100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

FOR SALE
Registered Duroc Pigs, grand-daughters of noted Defender and guaranteed, $15.00 each while they last. Have been crowded along. Reference: First National Bank, Ogden, Utah. Write
LIONEL THATCHER
Ogden Utah

CHOICE TURKEY RED SEED WHEAT
SUPERIOR VARIETY
Will yield better than the ordinary varieties. Only small amount of it in the State. Recleaned and ready for planting. Price very reasonable. Orders received subject to stock being sold. Write for prices.
J. W. PAXMAN
Nephi Utah

EDISON'S VERY LATEST AMBEROLA!

Thomas A Edison

President of Thomas A. Edison, Inc.

NOT A PENNY DOWN!

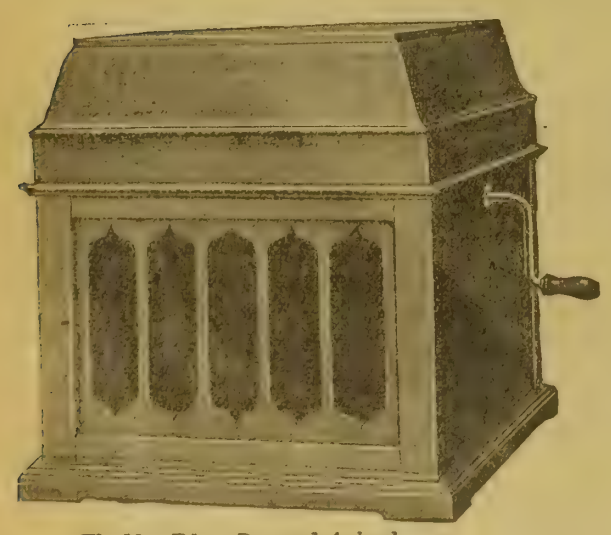
The Wonderful New Phonograph with the Permanent Diamond Point

This is the famous Diamond Amberola, which, in numerous competitive comparisons, has won unanimous verdicts of superiority over well-known talking machines that sell at three and four times the price of the Amberola. These verdicts were rendered by thousands of phonograph experts and were absolutely unprejudiced. The instruments were played behind a curtain and the curtain was not raised until after ballots had been taken. No one knew the names of the instruments. They only voted as to which tone was better, No. 1 or No.

Your Home Needs Good Music

There cannot be too much good music in your home. Every home should have music, and the best music. You would not be without an Edison Diamond Amberola after you heard its wonderful reproduction of the beautiful heart songs, stirring band pieces, war songs, seductive orchestra selections, lively Broadway hits, comic recitations, grand opera arias, and majestic hymns—music which respon to every musical desire. With the Amberola you can make your evings at home a delight, keep your children contented, entertain your nds and be right up to the minute in musical knowledge. You wa the best phonograph you can get for the least amount of money, don'bu? Then read our offer below.

SPECIAL FREE TRIAL!



The New Edison Diamond Amberola
MODEL 50

NOT A PENNY DOWN

We are so sure that you will want to keep this wonderful Diamond Amberola in your home after yeave heard it, that we have made special arrangements with a certain number of dealers whereby anye of them will send to any reputable person, on an absolutely free trial, one of these wonderful Edison Dond Amberola instruments.

These merchants have set aside a number of Edison Diamond Amberolas selling at $30, $50 an75. These instruments will be sent out on free trials. With them will be sent a program of beautiful musuch music as you have never heard before on any phonograph. Don't wait until this free trial offer has ed.

HOW TO GET THE FREE TRIAL

Look over the list of dealers below and send the coupon to the dealer who is located closest to y *If there is no Dealer near you, send the coupon to us and we will endeavor to arrange a free trial you.*

Enjoy this wonderful music for 3 days. Then if you decide to keep the Diamond Amberola can arrange with the dealer to pay for it on convenient terms, if you do not care to pay cash. Tha all. No strings, no cost to you!

SEND FOR OUR BEAUTIFUL AMBEROLA BOOK IT'S ABSOLUTELY FREE!

PROUDFIT SPORTING GOODS COMPANY
OGDEN, UTAH

IDAHO

ALBION—E. M. Snodgrass
BLACKFOOT—T. A. Hayes
BOISE—Sampson Music Co.
BUHL—C. D. Boring Drug Co.
BURLEY—Paulson Jewelry Co.
CALDWELL—Sutton & McArtor
DRIGGS—James F. Griggs
EMMETT—W. J. Easton
FILER—F. E. Drake
HAILEY—J. J. Tracy
IDAHO FALLS—Alma Marker
JEROME—B. E. Davis
MT. HOME—F. J. Pillmer
MT. HOME—F. J. Pillmer
POCATELLO—H. H. Whittlesey
ST. ANTHONY—Ashcraft Jewelry Co.
SODA SPRINGS—C. A. Piar
TWIN FALLS—Colwell & Spargur
PRESTON—Foss Bros.

UTAH

BINGHAM CANYON—M. L. James
LOGAN—Harris Music Co.
MANTI—W. M. Taylor
MONROE—Monroe Drug Co.
OGDEN—Proudfit Sporting Goods Co.
PANQUITCH—Elko Pharmacy
PARK CITY—Paul Bros. & Wilson
PAYSON—C. E. Smith
SALT LAKE CITY—Keith O'Brien Co.

Dealer nearest you.....
Send me the Amberola Book, particulars of v trial offer and the name of the nearest Edisc
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Ag. Sem.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 10 LEHI AND SALT LAKE CITY, UTAH OCTOBER 6, 1917

Great Liberty Loan Campaign

Utah Will Do Her Part to Help Make the World Safe for Peace and Democracy

The farmers of the state will help buy Liberty Loan Bonds.

This spring when the first Liberty Bonds were sold the farmers needed their money for seed and help on the farm now they are harvesting one of the greatest crops they every produced and will do their share to help our government and her allies put down Prussian rule.

War requires men; War requires money. The young men of the nation are preparing to offer themselves for the supreme sacrifice. Every other American must not be less prompt to offer his money and his help.

The Nations who are now our Allies have been fighting for over three years, a gigantic War, for the perpetuation of Civilization and Democracy. They have fought for us quite as much as for themselves.

Until the time our armies are trained and our man power is effective, we must willingly and efficiently help them with food, guns, ammunition and other equipment of many kinds.

We must mobilize our dollars to help our men and our Allies win a great and permanent victory for civilization. This is a duty we cannot evade, and would not if we could.

How You Can Help

There is now offered to the American people a new issue of $3,000,000,000 of bonds to be known as the Second Liberty Loan. They are issued in such denominations and upon such terms that every patriotic citizen will have an opportunity to assist the Government by lending his money upon the security of a United States Government bond.

It is essential to the success of the war and to the support of our gallant troops that these loans shall not only be subscribed, but oversubscribed. No one is asked to donate or give his money to the Government; but everyone is asked to lend his money to the Government. The loans will be repaid in full with interest at the rate of four per cent per annum. A Government bond is the safest investment in the world; it is as good as currency and yet better, because the Government bond bears interest and currency does not. No other investment compares with it for safety, ready convertibility into cash, and unquestioned availability as collateral security for loans in any bank in the United States.

Through the purchase of Liberty Bonds every one can help. No more patriotic duty can be performed by those who cannot actually fight upon the field of battle than to furnish the Government with the necessary money to enable it to give our brave soldiers and sailors all that they require to make them strong for the fight and capable of winning a swift victory over our enemies.

Why We Are At War

In opening the Second Liberty Loan Campaign, Secretary of the Treasury W. G. McAdoo said:

"We fight, first of all, for America's vital rights, the right to the unmolested and unobstructed use of the high seas, so that the surplus products of our farms, our mines and our factories may be carried into the harbors of every friendly nation in the world. Our welfare and prosperity as a people depend upon our right of peaceful intercourse with all the nations of the earth. To abandon these rights by withdrawing our ships and commerce from the seas upon the order of a military despot in Europe would destroy prosperity and bring disaster and humiliation upon the American people.

"We fight to protect our citizens against assassination and murder upon the high seas while in the peaceful exercise of those rights demanded by international law and every instinct and dictate of humanity.

"We fight to preserve our democratic institutions and our sovereignty as a nation against the menace of a powerful and ruthless military autocracy headed by the German Kaiser, whose ambition is to dominate the world.

"We fight also for the noble ideal of universal democracy and liberty, the right of the smallest and weakest nations equally with the most powerful to live and to govern themselves according to the will of their own people.

"We fight for peace, for that just and lasting peace which agonized and tortured humanity craves and which not the sword nor the bayonet of a military despot but the supremacy of vindicated right alone can restore to a distracted world.

"To secure these ends I appeal to every man and woman who resides upon the soil of free America and enjoys the blessings of her priceless institutions to join the League of Patriots by purchasing a Liberty Bond."

To sell these bonds in Utah there is a State Excutive Committee and in each county the County Council of Defense has charge of the work. In each city, town, or community, committees have been appointed and will carry out the details.

How to Secure a Bond

All subscriptions must be made through banks.

Any bank in Utah will accept your subscription.

Term of bond—maturity twenty-five years; redeemable at the option of the secretary of the treasury in ten years.

Denominations of bonds—Fifty dollars and multiples of $50.

Interest rate—Four per cent, payable semiannually on November 15 and May 15.

Terms of payment—Two per cent upon application; 18 per cent November 15; 40 per cent December 14 and 40 per cent January 15, 1918.

There is still another way that can be arranged for by those who can not buy on the terms given above. A payment of $6.05 down and then monthly payment of $5.00 a month for nine months, a total of $51.05 which cover the interest of the defered payment, these figures are made for a $50.00 bond and would be double the amount for two.

Utah's Share of Loan

For the first Liberty Loan Utah was asked the loan $6,500,000 to our government and we subscribed $9,405,050 very near fifty per cent more than our quota. Will we do as well with the $12,000,000 our share of the Second Liberty Loan. Every person should subscribe for a bond. The rich men will take the greater part but every citizen is expected to show his patrotism by doing his "bit."

If you live in a place where there are no banks write to the nearest one or to any of the banks in Salt Lake City and they will take care of your loan for one of these Liberty Bonds.

WHAT AMERICA IS DOING

Few can grasp the wonderful work that is being accomplished by our nation.

An army of 1,500,000 already mobilizing for active service; a navy fully manned, completing the first line of defense; the most gigantic activity in merchant shipbuilding in the world's history now under way; aviation plans on a scale that makes Germany gasp; preparation for supplies aggregating billions, and work on ordinance for billions more; food conservation; Red Cross; sweeping rearrangement of railroad management; a plan for insuring soldiers and their families; all these and many more projects have been and are being perfected.

Uncle Sam asks Americans to realize that on April 6 of this year there were in the United States navy 64,580 enlisted men. Now there are 200,000. The marine corps number 30,000. A increase of more than double. There are nineteen large training camps.

Vessels in Service

Already there are in service nearly three times as many vessels of all types as six months ago. Hundreds of yachts, fishing vessels and fast motor boats have been transformed into patrol boats, submarine chasers and so on. The Atlantic fleet is doubled. The navy is seven times as great as in the Spanish war. The naval construction program is the largest in history, 647 vessels ranging for 32,000-ton superdreadnought to submarine chasers being under way.

Two wonderful feats have already been accomplished in the national army. First is the teaching and training of 27,000 officers in the first officers' camp. Second is the building of large cities and cantonments. There are sixteen such cities, rising out of the soil. Towns of 40,000 require generations to grow. These contanments have sprung up in a few weeks, at one fort a standard barracks 34x140 feet, two stories high, was erected in one and one half hour.

A PATRIOTIC DUTY OF EVERY FARMER TO BUY A LIBERTY BOND

SUGAR BEETS

BEET TOP SILAGE

The siloing of beet tops means so much to our readers that we are trying to secure for them the best possible information on this subject. We give below an article by Mr. R. C. Kibbey of American Beet Sugar Co. We wrote Mr. Kibbey for this information and he says they are siloing practically all of the beet tops raised by the American Beet Sugar Company on their farms and thinks that this is the most economical way of using them. He also suggest that the results they had last year in feeding the beet tops silage was very satisfactory. Here is Mr. Kibbey's article:

As far as we know at present, there is no way in which greater profit can be realized from beet tops than by siloing them and feeding them during the winter to fattening cattle and young stock, dairy cows and sheep. In Germany and several of the older beet growing sections of Europe, this method has been successfully followed for a great many years.

The cost of siloing tops is comparatively slight, ranging under ordinary circumstances, from $1.25 to $2.00 per ton. This includes the initial cost of excavating the silo, the value of the tops, straw and salt used, and the cost of hauling to the silo and filling.

By siloing the tops, not only they themselves but also the straw is made very palatable to stock, and as this mixture comes out of the silo warm, cattle will eat it greedily. Practically none of the food value is lost and the fermenting process destroys the beet disease producing organisms, so there is no danger of infecting fields by spreading manure from cattle fed on this silage.

Location

The silo should be dug on some well drained spot, close to the feed lots, and the ground should slope away from it in all directions so that surface water will not run into the pit.

Construction

A satisfactory sized silo is one excavated to about 5 feet in depth, 8 to 12 feet in width at the bottom, the top width being just enough greater to give the sides whatever slant is required to prevent the earth from rolling back in while the silo is being dug The bottom should have sufficient slant to drain off well, if it is not porous.

Most of the excavation work can be done most economically with a slip. The two ends should be so graded that the wagons can be driven right through the silo.

Preparation of Tops

The best results are obtained by putting the tops in the silo promptly, not to exceed two days after they are topped. It is important to have the tops as free from dirt as possible, and care should be taken in picking up the tops to shake off all the dirt.

Filling the Silo

The essential point in preserving the tops is in thoroughly packing them, in order to effectively keep out the air. This is especially true of the edges where the tops come in contact with the walls, so that no air can enter from this quarter.

It is advisable to put a 4 inch layer of straw on the buttom of the silo, to keep the tops from coming in contact with the ground, and a slight sprinkling of straw can also be put on the sloping sides to keep the tops from coming in contact with the soil. On top of the layer of straw, place a 6 inch layer of beet tops, then about 3 inches of straw and so on, alternating the layers until the pile is about 3 or 4 feet above the ground. The palatability is improved by scattering salt over each layer of tops at the rate of 3 pounds of salt to the ton of tops.

General

In filling the silo, special care should be exercised to pack the tops and straw thoroughly to exclude the air. This may be done by the use of a horse, mules, or land roller. In filling the pit, the wagonload of tops or straw may be passed directly over the previous filling in the pit.

The silo need not all be filled at once, but extra layers can be added each day, care being taken to make a complete layer of the tops each day, and then putting on a layer of straw the same day. The filling may be continued during the whole topping season. The last layer on the silo should be straw, and on top of this about one foot of earth should be put, in order to weight down the contents and to exclude the air. No water should be put in the silo, as there is plenty of moisture in the tops.

From four to six weeks are required before the silage is in good condition.

A bunch of 135 steers was bought in Denver October 24th, at an average weight of 958 pounds, and was sold in Kansas City, a carload at a time, as fast as they were finished. The average feeding period was 115 days and the average daily gain for the entire period, from the time they were bought until they were sold at Kansas City, shrink included, was 2.3 pounds.

These cattle were first pastured on beet tops, then fed wet beet pulp, refuse molasses, alfalfa hay and cottonseed cake, increasing amount until December 16th, when put on a full feed of the following ration:

3 pounds cottoncake.
4 pounds refuse molasses.
25 pounds beet top silage.
60 pounds beet pulp.
10 pounds hay.

This ration is for a quick feed of about 100 days. The ration may be changed to suit feed available, increasing the beet top silage to 60 pounds.

Dirt Pit, Beet Top Silage

Green beet tops	95%
Straw	5%

Salt—3 pounds per ton tops.

Cost Per Ton of Silage

Value of beet tops at rate of $4 per acre	$ .80
Straw—at rate of $1.00 per ton	.10
Salt—3 pounds at 60 cents per cwt	.05
	.95
Hauling tops and filling silo	.70
Initial cost of Excavating Silo —per ton capacity	.10
	$1.75

Camparative Analyses

	Beet Top Silage	Corn Silage
Moisture	64.36	68.50
Ash	9.25	1.51
Crude Protein	2.87	3.12
Crude Fat	.44	.80
Crude Fiber	5.46	6.53
Nitrogen Free Extract	17.62	20.54

The results of feeding the beet top silage have ben excedingly satisfactory and economical, and a large amount of the tops grown in this locality will be used in this way during the coming season.

Supplementary Data

In estimating the amount of beet top silage furnished from one acre of beets, it can be calculated at approximately 35 per cent of the weight of the yield of beets.

A ten ton crop of beets will ordinarily furnish sufficient tops to make 3½ tons of cured silage. A very heavy yield of tops will make 5 or 6 tons of silage per acre.

One ton of green beet tops requires about 38 cubic feet silo capacity. If well packed, a silo 5 feet deep will settle from 8 inches to 12 inches.

One acre of good tops yielding 4 tons of silage will furnish 3 steers 25 pounds of silage per day for 107 days.

The housekeeper should be sure that her family has every day some food from each of the five principal groups, namely, fats, sugars, cereals, fruits and vegetables, and meat, milk, cheese, eggs, or legumes.

IMPORTANT TO BEET GROWERS

Mark Austin.

As the season was somewhat late for planting, our beets are naturally late in ripening, and our analysis of the beets show this to be the case. It is very important to the farmer and Sugar Company that the beets should not be harvested until they are ripe, because green beets are growing at this time of the year very rapidly, and if the soil and weather conditions are right, they should make about one ton per acre, per week. Beets that are ripe do not grow much after they become so, hence the necessity of the farmer being very careful to select the ripest part of the patch ordered harvested. All farmers know that on acount of the irregular application of water and the irregular soil the crops do not ripen evenly, and some parts are much riper than others. No farmer would think of cutting his grain before it is ripe, or before it was ready to cut, because he knows if he did, he would having nothing but straw, and there would be no weight to it. Sugar beets are no exception to the rule, and if they are harvested before they are ripe, they do not have tonnage or sugar, hence it is very great waste to both parties. Therefore, we desire to call this matter carefully to the attention of all farmers growing beets. The beets that ripen first are usually those that are planted first, except on land that is very rich which causes them to grow longer than otherwise. In other words where there is a good stand of beets and the foilage is medium and the color of the tops is a light green, they are usually riper than beets with a thin stand or where the tops are large and dark, which is an indication that they are still growing. This will be a guide to the farmer in selecting the part of the patch which has been ordered dug, on which he should start first.

Most of our farmers are familiar with these conditions, but suggestions along this line will no doubt be helpful, and especially this year, as the beets are quite late in maturing. We sincerely hope that the farmers will co-operate with us in this matter, in which we are mutually interested.

BARR TELLS BEET GROWERS HOW TO TREAT THEIR LAND

By R. M. Barr.

Fall plowing for sugar beets is very important and maximum results depend entirely upon it. It means from one to three tons of beets per acre increase over spring plowing and extra effort should be made by the grower to have all his beet land plowed before winter sets in.

The farmer who has so much work on hand that he cannot do this plowing can afford to pay $3.00 or $4.00 per day to have it done, as it will be returned to him over 100 per cent from his beet crop.

Grain stubble land should be thoroughly disced as soon as the grain is removed so that the stubble will be cut up and mixed with the surface soil before plowing. By this method a good compact seed bed can be easily made in the spring, and the heavy stubbles instead of being a detriment, are of material value to the crop. This land should be plowed from 8 to 12 inches deep, or rather depth of plowing should be regulated by previous plowings, and not more than 3 inches of new soil should be brought to the surface, as too much raw, new soil is detrimental to any crop.

Timothy and clover land should be handled very much in the same way. Discing before plowing is very necessary, as by cutting up the meadow, math gets well incorporated with soil, especially in heavy soils, the after math gets well incorporated with soil and decomposition sets in quickly in the spring and much benefit to the beet crop is the result. While if no discing or cutting of surface is done and this sod is turned into solid furrows, it takes two years

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"Frost Pockets"

By J. Cecil Alter.

Everyone is familiar with the streaks of alternate cool and warm air encountered while traveling over the country roads at night; the cooler regions are always the lower regions, that is, the smaller cup-like depressions in the topography a few rods or a mile or so in width; while the warmer places in the night air are over the higher and more dome-shaped lands.

These phenomena are most conspicuous on clear quiet nights in districts where the surface is rolling or slightly undulating. They are seldom noted on the broad sloping lands or the places in the path of nightly discharge of air from the principal mountain canyons.

The air over the higher lands only seems warmer by comparison; it is in fact losing heat continually by radiation, yet by reason of a peculiar effect of the cold, the warmer air tends to accumulate about the knolls, and the colder air tends quite definitely to accumulate in the pockets or lowlands which have little or no outlet.

The earth's surface, and especially vegetation stems and leaves radiate heat continually at a rapid rate into space and thus after sunset they lose heat rapidly, becoming cooler and cooler until the morning sun comes again. The surface air layers become cooler and denser (by shrinking), owing to contact with these objects as well as by their own radiation, and thus they remain close to the ground; or, if they are against a slope in the land, they will gradually be urged by gravity outward and downward over the cooler ground layers, and by a process of horizontal mingling or flowing they change places with warmer air over the depressions in the land. Then in turn other air in contact with the ground slope is urged outward and downward, continually adding to the quiet lake of cold air in the bottom of the swail.

This interchange of air continues all night, the air next to the ground becoming gradually cooler and cooler, the coolest or densest always occupying the lowest places, and because of gravity similar temperatures and densities tending to adjust themselves to uniform altitudes.

As the temperature continues to fall the dewpoint may finally be reached, that is the air may be cooled until its moisture appears as fog which forms in streaks or layers, or even uniformly over the entire depression or alley; or, since the air immediately in contact with the ground and its objects is much cooler the dewpoint may be reached only by the rapidly radiating egetation stems and leaves themselves, and moisture or dew is condensed upon them.

If as often happens the dewpoint at the vegetation surfaces (depending upon the amount of moisture in the air) be below the freezing point the deposit of moisture will be in the form of ice crystals or particles instead of dew, that is, frost is deposited; and, quite likely, if the foliage be green, its sap or juices will be frozen and it is "frost bitten."

The rate at which a plant or object radiates heat thus becomes a measure of its susceptibility to frost to a certain extent. For instance, a tall slender exposed branch of a potato or tomato vine exposed to free radiation on all sides, top and bottom, will lose heat more rapidly than a similar amount of foliage in contact with a mass of other foliage. Thus only the exposed parts of the plants in a field may be frosted by a 'light' frost. Also the newer growth are tenderer and more susceptible to frost than plants or parts that are nearing maturity.

The varying structures of plants make them more or less resistant to frost, and the variety of plants of the same species whether tall and branching, or low and compact, may govern the liability to frost damage from light deposits.

Moreover, other considerations enter into the problem of determining why certain well defined sections of an apparently level field of plants may be frosted and other uninjured. For instance a variant fertility due either to soil streaks or streaks of fertilization, or streaks that have been differently irrigated, or which have taken the water differently, all tending to produce a slight variation in the freshness or the amount of new growth in the plant. Also, some soils may absorb more heat in the daytime, and be warmer at the beginning of the night.

This lack of uniformity in frost deposits is only apparent as a rule in "light" or partial deposits, the heavy and killing frosts showing no such

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The Why of Loans To The Allies

By Leon Hardy, Economics Department, U. A. C.

Secretary McAdoo is recommending the issuance of $7,538,945,000 worth of 4% Federal Bonds, $4,000,000,000 of which will be loaned to the allies in addition to the $2,000,000,000 already lent to them. The question is often asked—why should our government lend money to the allies, how is it done and what would be the effect if it declined to do so?

When the allies went to war they reduced their export of goods with which they had paid for their imports and their imports increased to an enormous extent, mainly from this country. We in our town were exporting much more than we were importing. It was necessary that these goods should be paid for. According to the system then in force, the way to pay for them was either by shiping gold to this country or by selling in this country American securities held abroad. Both these methods were used. Gold was shipped here until it became a drug on the market, raising prices and inflating credit. Securities consisting of stocks and bonds of our railways and industrial concerns, a termendous quantity of which were owned abroad, were dumped into this country.

It was seen early in 1915 that the shipping of gold and the selling of securities was not sufficient. Our exports were exceeding our imports much more than could be taken care of by the digesting on our Stock markets of foreign owned securites. Some other means had to be found of paying for our exports or the allies would soon be compelled to limit their purchases. Then it was arranged that the purchases of the allies should be paid for by credits established in this country—in effect that we should lend the allies the money to pay for the goods we sold them,—lend them gold that was already in this country from the surplus that had accumulated by payments that had been made by them previously for other goods.

The establishing of credits in this country by the allies is an exactly similar case to that of a farmer who wished to buy a machine and not having the money went to the bank to borrow it. The amount being small and the farmer well known, the bank agreed to lend it to him on his note alone. The farmer signed the note promising to repay the loan with interest after a certain date and the banker credited the farmer's account with the amount of the note—he had established a credit to the amount of the loan. When the machinery was delivered the farmer drew a check on the bank, who paid the machinery salesman. Later however the farmer wished to buy an automobile. He went to the bank to borrow more money. This time however the banker refused to lend so large an amount without security so the farmer deposited with him stocks and bonds to the value of $120 for every $100 of the loan and agreed that if he did not repay the loan when due, the stock might be sold to recompense the banker and further agreed that if the stock depreciated in value more would be added to keep the value at the ratio of 120 to 100.

Later the farmer's house, which was uninsured, burned down. The farmer again turned to his bank for money to rebuild, but not being able to deposit more securities his application was unsuccessful. He then turned to his uncle Sam who was a builder and arranged with him to build the house for him. The builder arranged with the bank to lend his nephew the money for the house and, in case the nephew failed to repay the loan when due, he himself would be responsible for it.

The allies at first paid for their purchases with gold and by the selling of American stock and bonds in this country. When France and England found they were being drained of all their gold they approached the bankers of this country for a loan of $500,000,000 at 5% payable in 5 years on their joint note alone. This the bankers agreed to do. The Anglo French $500,000,000 5% external loan issued October 15th 1915 and due five years after that date was the first great loan of the war issued in this country. The amount was placed to the credit of the English and French governments in the bank of J. P. Morgan & Co. When the automobile manufactures, the farmers, and the amunition manufactors delivered their goods they were paid by checks on this bank. However after a few

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Utilizing Beet Tops and Leaves

J. A. Brock, Agricultural Editor of Facts About Sugar.

The value of sugar beet tops and leaves is an important factor in sugar beet cultivation which is being rapidly recognized by farmers throughout the United States. There are, however, a great many farmers, especially in the western states, who overlook or underestimate the actual value of these by-products to such an extent that they make practically no attempt to increase their net revenue from their beet crop by the proper utilization of these portions of the plant.

Wasteful Methods.

In many instances, which have come under the observation of the writer, no attempt was made to feed the tops and leaves, these portions of the plants being allowed to lie and rot on the field, without rendering other service than that of returning to the soil certain mineral elements which had been absorbed by the growing beet.

While it is true that these portions of the plant contain a certain amount of salts which are beneficial to the soil, it has been demonstrated that the practice of permitting them to rot on the field is neither efficient or economical.

Another wasteful method of beet top and leaf utilization is that of pasturing them. In other words, the practice of permitting the stock to enter the field after harvest for the purpose of consuming the tops and leaves. While it is true that this is the easiest way, it is by no means the most efficient and in addition to this, it is the most dangerous. Stockmen figure that two acres of beet tops and leaves, fed in this manner will feed a steer for 60 days and that he will gain about 130 pounds, providing he is able to consume all of the tops and leaves in the field. However, this is rarely possible owing to the fact that

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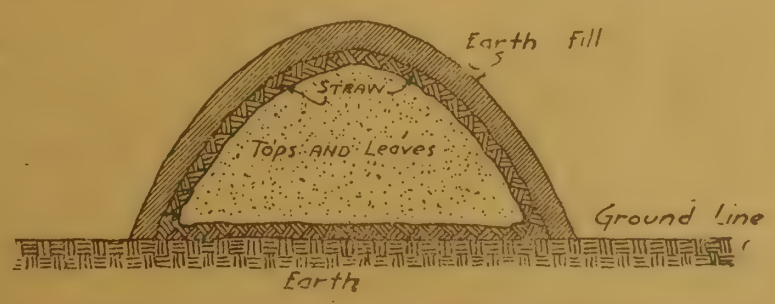


RICK-SILO OR TYPE NO. 1.

DAIRYING

MARKETING THE DAIRY PRODUCTS FROM THE FARMERS' STANDPOINT

Sterling E. Price.

Another market of increasing interest is that of cheese makin factories Farmers generally think this a poor market but when it is considered that Wisconsin has taken second place in the U. S. as a dairy state and that the greater portion of their milk is made into cheese, one can readily see that they who lead would not be in the business for small profits, then there is such small amounts of work for the farmer and he has the whey returned, worth half as much as his skim-milk. Moreover, when properly run, other reports show very good returns from cheese making. Portland Oregon has none too much milk yet Tillamack, an isolated Co. 100 miles west on the coast, has been making cheese exclusively for 12 years mostly in co-operative factories and for several years past the farmers have received more for butter fat every year than the dairy men around Portland, Oregon, who furnish milk for the city supply (State dairy and food commissioners report). It is further stated that Portland Oregon pays from 2 cents to 3 cents a pound more for butter fat than most other states of the union. This being the case, why need the farmer who is away from the city market look farther than his community for a first class dairy market.

The next channel that needs adjustment in the dairy market is that of the market milk or milk route. Too much cannot be said of the follies that are daily practiced in this trade. The old dipping system, though going out of use rapidly, is one of the most unsatisfactory ways of handling milk that can be conceived.

It is found that on an average such milk contains 3,623,333 bacteria per cubic centimeter as compared with bottle milk containing 416,000 per cc. Beside this there is a great loss from spilled milk and over measure. In addition to this it is found that 20 per cent of the bulk milk sold is adulterated. This we know is bad business for any farmer. That which is delivered in bottles of course is much cleaner and far more uniform but here again we find very discouraging practices. If the one handling the bottles is not well or bottles are delivered to families, members of which are ill or ailing, it is very likely to carry the disease from house to house unless every bottle is properly washed and sterilized before being put back into the wagon with the other milk to be delivered. The Montclair epidemic was traced to a man who came from N. Y. with typhoid fever and was receiving 3 pint bottles of milk daily. 28 cases were reported as coming from these bottles. 128 other epidemics of typhoid were traced to milk delivered in this manner. (Milk and its relation to the public health) It was of course due to carelessness and such men have lost a business which it will take a life time to regain. Then there comes the cost of delivery. It is estimated that in three of our leading cities drivers cross and travel the same territory so much that where an average of 4.5 miles should be required to deliver a quart of milk it takes 17 miles travel in some cases. Washington for instance is even higher, it being stated that in one instance 15 different deliveries went to one apartment house daily. This naturally increases the cost of delivery. L. D. H. Weld of the Minn. Expt. Sta. estimates the cost of delivery in Minneapolis and St. Paul to be 1.6 cents to 1.8 cents a quart, but the greater part of this is delivered by a few big concerns so that their delivery is less. Ben R. Eldridge of S. L. C .Utah states, "I have found that the cost of production (14 cents a gallon) was only about half the cost (26 cents a gallon) of placing the milk in the hands of the consumer." He of course furnished an A grade special market product. Several others in cities where for the main part the milk is delivered by the farmer himself or by many small retailers gave the cost on an average of 2.5 cents to 3 cents a quart to deliver it, or, it costs nearly as much for the delivery as the cost of production. This can be remedied only by co-operation and by all producing a standard grade of milk. This standardizing can be done by the farmer himself if he will follow a few simple formulae.

If he contracts to deliver 450 pounds of milk testing 4 per cent fat and his milk as it comes from the herd tests 4.3 per cent he can find the number of pounds of skim milk to be added by the following:

X equals (A multpilied by B divided by C) minus A in which

X equals pounds of skim milk to be added.

A equals pounds of original milk.

B equals the test of the original milk.

C equals the test desired.

Substituting we get X equals (450 multiplied by 4.3 divided by 4) minus 450 which equals 33.75 pounds.

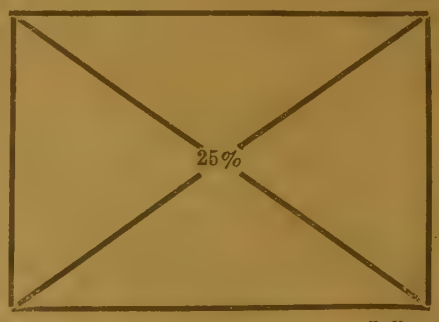
If he wishes to sell 450 pounds of milk testing 4.5 per cent fat when his original milk tests only 4 per cent the amount of skim milk to be extracted,

X equals A minus (A multiplied by B divided by C) in which X equal number of pounds of skim milk to be extracted and A B and C are the same as in the preceeding formula. Substituting we get X equals 450 minus (450 multiplied by 4 divided by 4.5) equals 50 pounds. The test of cream can be regulated the same.

Standardizing Milk and Cream.

When it is desired to standardize milk or cream by using milks or creams of different richness, the following method recommended by R. A Pearson is the simplest. Draw a square with two diagonals. At the left hand corners place the tests of the milks or creams to be mixed. In the center place the per cent of richness desired. At the right hand corners place the differences between the two numbers in line with these corners. The number at the upper right hand corner represents the number of pounds of milk or cream to use with the richness indicated in the upper right hand corner. Likewise, the number at the lower right hand corner represents the number of pounds of milk or cream to use with the richness indicated in the lower left hand corner:

30% 21.5% lbs.



3.5% 5 lbs.

For Example:—How many pounds of 30 per cent cream and 3.5 per cent milk are required to make 25 per cent cream?

21.5—the difference between 3.5 and 25, is the number of pounds of 30 per cent cream needed and 5, the difference between 25 and 30 is the number of pounds of 3.5 per cent milk needed.

Have the products superior in quality and advertise.

Under proper management of dairying it is proved beyond doubt that any of these markets will pay but each has its advantages and disadvantages. Let us dicuss these questions from a 100 pound of value in each case.

If 100 pounds of milk testing 4 per cent fat are sold at 3 cents per quart to a city retailer the farmer receives approximately $1.50 per cwt. of milk. It will make 42.3 pounds of butter which at 25 cents a pound is worth $1.17, the butter milk 15 pounds is worth 4 cents, and 80 pounds of skim milk at 20 cents making a total of $1.41 and making a great deal of work for the housewife. The same milk will make 2 gallons of 25 per cent cream which at $1.00 a gallon is worth $2.00 and the skim milk 84 cents @ 25 cents per cwt. equals 21 cents making a total of $2.21, but this must be delivered every day sweet, and we loose 5 per cent of the fertility of our product. If sold as milk at 7.5 cents a quart this 100 pounds of milk is worth $3.75 but here we have to consider equipment necessary to handle it properly, cost of delivery, bad bills, breakage, unpleasantness, etc., and we loose all the food and

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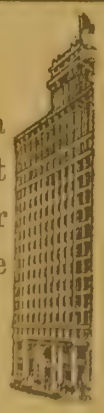

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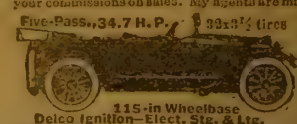

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fertilizer value of the skim milk. Next if we take the milk to a cheese factory when cheese is selling for 15 cents a pound the 10 pounds of cheese made from it will sell for $1.50. The 90 pounds of whey having ⅞ the value of skim milk will be worth 12 cents making a total of $1.65 and deducting 1.5 cents a pound for making 10 pounds of cheese leaves $1.47 per hundred for the milk. There is no delivery, no bottles to wash and we loose about 2-3 of the fertility and ½ the animal feed value of our milk. If the milk is sold to a condensery we receive from 28 cents to 40 cents a pound according to market demands for butter, for our butter fat, with an average of 34 cents making the 100 pounds of milk worth $1.36, and we loose all the fertility and food value of skim milk, but we have no delivery or care after the milk is placed on the milkstand. We get a weekly, semi-monthly, or monthly payment.

In order to consider these thoroughly they must be contrasted from all these points and each farmer must decide according to his own conditions. For example compare:

Cream gathering vs whole milk gathering. In favor of cream gathering. (1) It saves the cost of hauling the whole milk to and the skim milk from the creamery. (2) The farmers have a better quality of skim milk to use on the farm (3) It costs less for equipment of the creamery and labor in it, hence a higher price can be paid for the milk (4) more distant farmers can be reached to advantage and last, the difficulty of fair tests. Factors against cream gathering:

In favor of whole milk gathering are:—(1) Cream is often spoiled before reaching the factory and a poor product is made, a lower profit obtained and hence a lower price for milk, (2) there is an additional cost of equipment to the farmer. A creamery can equip for separating, testing, etc., much cheaper than can all the farmers who furnish the milk (3) there is additional work on the farm brought about by separating, washing the separator, etc., and (4) there are great difficulties in securing accurate and fair tests. Now, will the extra value of the skim milk from the creamery, the higher price, etc., pay for the extra equipment, work, etc., on the farm.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

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WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100	Butter Wrappers	$ .90
200	Butter Wrappers	1.25
500	Butter Wrappers	2.00
1,000	Butter Wrappers	3.00

Check or money order must accompany order.

STRAW HAS VALUE AS STOCK FEED

When Properly Fed With Alfalfa, Will Almost Replace Equal Weight of Hay.

With hay selling from $15.00 to $20.00 per ton, a greater use should be made of straw in fattening cattle. Where straw is fed with alfalfa hay to the extent of one-third the hay, the straw will almost replace an equal weight of alfalfa. Oat straw makes a good combination with corn silage for wintering breeding stock. A ration of 16.7 pounds of corn silage, 9.6 pounds oat straw, and 3.5 pounds clover hay, put on over 1 pound a day gain on beef steers at the Illinois station. Corn silage and straw are both cheap feeds and should be used as much as possible when hay is so high in price. The straw should not from the entire roughage ration for stock, but in judicious combinations may be made to show at least half the value of hay.—Chas. I. Bray.

FALL CLEAN-UP KILLS INSECTS AND DISEASES

If the remnants of old garden crops are destroyed immediately after harvest and weeds are kept down along fencerows, injuries by insects and diseases to vegetables next year will be materially lessened.

Collecting and burning such refuse in the fall kills off many insects and destroys their hibernating quarters. These crop residues may contain immature stages or eggs of some species of insects. Often great numbers may be killed by trap heaps of weeds, chips, hay and rubbish about the garden under which many insects will seek shelter. After they have thus congregated under a heap, set it on fire in late fall or early winter.

FIXES STANDARD SIZE CONTAINERS

Under the authority of the Federal law known as the Standard Container Act, the Secretary of Agriculture has just issued the regulations fixing the tolerances which will govern in the administration of that act. The act goes into effect on November 1, 1917.

It prescribes three standard sizes for "Climax" baskets for grapes and other fruits and vegetables—2-quarts, 4-quarts, and 12 quarts—and fixes the dimensions for each; it establishes the dry half pint, dry pint, dry quart and multiples of the dry quart as standards for containers for small fruits, berries, and vegetables, and fixes their capacity in cubic inches. On and after November 1, 1917, it is unlawful to manufacture or sell for shipment or to ship in interstate commerce, either empty or filled, baskets or containers that do not conform to the requirements set forth in the law. Containers which are not up to the standards can not be used in interstate commerce even though they are marked "short package."

Since a good deal of the harvesting and marketing season is still ahead before the law goes into effect, the department suggests that manufacturers adopt the standards at once, and that stocks of packages which can not be used after November 1 should be fully utlized before that date.

A CHILLY DAY

Little Willie from the mirror
Licked the mercury all off,
Thinking in his childish error,
It would cure the whooping cough.

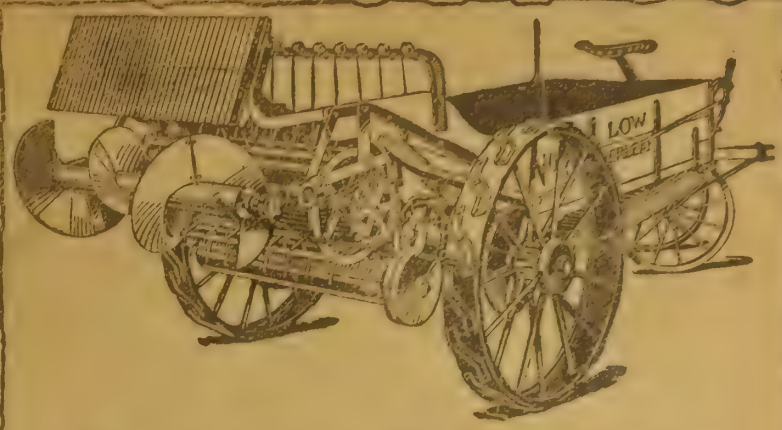
At the funeral, Willie's mother
Sadly said to Mrs. Brown:
"'Twas a chilly day for Willie
When the mercury went down."

The sows must have exercise. They must not be confined to small pens. They must have room to move about, and they should go out in a sheltered yard on fine days.

HE'S LEFT

Officer to the darky—"Here! Where are you going?"

"I ain't goin', suh," panted the darkey. "I'se gone."



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WE have added the **New No. 8** Spreader—Spiral Wide Spread, Light Draft—to the **Low Corn King** and **Low Cloverleaf** lines. We are in a position to suit exactly any regular farmer, whatever his previous spreader experience may have been.

Grasp an opportunity to study the features of the No. 8, the spreader for every average farm, the lightest draft spreader made. No. 8 has the famous International spiral wide spread that has thoroughly demonstrated its success as a wide-spreader for all-around use. In addition, the **Low Corn King** and **Low Cloverleaf** lines provide you with your choice of larger capacity spreaders, with the regular disk-wide-spread (well-known wherever spreaders are sold) or with the spiral spread on special order.

The **New No. 8** Spiral Wide Spreader and other **Low Corn King** and **Low Cloverleaf** Spreaders will go onto thousands of farms before the close of the year. They are all light-draft, low-loading, easy-handling, built of steel—and satisfactory. We have an idea one of them would stand a good chance of going onto your farm if you were fully posted. At any rate it will pay you to write us for catalogues. Write the address below.

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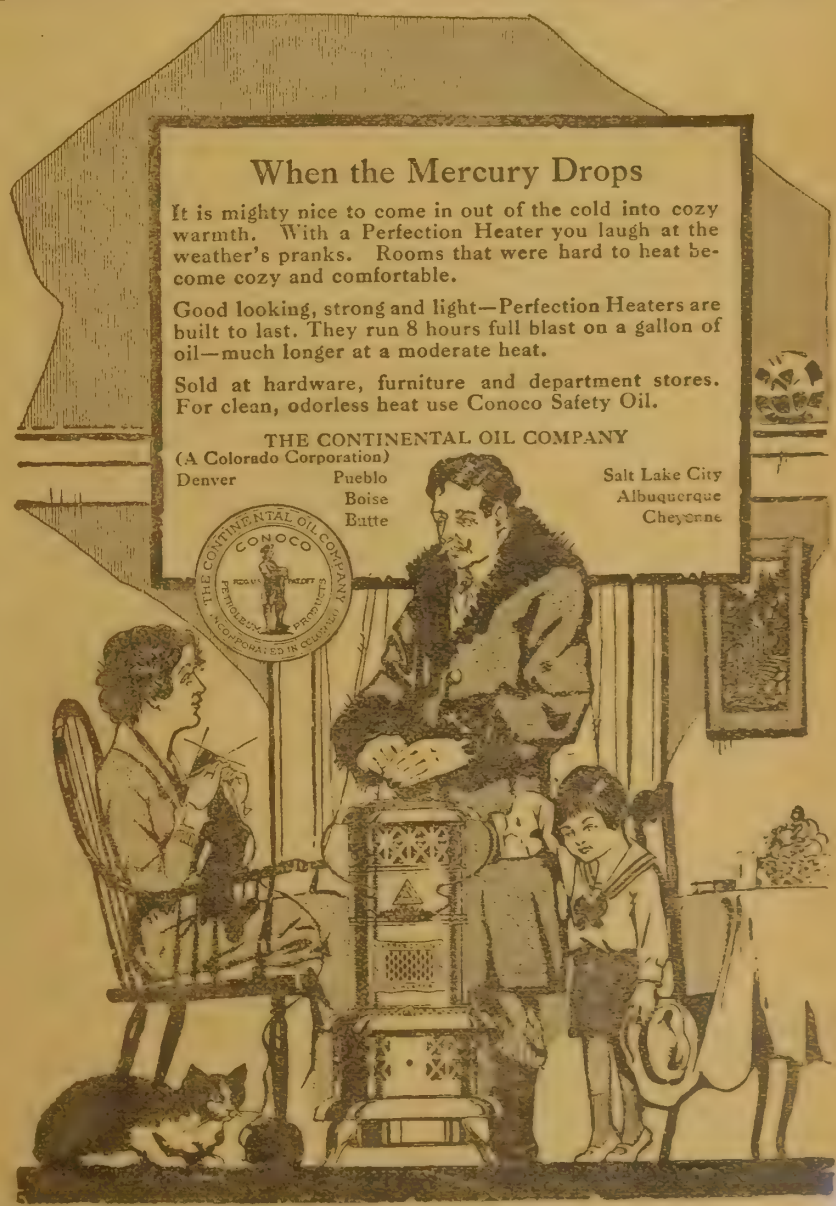


IT WOULD BE HANDY

Husband—"But we're living beyond our means."

Wife—(Who has been reading about the war)—"But can't we issue bonds?"

POULTRY

DEMAND FOR GUINEAS ON INCREASE

Prices of 75 cents to $1.50 a pair at Eastern markets should increase popularity of this fowl among farmers. Guinea fowls, which have suffered unpopularity with farmers because of pronounced propensities for noise making during the sleeping hours of humans, are likely to rise above this objection in view of a steadily increasing demand for their delicious flesh. With eastern markets offering 75 cents to $1.50 a pair for these fowls, guinea raising now is a profitable side line on eastern farms, and may offer opportunities to the commercial poultryman in a few cases.

The increasing demand for guineas, comes from hotels and restaurants in the large cities, which are always eager to buy prim young stock. These they particularly like to use a delicacy in banquets and club dinners, guineas being a good subtsitute for game birds such as grouse, partridge, quail, and pheasant. The present supply comes largely from small farm flocks of 10 to 20 fowls. Such flocks require little care and expense to raise; consequently the marketing price is largely profit.

And as for the undesirable cry of the guinea, it is a rather objectionable habit, but might often be listed as an asset. It gives warning of marauders in the poultry yard and also, backed by a pugmacious disposition, constitutes an effective show of fight against hawks and other enemies. In fact, some farmers raise a few guineas with their turkeys and allow them to roost together so that a warning will be given if any theft is attempted during the night.

Guinea raisers who are near the large eastern markets or who have developed a trade among private customers are now receiving prices that make this industry very profitable. One poultryman near a summer resort has raised as many as 400 guineas in one season, selling them in August when they weighed about 1 pound each at $1.25 a pair. Wholesale prices in New York usually range from 75 cents to $1.00 a pair for dressed spring guineas weighing 2 pounds to the pair, and from $1.25 to $1.50 a pair for those weighing 3 to 4 pounds to the pair. Old guineas are not wanted and seldom bring more than 50 or 60 cents a pair.

Of the three varieties of guinea fowl—Pearl, White, and Lavender—Pearl is by far the most popular. It has a purplish gray plumage regularly dotted or "pearled" with white and is so handsome that frequently the feathers are used for ornamental purposes. Breeding stock of the various varieties usually sells for $2 to $3.50 a pair, or from $3 to $5 a trio. Eggs from pure-bred birds for hatching can be obtained for 75 cents to $1.00 for 15. During the last few years a limited market for guinea eggs has developed among commercial hatcheries which have an outlet for a few day-old guinea chicks along with their ordinary chicks, ducklings, goslings, and turkey poults. While guineas can be kept in the best condition upon free range, they can be confined if necessary and satisfactory results obtained.

The marketing season for guinea fowls is during the latter part of the summer and throughout the fall. At this time the demand in the city markets is for young birds weighing from 1 to 2 pounds each. At about 2½ months of age guineas weigh from 1 to 1½ pounds, and at this size they begin reaching the markets in August. As the season advances the demand is for heavier birds.

The usual practice in marketing game birds is to place them on the market unplucked, and in most markets guineas are sold in this way. They are more attractive with the feathers on and sell more readily. When dressed the small size and dark color of the guinea are likely to prejudice the prospective customer, who may be unfamiliar with the bird's excellent eating qualities. For hotel and restaurant trade, however, guineas should be dressed in the same way as common fowl. Before shipping any birds to a market, it is advisable to inquire of the dealer to whom they are to be shipped whether the feathers should be removed.

If the guineas are to be marketed with the feathers on, all that should be done is to bleed them by severing the vein in the roof of the mouth, allowing them to hang head downward until bleeding is complete. If the feathers are to be removed, this should be done by dry picking. The vein in the roof of the mouth is severed first to insure thorough bleeding, and the knife then thrust through the groove in the roof of the mouth into the brain. When the brain is pierced the feathers are loosened by a convulsive movement of the muscles and can be removed easily.

FACTS ABOUT HENS AND EGGS

Michael K. Boyer, Hammonton, N. J.

While heavy laying is, as a rule, desirable, phenominal egg records are not a guarantee of strong, rugged off-spring. There must be a limit.

The hen that lays 150 eggs in a year is doing mighty good laying, and she is not so apt to break down early in life as is the one which is trying to "break the record."

Pullets and yearling hens that have done such remarkable work in their first season, are not so apt to do heavy work in the second year.

As a rule, hens that lay steadily during cold weather as indifferent hot weather layers.

Extreme cold and extreme hot weather affect hens alike.

The regular layers give the best sized eggs, while the spasmodic layer generally produces an assortment of sizes.

The size of the egg becomes smaller as the hen increases the number of her product. So also does the color gradually changed from a dark to a light color towards the close of the litter.

The majority of eggs are laid between the hours of 9 o'clock in the morning and 3 o'clock in the afternoon.

There is not very strong fertility in the eggs laid by a hen that will produce from 30 to 50 eggs in succession.

Pullets that delay laying until February are not profitable birds to keep. Those that start in November or early December are the ones to be relied upon for winter laying. On a large egg farm near my home it is a rule that all pullets that have failed to lay an egg by New Year's Day, are killed and sent to market.

An egg laid in November and December will bring twice as much money as the one laid in March or April.

There is no such thing as an egg-laying type. There is but one true test of the layers, and that is by the aid of trap nests.

Hens forced for egg production by high feeding and stimulants, may give the desired number of eggs, but the future generations will show the effect in weak constitutions. Pure food judiciously given is the only material the hardy, working hen needs.

Provide good, comfortable houses, keep them clean and in a good sanitary condition, and there will be no trouble about winter eggs, provided, of course the fowls are kept strong and vigorous. They must have regular care, and the food must be of the purest kind. Egg growing rests not solely with the hen—much depends upon the man in charge.

In handling a goose, it should always be taken by the neck, and when lifted from the ground the body should be turned with the back toward the person handling it. In that position it cannot strike, and will remain quiet. Partly support the body by seizing the first joint of the wing with one hand. If the goose is held facing one, it will strike hard blows with its wings or scratch with its feet.

It becomes quite a study to keep pullets laying regularly. System in feeding has much to do with it. When pullets begin to lay they seem quite uncertain. Some will lay regularly every other day, and some only twice a week. Moving layers from coop to coop simply upsets their habits, and they begin all over again to study the new situation, and during this time they usually stop laying.

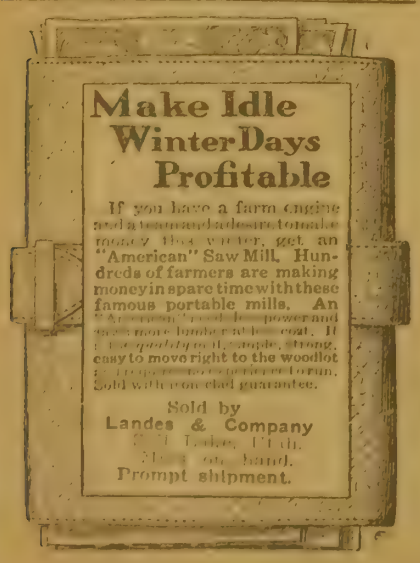
According to a large number of analysis made of American eggs at the various agricultural stations, an egg on an average weighs two ounces, and has the following percentage of compositions; shell, 10.5; water, 6.6; fat, 9.3; and ash, 0.9. A side of beef contains on an average about the same percentage of protein but a larger percentage of fat. Eggs belong to the nitrogenous group of foods, and would naturally and quite properly be combined in the diet with material supplying carbohydrates (sugar and starch) such as cereals, potatoes, etc.

It is said that a plan for supplying the public with fresh eggs is being tried in Germany in the hope that it will increase the demand for a strictly fresh article. Egg depots are established in the principal cities at which the quality and freshness of the eggs are guaranteed. For every bad egg the purchaser is entitled to get fifteen good ones. Every poultryman has to mark all eggs which he sends to one of these depots, in such a way that they can be traced back to him, and if it is found that he furnished bad eggs as fresh ones, he will not be allowed to sell to the depot.

The hardest task in maintaining a constand and continuous egg yield is to keep the laying stock in prime condition, says Col. E. O. Rosessel. This means such a condition of perfect health that the eggs will not only be laid regularly, but that they will be uniform in size, according to the breed laying them. Under such conditions we should have large eggs from Minorcas, White, and Buff Leghorns, Plymouth Rocks and Brahmas. When such breeds lay small eggs, abnormally large eggs, with perhaps double yolks, or soft-shelled eggs, the stock is out of condition and usually overfat. The eggs will thus be laid irregularly, and many times laying will stop entirely. Layers should be kept active, and activity is induced by short feeding. A hungry hen is usually a good layer.

It is hard to fatten a stunted chicken.

Poultry commission merchants say that one reason why a great many



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For cream separators, it's doubtful if there is another oil made which will lubricate as efficiently as

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It leaves no sediment or gummy deposit. May be used for hand or power driven machines. Practically all dairymen prefer Jersey Separator Oil. Ask for it at your dealers.

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WOLVES—the Highest Prices Paid in History.
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Order Your Stock Feed Today

Sunripe Stock Feed is a scientifically balanced, highly nutritious mixture of oats, barley, cottonseed meal and beet sugar molasses.

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Order a few sacks of "Sunripe" from your dealer. If he is not ready to supply you, write direct to Utah Cereal Food Company, Ogden, Utah, giving name of dealer.

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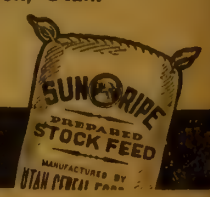


shippers are disappointed in the prices they receive on good poultry is that they persist in shipping stock of sizes which are not in demand.

There is always a good market for good stock, so it pays to keep in the front ranks. The market is never overstocked with good goods.

For the city market there is nothing between the broiler and the roaster.

Fall chickens find a good market as roasters during January, February and March.

New York will take poultry either scalded or dry-picked. Boston wants only dry-picked stock. Chicago wants, for its own trade, only scalded stock in chickens, duck and geese, but prefers turkeys dry-picked.

The price is not fixed by the commisison merchant. He can only obtain what his customers will pay. When the market is well supplied the customers have a larger stock from which to select, and they always choose the best, leaving the second-class stock to be sold at hazardous prices.

The most important egg foods—mixed with exercise—are grit, bran, charcoal, cornmeal, middlings, pure water, clover or alfalfa hay, vegetables, green cut bone, cracked oyster shell, ground oats, scalded oats, sprouted oats, linseed meal, meat scrap or meat meal.

Study conditions. Don't feed too rich a mash. Feed according to appetites. Active fowls are always hungry. It is just as important how you feed as what you feed. Wholesome food is always a source of economy. A very important point in feeding poultry for market is to feed regularly.

Some poultrymen do not believe in cutting a fowl's wings by clipping off the quills, as it makes them look unsightly. Instead they spread out the wing and cut the feather portion from the quill. This leaves bear quills, and when the wing is closed it rarely shows that the wing has been tampered with. Only one wing is thus cut.

Frozen eggs are sold by weight, and are in demand in cities with the large bakers and cracker makers. In certain classes of restaurants frozen eggs are used for scrambled eggs and omelets.

In testing eggs by lamplight the object is to discern the size of the air space in the egg. When the egg is perfectly fresh, the space is very small and can just be seen at the broad end. Each day this space increases in size, and when it becomes very large the egg is ranked second-class. Cloudy eggs, or those which rattle, are suitable only for cheap cookery or manufacturing purposes.

A very successful egg farmer once said that in winter he always had something in his coops for his hens to pick at—scattered grain, a cabbage hanging up, and even bones with a litle meat on them, always something to find in order that his flock should not contract lazy habits. In this he was humoring the natural instinct of the animal. A hen let run at large is almost always hunting, picking and scratching—first at a blade of grass then a bug, then a worm, and next a seed.

Experiments have proved that yarded hens are more prolific layers than those allowed free range. It costs more to keep them, but the returns in eggs are larger. Yarded hens are fed on food that will make eggs, and maturally this food is converted into the object for which it is intended. On the other hand, the same food fed to fowls that are on a range, is more apt to go to the making of flesh—bone and muscle—rather than to the making of eggs.

There is very little difference in weight of chicks of any of the breds as compared with the others, for the first six weeks. This is so even in comparing the weight of Leghorn chicks with Brahma chicks. There is a gradual increase, however, after that time, although not so very much until after eight weeks of age. Naturally, from then on the heavier breed chicks show the greatest gain.

GLEANING DAYS TO COME AGAIN

All possibly have heard or read of the story of Ruth and her gleaning wheat in the fields of Boaz, the kind-hearted husbandman in days of old. Possibly many of our pioneers, now old and gray, remember only too well the conditions necessitating their gleaning in the fields of those who had plenty, but none to waste, so that all who came "within their gates" might not suffer from hunger or at least for want of bread.

The same crying need now comes to us from the war-stricken fields of Europe. Our wheat crop is short, yet the starving millions abroad and at home must be fed. Utah's food conservator, W. W. Armstrong, suggests that all children be urged to glean the grain fields, as was done in the early days. Going over harvested fields, much grain is found to be going to waste for want of proper pasturage facilities, and the owners of these fields express a hearty willingness to have children or adults glean that which otherwise might go to waste. Prices for wheat and flour will undoubtedly be high. Even now we hear of people going into wheat fields to glean, saving wastes which net them $1.50 per day. With such prevailing conditions would it not be wise and prudent for some of our organizations to institute a move which will place all available children with competent and responsible leadership into this activity—a living lesson for true citizenship, by way of self-support, saving waste, and performing a duty to those who stand in greater need than those who are so fortunate as to have plenty.

We likewise have numerous calls coming for alfalfa and clover seed. Along ditch banks, fences, and waste places, are large quantities of these seeds that will be wasted unless gathered by gleaners. Here again is an excellent source of revenue for children willing to work. When an awkward man can get $5.00 a day in gathering these seeds in waste places, as has been done lesewhere, surely no further argument is necessary to show the necessity of preventing these waste.—Vernal Express.

"FROST POCKETS"

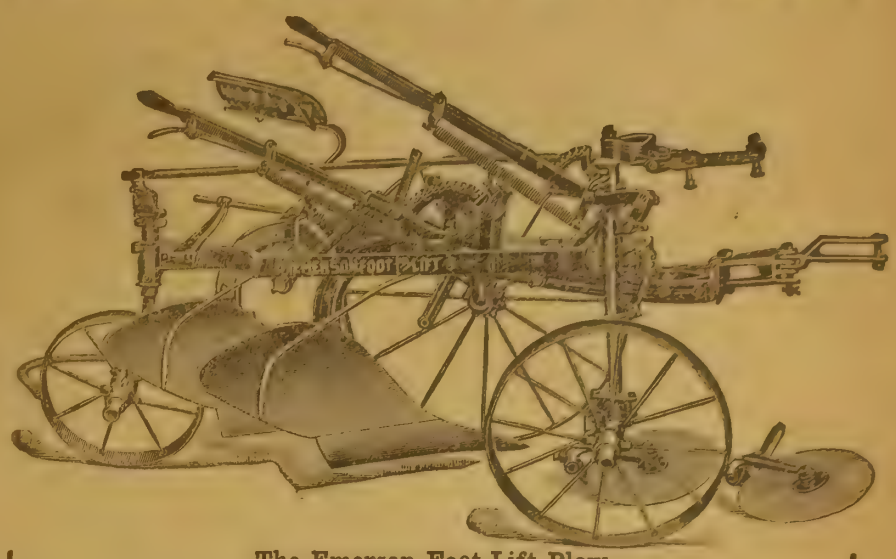
(Continued from page 3)

variations. The heavier the deposit in the low places the farther up the slope will the heavy and light frosts be observed.

Thus we find the lowlands best adapted to growing the hardier and early maturing vegetables and field crops, while the slopes and bench lands offer the best temperature exposures for vine, bush and tree fruits. In fact it has been observed locally on the Wasatch slope immediately to the south of Salt Lake City that berries will reach the springtime blossoming stage about two weeks earlier on the top-of-the-slope or the bench lands than a few miles down the slope, 200 feet lower in altitude. That is, this accumulation of cool air on the valley floor at night retards the general advance of the spring season, the amount of the retardation being approximately one day for each fourteen feet difference in altitude in general. Also the first killing frost in autumn usually occurs from two to four weeks earlier on the bottom lands than on the higher slope and bench lands.

On cloudy nights, or nights when the air is particularly moist, the difference in temperature between the lowlands and the high lands is much less, if not almost entirely absent, the frost pockets being in evidence only when the cloud or moisture blankets are rolled back and leave the open sky into which the day's heat is radiated freely.

Emerson Foot-Lift Plow



The Emerson Foot-Lift Plow

Both levers on the Emerson Foot-Lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the Plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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Maximum Pull—No Side Draft

The Parrett pulls same as horses—direct on the draw-bar. No lost power. Implements always under control of one man. This is one feature which makes the Parrett the superior light weight tractor.

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imitated but not equalled. Operates on gasoline or kerosene for all field, belt or road work. Your inquiry will bring full details about this all purpose tractor.

Parrett Tractor Co., 414 Fisher Bldg., Chicago, Ill.

Telluride Motor Co., Provo, Utah

PRESSURE IN TIRES

There is a more or less general impression that blowouts are liable to be caused by expansion of air in hot weather. Of course, some expansion occurs, but the accompanying pressure is not sufficient to be of serious consequence. The number of pounds increase in pressure is less than one-third the number of degres increase in temperature. In other words, when the temperature of air in a tire rises 10 degrees the pressure is increased about thre pounds.

A fixed rule for the inflation of tires can not be given owing to the fact that the same results are not experienced from the same degree of pressure under all conditions. The road conditions, speed, power, weight of machine and its load are some of the factors which have a direct bearing upon the inflation which will be most satisfactory.

The following simple formula is suggested by a tire manufacturer as a means of determining approximately the correct pressure. "For front tires multiply the width across tire by 15 to 18. A four-inch tire for example requires 60 to 72 pounds (4x15 equals 60). (4x18 equals 72.) For rear tires multply by from 15 to 20 pounds instead of 15 to 18 pounds."

A good method is to pump up the tires in accordance with the formula and then, if necessary, reduce the pressure slightly until they do not cause excessive vibration to the car and there is not too great slippage of the rear wheels. Make a record o the pressure at this point and keep the tires at this pressure except when conditions are such as to make a change advantageous.

HOME

CAUTIONS TO HOME CANNERS

By O. H. Benson, United States Department of Agriculture.

Professor J. C. Hogenson of the Extension Division of the Utah Agricultural College, is in receipt of a special set of home canning instructions prepared by O. H. Benson, of the United States Department of Agriculture. These instructions should be followed very carefully by all home canners if entire success is to be insured. They are as follows:

1. In beginning home canning work take time to study fully the instructions in Farmers' Bulletin 839, Home Canning by the One-Period Cold-Pack Method. Club members should use NR circulars on home canning work, or the special instructions in home canning sent out by the State Colleges of agriculture. Follow but one set of instructions. If you combine two it will lead you into difficulties and cause the loss of food products.

2. The instructions in Farmers' Bulletin 839 are based on the use of fresh, firm, sound, ripe products. When canning vegetables which have stood in the market place over 24 hours increase the time of sterilization as given in this bulletin about 20 per cent.

3. Do not begin canning large amounts. First, try out a few packs thoroughly and determine for yourself whether you understand the instructions and can follow them.

4. Use good rubbers. Most of the rubbers which are furnished with glass jars will not stand the boiling required for the steriliation of vegetables in hot water, steam, or steam under pressure, and might better be discarded and good rubbers procured.

Description of Good Rubber Rings: Rubber rings for the average standard pint and quart jars, etc.—should be 5-16 of an inch wide. They should be cut 12 to the inch, that is, 12 rubber rings placed one upon the other will measure one inch in thickness. They should stand up under sterilidation in boiling water or in steam under pressure for at least three hours without injury to the rubber. Good rubbers will stretch and return promptly to place without changing the inside diameter. They should be reasonably firm and able to stand abrupt bending without breakage. This description does not apply to rings for the special types of jars on the market.

5. Reports during the past 5 years indicate that 75% of the spoilage of food products in home canning is due to the use of poor rubbers, old Mason tops, and defective joints, springs, and caps.

6. Success in home canning by the one-period cold-pack method depends upon a full understanding of the entire process. Observe especially that green vegetables should be blanched in live steam, tubers, in hot water for not less than 5 minutes. Then dip them quickly in cold water. Pack at once in hot sterile jars and add boiling water. All greens, pod vegetables, green peppers, etc., should be blanched in live steam rather than water. Take time to pack all food products well into hot glass jars. A little salt or sugar should be added immediately, rubbers and tops put in place, and the jars partially sealed. These steps, if properly and quickly taken, have largely to do with the success of the method. The final success rests of course, with the sterilization. Food products should be sterilized for the period given in Farmers' Bulletin 839. Read carefully all instructions with reference to the handling of pressure canners to avoid exhausting of liquids, syrups, etc. When canning in territory with a altitude of over 100 feet increase the time given in the tables from 5 to 10 per cent for each additional 500 feet in altitude. Do this without fail or some of the products will be lost.

7. In canning fruit the syrup should be prepared in a separate vessel and poured over the fresh fruit, in the hot jar. Some food products with high acid content, like cherries and plums, shrivel and shrink too much if a heavy syrup is used.

8. The flavor of sweet corn and peas canned for home use is greatly improved by the addition of sugar instead of salt.

9. In canning tomatoes be sure to scald until the skins crack, dip in cold water, then cut the cores out, remove skins, and pack at once into hot glass jars. Use a wooden spoon for packing purposes and pack carefully. A well-ripened tomato may be placed at the top and pressed down to fill all crevices. Allow a level teaspoonful of salt to the quart. Wipe off the joints before the rubber rings are placed in position. Then place the rubber rings and caps in poistion, partially tighten the tops, and sterilize.

10. "Flat sour," which develops in canned vegetables, especilaly with greens, asparagus, peas, and sweet corn, is caused by insufficient sterilization, by canning old, deteriorated food products, or by improper blanching and cold-dipping.

11. Blanching and cold dipping all vegetables before packing, if properly done, will not in any way injure the character and quality of the product. On the other hand, it will remove dirt and bacteria and materially aid the sterilizing process. These preliminary steps will also make it unnecessary in tin canning, to exhaust the products.

—o—

HOMEMADE FRUIT BUTTERS

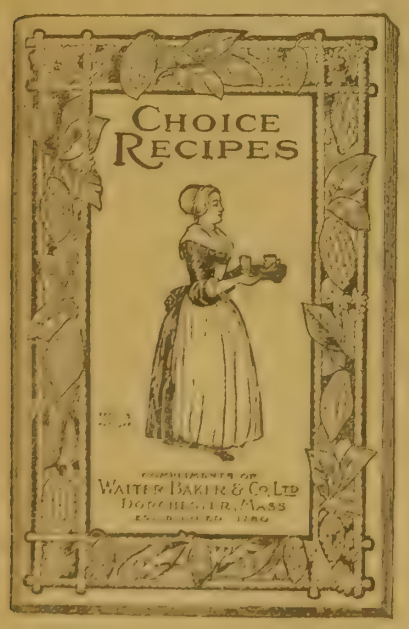
It is recommended not only to those who grow the fruit, but to those in the city who may take advantage of large supplies and cheap prices that they make homemade fruit butters. In a great many cases it will be possible for city people to get from outlying farms fruit which might otherwise be wasted.

Various fruit butters recommended are apple butter with cider, apple butter without cider, apple butter with grape juice, apple butter with lemons, pear butter, peach butter, plum butter, and Garfield butter made with plums and peaches. With the exception of a good preserving kettle very little equipment is needed for the preparation of such butters.

Apple Butter.

There is no better way to use good apples, says the department, than to make them into butter. The sound portions of windfalls, wormy, and bruised apples may also be used. The better the apple the better the butter will be. In apple butter with cider

SENT FREE



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and receive a copy of this little booklet, containing more than 150 recipes for the use of

BAKER'S COCOA AND CHOCOLATE

in the preparation of delicious drinks, dainty dishes and home-made candy.

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No Chance For Spoiling

Fruits, preserves and jellies simply cannot spoil if you seal the jars and glasses with Parowax.

When the cap is on, just dip the top of the jar in Parowax. To seal jelly pour Parowax in the top of the glass. What could be easier?

Parowax keeps out air. Prevents fermentation and mould.

Parowax is guaranteed under the Pure Food and Drugs Act. In handy one pound packages from all grocers and druggists.

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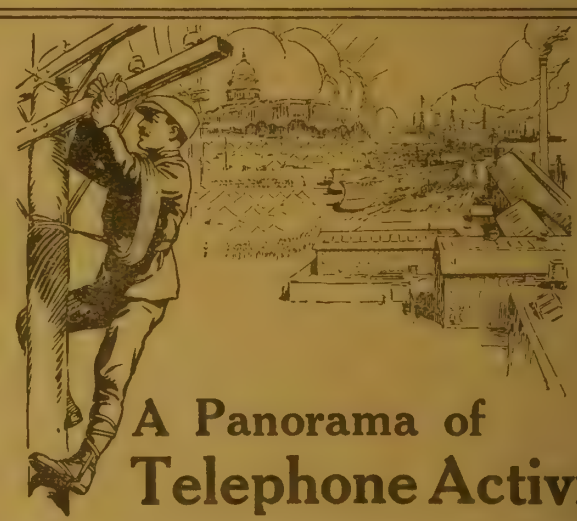

A Panorama of Telephone Activity

A bird's-eye view of this country today would show a panorama of countless military and industrial activities.

Here the smoke of a thousand stacks obscures the view of arsenal, steel and iron works and innumerable factories.

There the sun's rays flash upon thousands of glittering bayonets and rise and set on many new and strange looking cities—the mobilization camps of the armies of the Republic, or gild the wings of swift aeroplanes gliding to and fro in bird-like flight over broad aviation fields.

The National Capitol would be seen, from which all these vast enterprises are directed and co-ordinated, with hundreds of telephone lines radiating from it to all parts of the country, and linking it to each military and industrial center.

A veritable maze of other telehpone pole lines, covering the whole country with a net-work of wires, would be visible, connecting city, town, camp, fortification, navy yards, military headquarters, coast-guard stations, and light-houses.

Everywhere busy groups of telephone workers would be disclosed erecting poles and stringing wires to meet new and extraordinary demands for service. All this telephone activity is but a part of the vast work the Bell System is doing.

Join us in this patriotic service, by remembering that the more careful you are to make only telephone calls that are necessary and to confine your talks as much as possible, to the less busy hours of the day, the better we can meet the needs of the Nation.

The Mountain States Telephone and Telegraph Company

either fresh sweet cider, or commercial sterilized cider should be used, after being boiled down to about half its original quantity. The peeled and sliced apples may be cooked in the boiled cider or they may be first made into apple sauce which is then cooked in cider. It usually takes about equal quantities of sweet cider and sliced apples to make butter of the right consistency. In other words, 2 gallons of sweet cider should be boiled down to 1 gallon, and 2 gallons of the prepared apples should be added to it either uncooked or as apple sauce. The two essentials of good apple butter are long, slow cooking—from 4 to 6 hours—and frequent stirring. If sugar is used, it should be added after the cooking is about two-thirds done. About 1 pound of sugar is the usual proportion for each gallon of apple butter but more or less may be used to suit the taste. The butter may be spiced with cinnamon, cloves and allspice, or with any one of the three, the spices being stirred in when the cooking is finished.

While still boiling hot the butter should be packed in sterilized glass receptacles, or in stone jars, with thorough precautions against spoiling as with any other preserves.

Without Cider.

Good apple butter may be made without cider. In this case enough water is added to make a thin apple sauce. Brown sugar rather than white sugar is ordinarily used. If a grape flavor is desired, it may be obtained by the use of grape juice in the proportion of 1 pound to each gallon of the peeled and sliced apple. There should also be added a cup of brown sugar and ¼ teaspoonful salt. When the desired thickness is obtained, 1 teaspoonful cinnamon is stirred in.

Pear butter is made like apple butter without the cider.

In making peach butter it is desirable to put the peaches into a wire basket and dip them in boiling water for a few seconds until the skin slips, then dip the peaches into cold water, peel them, and pit them. Well-ripened free-stone peaches are best. They should be mashed and cooked in their own juice without adding water, and if butter of a fine texture is wanted the pulp should be put through a colander or coarse wire sieve. To each measure of pulp add a half measure of sugar. Peach butter can be made also from dried or canned peaches. Lemon juice in the proportion of 1 lemon to 15 pounds of peaches may be added to give tartness.

Plum butter is made like peach butter except that the skins and pits are separated by rubbing the pulp through a colander or wire sieve after the plums have been cooked. Free-stone plums, however, may be treated exactly like peaches.

The Garfield butter is made of two-thirds plums and one-third peaches and needs rather more sugar than the plain peach butter.

COMMUNITY MARKETING REDUCES EGG LOSSES

Big percentage of $600,000,000 egg crop now lost may be saved through organization of egg circles. If farmers would realize that the annual value of the country's egg crop is equal to the average value of its annual wheat crop—approximately $600,000,000— and that nearly 8 per cent of the eggs marketed are lost through spoilage or breakage, the industry undoubtedly would be put on a more businesslike basis. Improper handling between the farm and the market, is responsible for a large part of the loss. This loss, it is suggested, could be greatly decreased if farmers would co-operate more generally and market their eggs through community egg circles. These organizatinos take care of the frequent collection and the proper packing and marketing of the eggs of members, attend to accounting and making collections, establish standards, encourage the raising of better breeds of poultry, the use of improved methods, and the production of infertile eggs.

REMOVE THOSE STAINS

One of the first requisites in removing stains, is to know the kind of fabric which is spotted and, if possible, the nature of the stain. Some stain removers which will give admirable results on cotton or linen may, if applied to woolen or silk, remove pieces of the fabric as well as the stain. Likewise, stain removers which are entirely satisfactory for cleaning silk or woolen materials cannot always be used for removing stains from vegetable fibres, such as cotton or linen. Similarly, treatment which will remove some stains immediately will cause those of a different nature to take firmer hold on the fabric.

The second cardinal principle is spot removal is to work while the stain is fresh. Cold or lukewarm water is usually the housewife's best bet for a first step, if the nature of the stain is not known and if the fabric is not injured by water. Hot water should not be used until it is determined that the staining material is such that it will not be "set" by heat. Stains from meat juice, blood, egg, milk, and other materials containing protein are set by hot water.

If stains are of such a nature that they will not yield to laundering or sponging with water or with water and soap, it is necessary to use one or more of a number of chemicals. Besides water and soap the substance most useful in removing stains, Javelle water, potassium permanganate solution, oxalic acid solution, ammonia water, carbon tetrachlorid, French chalk, and cream of tartar, each of which may be used successfully provided the right one is used at the right time. Detailed instructions for treating various stains are contained in Farmers' Bulletin 861, and may be had free so long as the supply lasts, on application to the United States Department of Agriculture, Washington, D. C.

ECONOMICAL

Wife to husband—"Can you let me have a little money, James?"

Husband — "Certainly, my dear. About how little?"

Grape Jelly

is the favorite "after-school" dessert. Spread it thick on big slices of nutritious bread and butter for the boys and girls when they get home from school.

The sugar in jelly is a great energy food, so necessary for growing children.

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

is unsurpassed for making jelly and preserves. Made from sugar beets, raised by Utah and Idaho farmers. At your grocer's in 10, 25, 50 and 100 pound bags.

"Buy it by the Bag."

Made by
Utah-Idaho Sugar Company

DITCHES

Make the New and Clean the Old—irrigation or drain, grade roads, build dykes—in any kind of soil, sand, rocks or gumbo, wet or dry, on side hill or level ground with

THE Martin Ditcher & Grader

Reversible, Adjustable, No Wheels or Cogs

SOLD ON 10 DAYS TRIAL

All steel. Made in 2, 4 and 6 horse and tractor sizes. Economical from first cost on. Over fifteen thousand satisfied customers. No farm or ranch outfit complete without a "MARTIN." Use one a day and you'll agree.

Write for catalog and list of users near you. No charge, no obligation; postal will do.

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Our Ready-Cut Method Gives You Just the Home You Want—Read

SEND for Free Plan Book of 60 practical and beautiful American Homes—with floor plans, exterior views, prices and specifications. The Plan Book explains the tremendous, vital, money-saving reasons why YOU should buy your home from the largest ready-cut house manufacturers in the West—the world's greatest lumber market.

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Which Road Is Yours?

An Earth Road which requires at least a 218-pound pull to each ton

A Concrete Road which requires an average pull of only 27.6 pounds to each ton

IT takes a pull of 218 pounds on your team to get a 1-ton load over the road on the left, when you can get over it at all. In wet weather you can't get over it at all; even in dry weather it is rough and dusty. On the right, where the road has been paved with concrete, it takes a pull of only 28 pounds. It never takes more than that in the worst kind of weather—winter or summer—because it is hard, clean and even.

Which Road Do You Want?

Tests showing how many pounds in pulling power per ton of load is required on various types of road surfaces were made for the Good Roads Bureau of the California State Automobile Association by Prof. J. B. Davidson, Division of Agricultural Engineering of the University of California. They are summarized as follows:

	Pounds
Over a level, unsurfaced concrete road	28
Concrete base, ⅝-inch skin top asphaltic and screenings	49
Waterbound macadam, level, good condition	64
Concrete base, 1½-inch Topeka top, level, good condition	68
Gravel road, good condition, level	78
Earth road, fine dust, level	92
Earth road, stiff mud on top, firm underneath, level	218
Loose gravel, not packed down, new road, level	263

CONCRETE ROADS
Their Advantages
No Mud—No Dust
No Ruts—No Holes
No Slipping
No Skidding
Easy Hauling
Smooth Riding
Long Life - Safety
Always Ready for Use
Low Maintenance
Moderate Cost

Big difference, isn't it? You pull on a concrete road, where you pull against an unimproved, rough or boggy surface. Where one wastes power, the other saves. Power costs money, whether you feed a team or buy gasoline. Your saving in power will pay your share of the cost of a concrete road.

Be sure you know what a concrete road is. Concrete is made of portland cement, sand and pebbles or crushed stone, and water. It is hard and durable. Concrete is the material used in dams, factories, bridges, and big engineering works like the Panama Canal requiring great solidity and strength.

While you are thinking this matter over, write us for Bulletin 136. It will help you decide the matter in a way that will cost you less—everything considered—than the old type of road is costing you now.

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CONCRETE FOR PERMANENCE

Storage of Potatoes and Other Vegetables

E. H. Grubb, Reclamation Record.

An exhaustive study of the potato markets, covering a period of 10 years, proves conclusively that the farmer who has favorable conditions, who practices intelligent methods in potato growing, and who stores half his crop, will show a nice annual profit during a 10-year period.

The abnormal conditions now prevailing all over the world, which seem likely to continue for several years, predicate an unprecedented demand for food products of all kinds, and to a greater degree than ever before warrant the assumption on the part of the producer of uniform and profitable returns. More than ever before in our history we are concerned in the prevention of waste and in the conservation of the greatest possible quantities of food.

These facts are recited briefly, because throughout the potato-growing sections are found many farmers who are not convinced that storage is advisable, and who continue to sell direct from the field to the dealer, taking their chances on striking a favorable market.

It is obvious that without adequate and proper storage there is always waste. With storage this waste is largely preventable.

The storage of potatoes is not a new science. It has been practiced for many years, and from the experience of those who have successfully practiced it, certain fundamental facts have been gathered and are given herewith:

First. Potatoes can not be stored successfully unless provision is made for the control of moisture and temperature, which can be accomplished only through good ventilation under control.

Second. To avoid loss only sound tubers should be stored. Potatoes skinned by rough handling, cut, frozen, or in a state of partial decay should not be put in storage. The various rots, decays, and fungi diseases immediately attack such vegetables and quickly spread to the rest.

Third. Potatoes should not be poured or run down a chute through the roof or side of the walls into the bins below.

Fourth. Store only clean potatoes, as soil particles fill the spaces between the potatoes, preventing the free circulation of air and causing heat and moisture with resulting rapid decay and deterioration.

Fifth. The potatoes kept for food should be protected from strong light, which cause them to turn green and become bitter in taste. Seed potatoes, however, are better if kept in the light, as the greening destroys the various skin and germ diseases.

Sixth. Wherever possible the farmer should store his crop on the farm, as harvesting can then be done with shorter hauls, greater economy of labor and time. The latter is an important factor if the season of harvest be shortened by inclement weather.

Seventh. Home storage affords opportunity for proper grading and sorting, and obvitates the long return haul from the shipping point of the rejected potatoes. The unsalable potatoes at the present price of meat animals have a value for food of about $20 per ton.

Eighth. Where farms are of small acreage, and two or more farmers in close proximity are growing potatoes, community storage can be economically constructed with capacity sufficient for the needs of all at a cost but little greater than for the individual plant. Community storage has a further advantage in making possible carload shipments instead of broken lots, and in securing better market and selling results.

Ninth. The purchase of the grader and sorter for community use will lessen cost and insure its more general use.

The Kind of Storage Plant to Build.

In constructing the storage plant the site should be selected with care. The location should be well drained, and if possible a knoll should be chosen. The plant should be placed so that advantage is taken of the prevailing currents of wind in the district, the opening being in line with them. By so doing these may be utilized in controlling moiture and regulating temperature over all parts of the storage cellar.

In the fall or spring, when the temperature of the cellar tends to rise above 40 degrees in the day times and the outside night temperatures are lower than this, the cellar and ventilators should be left open in the early morning, before daylight, to admit the air and cool the cellar to a temperature not lower than 32 degrees.

In the winter, when the temperature falls to near freezing point, advantage should be taken of the first warm day, shortly afternoon, to open up the cellar and admit the warm air, increasing the temperature to not more than 40 degrees.

Thus in very cold weather try to hold the temperature to above 40 degrees and in warm weather try to hold it about 32 degrees. The results will be somewhere between these extermes.

Uniformity of temperature is necessary for safe storage during the long period from harvest until the crop is marketed or consumed, as rapid and excessive variations of temperature hasten decay. The temperature should be between 32 degrees and 40 degrees F., and as near 36 degrees as it is possible to retain. Most vegetables are not injured by a temperature of 30 degrees if not of long duration. Observations of temperature from at least two thermometers should be taken regularly and with special care and frequency during periods of extreme temperatures.

The excavation should be from 3 to 5 feet in order that the cellar will be at least one-half underground. Such excavation will result in a saving in walls and covering and render more easy the maintenance of an even temperature.

The support of the roof should be made with a framework of posts set 10 feet apart, 6 to 7 feet high, with plates of sufficient strength to support the rafters. Where timber from the forest is available the rafters can be placed close together, and a covering of straw and earth will be sufficient for the roof. Where timber is high priced chicken wire or woven fence wire can be fixed on the rafters, which are placed from 8 to 24 inches apart, and the straw placed over the wire. Where obtainable, willow brush may be laid on the rafters to prevent the straw from filtering through. Both brush and straw form good insulators. The layer of straw is from 18 to 24 inches thick, and on top of this is placed a blanket of earth from 6 to 12 inches thick, depending upon the coarseness of the soil. When light sand soils only are available, boards, shingles, or roofing paper can be used to cover roofs to prevent leakage.

The angle of the roof should be 25 per cent pitch or more, as the air space in the cone serves a necessary and important function in conducting moisture and heat.

Special consideration should be given to the matter of constructing the doors. These can be cheaply made of flooring five-eighths or three-fourths of an inch in thickness, with the inside covered with building or tar paper fastened on with strips of lath. The ends of the cellar should have bulkheads of from 2 to 5 or 8 feet apart to provide dead-air space.

For storage houses with capacities ranging from 500 to 1,000 bags, the passageway need not exceed 5 feet in width. A narrow track built of 2 by 4 timbers can be laid along the center, on which a small car will run for transporting in and out. A car is a great labor saver.

Ventilation can be secured for small cellars by an opening 3 by 4 feet at the end opposite the entrance.

If driveway is used, as in larger cellars, double doors, 5 by 8 feet, joined in the center and swung on hinges, should be provided. These can be made of light flooring, tongued and grooved.

The dead-air space, if ample enough, can be used for sorting and sacking the crop. In extermely cold weather coal-oil stoves can be set up in these spaces to prevent freezing of stock.

Ventilators should be set in the roof like a chimney, with hinged lids. These are utilized in regulating the circulation of hot and cold air and in carrying off excess moisture and odors. The size of cellar constructed will, of course, depend upon the quantity to be stored. One and one-third cubic feet of space is required for a bushel of potatoes.

Where there is perfect drainage, the earth is the best floor for the cellar, as it keeps the potatoes from shrinking and shriveling.

These storage cellars are useful also for onions and fruits, except that these should be placed on raised floors to prevent contact with the moist earth.

Filling the Cellar.

Potatoes are often harvested when the temperature in the field is high. It is important that the temperature of the potatoes should be reduced as quickly as possible after storing. To accomplish this the potatoes should not be placed more than 1 foot in depth each day, and the cellar should be left open nights to admit cool air. Additional layers can be built up each day until the bins are filled to a depth of from 5 to 7 feet. Where entire bins are filled at one time it is difficult and often impossible to reduce the temperature to the proper point soon enough.

Storing in Pits.

While thousands of bushels of potatoes are annually stored in pits, experience has demonstrated that the practice should be avoided wherever it is possible. Pits are not desirable, economical, nor permanent. Moisture and temperature can not be controlled in them. The pits are not accessible for supplies for the home table or for the market in severe weather. The air space over the vegetables is not sufficient to permit the escape of foul air, heat, or moisture. Perfect ventilation is always lacking. The pits have to be constructed annually, and can not be utilized to sort or sack potatoes for shipment.

Seed potatoes can not be stored in pits. Owing to inability to control ventilation, moisture, and temperature, disease is developed and vitality and germination weakened.

Do not store vegetables under living rooms in the homes. It is unhealthful and insanitary and the wastage is usually great.

PROTECTION ADDS TO LIFE OF MACHINERY

The price of farm machinery has been advancing for some time. The cost can be reduced by making each machine last longer. A large proportion of farm machinery wears out too soon because it is not given proper care and attention. More machinery is worn away each year by rust and weather than by service. The life of any machine may be lengthened by protection from weather, good lubrication, prompt attention to repairs.

Farm machinery is frequently left standing in the field throughout the winter. Machinery should be properly housed as soon as possible after it is used. Housing not only protects the implements from rust but leaves them in good condition for use the following season.

If the water ordinarily used in cooking cereals is replaced with skim milk, the cooked food will contain about four times as much protein, a valuable bodybuilding material, and will be just as good a food in other respects.

MOREGG
IT MAKES HENS LAY
POULTRY FOOD
SEE that your hens are producing to your own satisfaction. "Moregg" may be all they need to stimulate egg production. It will pay you to try it.
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THE WHY OF LOANS TO THE ALLIES

(Continued from page 3)

months this credit became exhausted and the allied governments like the farmer, approached the bankers for a further loan. This the banks refused to give unless the allied governments deposited in the hands of trustees, securities to the value of $120 for every $100 lent to them and every dollar that has been lent to the allies since then, previous to the loans made to them out of the "liberty" loan, and with the exception of the $50,000,000 City of Paris "sympathy" loan, has had to be secured by having deposited in the hands of trustees, stocks of corporations and government and other bonds, secured on the assets of railways and other corporations in America, England, Canada, Australia, South Africa, New Zealand and other countries, to the value of $120 of stock to $100 of loan, with the added proviso, that should the value of the security fall others will be added till the value is again at the ratio of twelve to ten.

At the time America entered the war, England, who was acting as banker for the allies, was finding it increasingly difficult to obtain stocks and bonds to deposit as security. However when the United States entered the war she agreed to lend the allies several billion dollars worth of credit. When we subscribe for liberty bonds we are in effect the bankers who lend money to Uncle Sam on his unsecured note, who in turn pays our farmers for the food stuffs and our manufacturers for the automobiles, railway engines, and ammunition which they ship to Europe, taking in return the note of the allies.

What would happen if we ceased to lend money to our allies? They would then either have to pay for all they bought in this country with gold, which would soon drain Europe, disorganizing the credit of all the European nations and raising the prices of all goods in this country to an extraordinary high point, or the European would cease to buy from us.

Our exports have exceeded our imports since the war began by over $7,000,000,000. It is obviously to our interests to continue to export these goods at the prices we are getting for them. If we do not sell we face stagnation and hard times. If we do sell we must be paid. The only way we can be paid is by lending our customers the money to pay with. They must pay us by money that is already in the United States. We have a double interest in every man subscribing to the limit of his power for liberty bonds. In the first place self interest dictates that it is to the advantage of this country that our foreign trade should suffer no interuption—that by this trade we are taking our position as one of the foremost manufacturing and financial nations of the world, and if it ceases we face depression and hard times and secondly, if we do not help, our allies we shall most certainly be compelled to pay Germany's war debt after the war, receiving nothing in exchange.

QUESTIONS AND ANSWERS

Hooper, Utah.

Utah Farmer:

Have you any information as to the comparative feed value of Speltz for fowls and animals? Would be pleased to have answered in Utah Farmer.

Yours very truly,

Granville Oleson.

Answered by Dr. W. E. Carroll.

Emmer which is usually called speltz fed to dairy cows was found to be 13 per cent less efficient than corn or barley meal. Fed to hogs it required 31 per cent more emmer meal than corn meal, and 5 per cent more emmer meal than barley meal to produce 100 pounds of gain. Fed to sheep the experiments show from 10 to 28 per cent more emmer being required than other grains. Experimental work with steers indicates about 25 per cent less efficiency than corn.

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UTAH IDAHO WYOMING NEVADA

Salina, Utah.

Utah Farmer:

Gentlemen:—I am looking for data on the feeding of cotton seed cake, and I don't know of a better place to go than to the Utah Farmer.

I want to feed lambs and I wish to learn something about cotton seed as a fattener? What size is the best to feed to mutton lambs, the nut size, the pea size of the meal? The amount to feed per head? How often? Feed alone or with grain? What kind of grain? Will oats and cotton seed make a good feed?

In short, give me all the information you can on the subject. I will appreciate a prompt reply. I would like to get my order in for some cotton seed if I find it is profitable.

Thanking you in advance for the favor.

Yours very truly,

J. H. Winkler.

Answered by Dr. W. E. Carroll.

Cotton seed cake has been fed very successfully to sheep of practically all ages and for all purposes. Sheep seem to like the pea size or larger rather than meal. Of course care has to be taken not to overfeed because it is a very concentrated feed. Not more than from ¼ to ½ pounds should be allowed lambs per head daily, and this should be done only after bringing them up by accustoming them to it gradually.

The meal should be mixed with other grains. Practically any other grain can be used. If alfalfa hay is fed, cotton seed meal is not so essential as where grass hay is fed. Alfalfa hay, cotton seed meal, and corn or barley would make a good ration. In case the grass hay is fed cotton seed meal, bran or oats should be fed, though the oats could be used also with alfalfa hay.

Richfield, Utah.

Utah Farmer:

Gentlemen:—How many pounds of wheat are required to mill a hundred pound of flour?

A miller is reported to have said he could make good money making a hundred pounds of 2 bushel. We are charged 3 bushel per hundred pounds, leaving a big profit if the millers report is true. Answer through Utah Farmer.

A Subscriber.

Answered by Prof. C. T. Hirst, U. A. C.

Experienced millers obtain about 40 pounds of flour for 1 bushel of clean wheat. This varies somewhat with the physical condition of the wheat and considerably more with the variety of wheat, for some wheat give a better yield of flour than others. At the Utah Experiment Station an average of twenty samples of five commonly raised varieties of wheat we obtained 69.6 per cent of flour. Our work was done in a small experimental mill and we probably milled it closer than commercial plants do or perhaps allowed some material in the flour which should have gone into the shorts. However, it is only a little higher than is obtained in commercial plants and may be considered as nearly correct.

BLOODY MILK

Rosetta, Utah.

Utah Farmer:

Dear Sir:—I have a young cow that started to give bloody milk on the two hind teats about April last, in June I let her go dry, about a week ago she freshened and she is again giving bloody milk in the hind teats.

Is there anything I can do for this, and is the milk in the front teats fit to use, and would it be harmful to feed the other to the calf?

I thank you for an answer to this.

Yours truly,

Subscriber.

Answer

Where a cow gives bloody milk it is usually due to some injury that has taken place to the udder, or there may be some weakness causing a rupture to one or more of the small blood vessels in the udder. This is usually overcome in a short time if properly handled. The affected part should be milked clean two or three times a day and systematic massage practised on the affected part. If this does not overcome the condition in a reasonable length of time, air is sometimes injected into the udder. Great care must be exercised in making this application. The milk coming from the other parts of the udder should be good and can be used with impunity. There is no danger in feeding milk of this kind to the calf unless there should be an infectious condition up in the udder.

PAINTING PRESERVES BUILDINGS

P. E. Brening.

The best season of the year for applying paint to buildings is in early fall after frost has settled insect pests. Late fall and hard freezing weather of winter are not recommended. After carefully scraping and putting, and after nailing any boards that may be loose, prime with the same material that is to be used for the following coats; never with ochre or other cheap substitutes. Avoid putting paint on a surface that has been painted and begun to peel. This old paint must be removed by use of the burning torch.

For a prime coat, add to mixed paints, twenty-five per cent of pure oil. Let all knots and sappy spots in woodwork be covered first with pure shellac. After the prime coat is applied, putting all nail holes and cracks. Never permit a second or third coat to be put on before the coat in place is perfectly dry and hard, four or five days, and do not force drying by an excessive amount of driers. Mixed paints are usually supplied with driers sufficient for their greatest durability. Use only row oil on outside surfaces. See that the painter is sufficiently intelligent not to flow on the paint.

For the second coat, add to each gallon of prepared paint, one-half a pint to one pint of pure turpentine, varying with the weather; and, if the paint is too heavy, add sufficient pure raw oil to allow it to brush out fully. All high-grade paints that are free from alkali and water are likely to "crawl." Turpentine prevents this. Be sure all paints used are well stirred, both before and during use. Always brush them out well, remembering that no good work can be done by the brush which is not wielded with a good force of "elbow grease" back of it.

The third coat should have as much pure oil added as will not interfere with perfect covering. Excess of oil will add to the lustre of the finish and insure greater durability. No oil has ever been discovered which can take the place of pure linseed when all points are considered. The effort has been made to substitute fish oil, but this is a non-drying oil under most conditions, in fact, can be made to dry only by using special driers. A small proportion (about twenty-five per cent), of fish oil may be added to the paint of a final coat and it will increase its durability, but such a coat will remain "tacky" for a longer period than if pure linseed oil were employed. Fish oil must not be used in the priming or under coats, if a good job is desired, for these must dry hard within a few days. Fish oil has a disagreeable odor which makes it unpopular in painting houses.

Fish oil is used in paints which are for covering metal surfaces, (it is more waterproof than linseed oil), and is excellent on tin roofs, stacks, chimneys, etc. The greater heat found in such locations forces effective drying. If a wood surface is unseasoned, or has other faults of surface, choose a second-grade, ready-mixed paint or make one of lead and oil hand mixed. Both of these are more porous and let the moisture pass out instead of blistering and peeling. But in the case mentioned, the surface is not so well protected from weather conditions, as with a coat of well-made paint mixed by power.

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LIVE STOCK

USE CHEAPER FEEDS

Corn Fodder, Straw, and Other Roughages, When Fed with Concentrates, Make Good Rations.

"It is time to quit shoveling grain indiscriminately into livestock. Good livestock farming demands it and the need of more food requires it. Feeding grain to meat animals with a lavish hand is responsible for one of the greatest feed losses on the farms of this country. Hay, fodder, silage, and pasture are the cheapest feeds and will carry animals along with a minimum of grain. Keep the frames of the young animals developing on these cheap feeds. Withhold the full grain ration until the finishing period arrives. Breeding cattle may be wintered on the cheaper feeds."

This advice of animal-husbandry specialists of the United States Department of Agriculture to stock feeders is not emergency advice only; it is the sound logic of meat production, which American farmers must learn if they are to compete successfully with European meat producers in the coming generations. These are good days to learn the lesson of feed conservation. In Farmer's Bulletin 873, "The Utilization of Farm Wastes in Feeding Live Stock," specialists tell how to use these cheaper feeds in rations for cattle, sheep, and horses.

A tremendous waste of feeding stuffs occurs annually on American farms, according to figures presented in this publication. In 1914 about 120,000,000 tons of straw were produced in the United States. Of this amount 55 per cent was fed to livestock, 15 per cent was burned, 8 per cent sold, and 22 per cent plowed under or otherwise disposed of. Corn stover produced in the United States is estimated at 245,253,000 tons, of which 81½ per cent is fed to cattle and other stock. No figures were obtained to show the percentage that is wasted in the feeding, but at least 35 per cent of the total amount produced represents actual waste.

This waste of corn stover can be checked, it is said, through use of better methods of feeding fodder and stover and it can be almost entirely stopped through the use of silos. Straw and stover are best utilized for feed when accompanied by concentrates, such as cottonseed meal. If the large amounts of cottonseed meal ordinarily used for fertilizer in the south were, instead, fed to livestock and the manure used for fertilizer, the value of the meal would be increased from 50 to 85 per cent.

Practical experience as well as experimental work has taught that straw and stover can be used very economically in the rations of almost all kinds of livestock. They can be used in the fattening rations of all farm animals except hogs and should compose the larger part of all wintering or keeping rations of cattle, sheep, and horses. Breeding herds of beef cattle or dry dairy cows can be successfully kept on rations composed largely of these roughages. Flocks of breeding ewes do well on such feeds when some grain is added. Horses doing very light work or no work at all need little grain if given a plentiful allowance of clean, light straw or stover. Under certain conditions, of course, grain should be added to the ration, but now it should be conserved as largely as possible for human consumption. The bulletin mentioned suggests various rations which are made up principally of these waste feeds.

CULL POTATOES AS HOG FEED

Can Be Fed Profitably—Should Be Cooked.

When cereal foods are high, as now, and potatoes are cheap and plentiful, hog feeding of cull potatoes and any surplus of the poorer grades which might be available is profitable. It is estimated that 4½ bushels of potatoes equal 1 bushel of corn in producing weight gains on hogs. The feeding of marketable potatoes is therefore unprofitable unless corn is worth 4½ times as much as potatoes. But as above stated there are the culls and other unmarketable potatoes, which might advantageously be fed to hogs for several reasons: A waste is utilized and more valuable feed is saved; transportation charges on a poor product are saved; and the potatoes marketed bring a higher price than they would if the small ones were included.

Food Value of Potatoes.

Potatoes resemble corn in composition, and this is especially true of sweet potatoes. Both corn and potatoes are poor in protein and rich in carbohydrates, thus they make fat rather than bone and muscle. The potatoes should be boiled or steamed until they form a mealy mash, which should be mixed with some other feed such as corn meal, shorts, or bran. Only enough water should be added in the cooking to prevent burning and to make a thick mash. While some potatoes may be fed raw to add succulence to the ration, they should be given only at intervals and in small quantities. Too many are likely to cause scours.

A potato ration should be supplemented with feeds rich in nitrogen, such as old-process linseed-oil meal or fish meal. Where sweet potatoes are plentiful and cheap a combination with gluten meal and skim milk makes a good ration.

Effects of Feeding

In one case of experimental feeding shoats made one pound of gain for each 3.13 pounds of grain when they were allowed to do their own harvesting of raw sweet potatoes. Sweet potatoes are said to be the best root crop for pigs for fall and winter grazing in the cut-over pine lands of the South.

The meat of potato-fed hogs is equal in quality to pork from a grain ration, but the later is likely to carry a greater finish. After cooling there is no appreciable difference in firmness of the carcass between a potato-fed and a grain-fed animal.

SAVE THE SOWS

Suggested as a slogan for farmers who wish to prevent a threatened meat shortage. Selling a brood sow at this time is like killing the goose that laid the golden eggs.

When pork is selling at 18 cents or more a pound on the hoof, the hog breeder may be tempted to turn into cash all that he can sell; the value of a brood sow which will produce such high-proced offspring is proportionately increased and she should be kept as the source of further and future profits.

Since the beginning of the war the number of swine in all countries has decreased, and the decrease has been marked in some of the belligerent countries. In France, for example, in the three years just before Januray 1, 1917, the number of swine decreased 38.12 per cent; during 1915 the number in Germany decreased 31.47 per cent.

Situation Critical.

Breeding stock are being depleted, that the situation is already critical and threatens to become very serious if the country continues to be drained of its meats. Hogs furnish meat more quickly and cheaply than other stock can; the meat shortage, therefore, can most readily be met by swine production. It has been calculated that the possible increase from one sow is 1002 pigs in four years, on the supposition that all litters consist of six pigs, that all live, that half are females, and that each gilt should farrow at one year and every six months thereafter.

Cut Feeding Expense.

Another cause of the depletion of breeding stocks is probably in the high cost of feeds. While concentrated feeds have gone up, some of the expense of carrying breeding stocks may be cut down by the use of green fall forage crops, pasture, alfalfa or clover hay. Brood sows may be maintained in fair condition at comparatively little expense by the use of such feeds. By sowing in the corn, or as a cover crop on land which is likely to wash, sowing rape, or planting a root crop the cost of wintering sows may be reduced. A campaign to save the sows as one means of helping to meet the threatened meat shortage is recommended.

The weeds destroyed often give a farmer an excellent market right on his place for grain, hay, and root crops.

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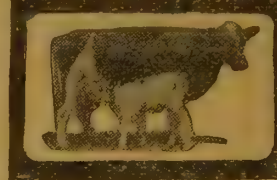

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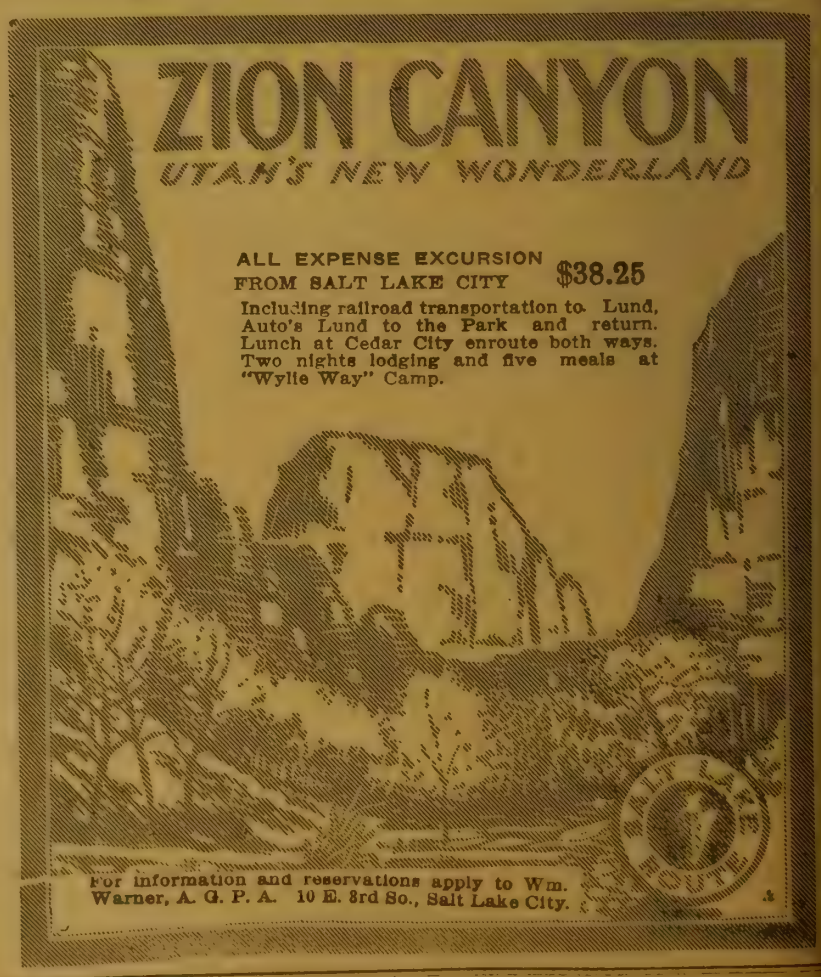

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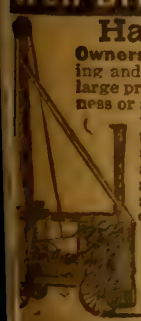
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PROFIT IN SHEEP.

Income from Farm Flock at Middlebury, Vt.—Profitable Home Market for Crops.

The income from a pure-bred flock of sheep during the year from August 1, 1916, to August 1, 1917, was $13.37 per ewe. After the proper allowance had been made for the cost of the feeds which must always be purchased, including the rent for pasture and forage crops, the following prices were received for the home-grown products when marketed through the flock:

Corn	per bushel	$1.97
Oats	do	1.05
Roots	per ton	9.20
Hay	do	19.72

The flock consisted of 42 ewes and 2 rams. Breeding began on September 12, and 40 of the ewes dropped 50 lambs, 44 being on hand July 7. These lambs averaged 66.9 pounds on that date and on basis of market prices for that week were worth 13 cents per pound at the farm.

During the fall the flock ran on 28 acres of pasture, being fed in addition a light grain ration. In November hay feeding began, and the flock was removed from the pasture. During the winter some roots were fed. The lambs began to come in February, and creeps for grain feeding were provided in order that the lambs might learn to eat grain as early as possible. They began to eat the grain at about 2 weeks of age, and grain feeding continued until July 7. On May 1 the flock was turned on pasture supplemented with a grain ration. Here the flock remained up to August 1.

The gross returns from the flock are as follows:

Wool (278.25 pounds, at 64 cents)	$178.08
Lamb (2,943 pounds, at 13 cents)	382.59
	$560.67

The amount of feed consumed is shown by the following table:

	Ewes	Lambs	Total
Corn ....bushels	42.8	8.9	51.7
Oats ....do....	73.4	18.6	92.0
Bran ....pounds	1,171	392	1,563
Roots ....tons....	1.1	.....	1.1
Meal ....pounds	.....	605.6	605.6
Hay ....tons....	11.8	.....	11.8
Pasture ....acres	28	.....	28
Forage ....do....	1	1	2

Since the average farm flock will pay for the labor expended on it by the cleaning up of weeds in pastures and the production of manure, no charge for labor has been made.

The cost of purchased feeds were figured at the following prices:

Bran	per ton	$30.00
Linseed oil meal	do	40.00
Pasture rent	per acre	2.50
Forage crops rent	do	3.60
Seeding	do	3.75

After making these charges and deducting them from the gross income, there is left a balance of $441.60. This represents the amount received for the home-grown feeds at the following prices:

Corn	per bushel	$1.97
Oats	do	1.05
Roots	per ton	9.20
Seeding	do	19.72

Since these prices are higher than the market prices of the same products at harvest time, it can be seen that the farmer can find a ready and profitable market where he sells feed stuffs through the medium of the farm flock in the form of lamb and wool.

SHIFTS IN STOCK RECEIPTS

Cattle received at stockyards show increase, hogs and sheep a falling off. A record of receipts of cattle, hogs and sheep at the stockyards of the country shows that there has been an increase in the number of cattle that have come to market in the first eight months of 1917, as compared with receipts for a similar period of 1916. Receipts of hogs and sheep show a decrease for the same period.

Shipments for the month of August, in both years, reflect a like tendency. Figures gathered by the Bureau of Markets, United States Department of Agriculture, from the 46 principal stockyard cities show that 1,705,812 cattle were received in August, 1917, as against 1,527,069 in the same month a year ago. The August shipments of hogs, on the other hand, were only 1,717,865 head for this year. Equivalent they were 2,593,537 last year. Equivalent figures for sheep were 1,453,176 and 1,884,815. For the first seven months of each of the two years the figures were as follows, the 1917 receipts being given first in each case: Cattle, 10,679,987 and 8,191,618; hogs, 22,532,927 and 24,408,981; sheep 7,980,539 and 8,535,535.

Causes of Cattle Increase

Officials of the Bureau of Markets say that a number of causes have a bearing on the increase in the receipts of cattle and decrease for hogs and sheep. The increase in cattle shipments is in part due to an effort to market the animals because of the high prices that have been obtained for them, coupled with the greatly increased prices of feds, and the several droughts that have prevailed in the Southwestern section. Some dairy animals have undoubtedly come to market from these causes, coupled with a desire on the part of dairymen to keep only high-producing stock, and to get rid of cattle that will not be profitable as milk producers.

Last year an unusually large number of hogs and sheep came to market in response to high prices, and the receipts at the stockyards so far this year, are believed to represent rather a return to the normal movement than a distinct falling off in the supply.

Shifts in Hog Receipts.

In the north-central part of the country the receipts of hogs at most of the packing centers have shown no falling off, and in some cases an increase. Ohio points, and some in Indiana, Illinois, and Iowa show slight increases in hog movements, but many of the larger centers, such as Chicago, Kansas City, and St. Paul show decreases, and the aggregate falling off is considerable. Receipts of sheep have shown decreases almost everywhere, but a few places in the far West, notably Denver, and in the Southwest, especially in Texas, have shown decided increases. These increases, therefore, represent range-raised rather than farm-raised sheep.

Every good ewe lamb should be saved.

Earnest, hard work is the only antidote that will successfully exterminate procrastination.

Money talks, but seldom gives itself away.

Excursions are Periodic and Incidental

But——
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WM. WARNER, A. G. P. A., Salt Lake City.

BARR TELLS BEET GROWERS HOW TO TREAT THEIR LAND

(Continued from page 2)

before beneficial results are obtained from this grass sod as a fertilizer.

Alfalfa lands should be plowed as soon as the last cutting of hay is removed. First plowing or crowning should be done as shallow as possible, say from two to three inches or four inches in depth, then well harrowed to separate all earth from crowns and allowed to stand until just before winter sets in, when it should be plowed the second time as deeply as possible thus burying the crowns to a depth that they will not interfere with cultivation, of beets, an also gettting better value from them as fertilizer.

If your time is limited, by all means get your crowning done this fall and your second plowing in the spring. Alfalfa is a hard plant to kill and the double plowing system is the most successful way to handle it.

Floating or leveling should be done on those lands as soon as they are dry enough to work in the spring then harrow with a common spike tooth harrow at intervals until seeding time arrives.

Alternate freezing and thawing throughout the winter will put lands worked in the above manner in splendid condition, as they are well settled and a good solid seed bed is easily prepared, resulting in a good stand of beets and by proper culture, the maximum tonnage.

The more grain you replace by growing sugar beets, the more dairying and stock feeding you can do on the same acreage, but do not make the mistake of trying to grow beets on grain lands that are worn out as results will be very unsatisfactory.

The sugar beet is an expensive crop to grow, as we have tried to show you in previous articles, so select your best lands, treat them in a proper manner and you will not be disappointed by results.

CARE OF SEED CORN

It should begin immediately after gathering and be continued until the grain is planted. The same day that seed corn is gathered from standing stalks as they grow in the field, the husked ears should be put in a dry place where there is a free circulation of air, and so placed that the ears do not touch one another.

This is the only safe way, according to the United States Department of Agriculture, which says that much good seed has been ruined because it was thought to be dry enough when gathered. Many farmers think that their autumns are so dry that these precautions are not necessary, yet there is no locality where the corn will not be bettered by a thorough drying treatment. If corn is left in the husk it may sprout or mildew during warm wet weather, and it is more likely to become infested with weevils.

Poor Storage Impairs Vitality.

The vitality of seed may be reduced by leaving it in a sack or in a pile for even a day after it has been gathered. During warm fall days, with some moisture in the cobs and kernels, the ears heat or mildew in a remarkably short time.

The best and cheapest treatment immediately after the ears are gathered and husked is to tie the ears singly on binder twine at about eight-inch intervals, the twine being looped about the middle of the ears so that they hang balanced and horizontal. Ordinary binder twine is strong enough to support from 15 to 20 ears.

Wire racks are cheaper in the long run and more convenient. A good form is made from welded or woven wire fencing, the upright wires being used as the hangers, and the lateral wires cut off and bent upward being used as supports for the individual ears. The lateral wires, about three inches long on either side of the main upright, are thrust into the butt end of the cob. These racks will last many years and are easily stored when not in use. In use, with the corn upon them, they have somewhat the appearance of giant fern fronds. The central wire is the midrib of the leaf, and the ears of corn stand out on each side like the fern leaflets, or like leaflets on a locust tree.

Wooden seed racks, in which the ears are stored in rows on separate shelves, are convenient dryers, and have no drawbacks in a dry, breezy place, although the air can not circulte freely on all sides and dampness may be held where the row of kernels rests on the wood.

Only during unusually damp weather at seed-gathering time will a fire be necessary to help the drying. Yet if heat is applied in a poorly ventilated place it will do more harm than good. If used, the fire should be slow and long-continued. It should be below the ears with plenty of good ventilation above them.

CARE OF THE TRACTOR

Whether or not the tractor is housed, all gears and other wearing surfaces should be protected from the rain by a covering of heavy grease that will not wash off. Otherwise the tractor is likely to suffer serious damage, and the operator may experience long delays in getting the machine ready for use next season.

One medium-sized potato (6 ounces) supplies about as much starch as two medium-sized slices of bread (about 2 ounces).

If you want the best in Butter Wrappers send in your order to The Utah Farmer TODAY.

MAN—To wear fine suit, act as agent; big pay, easy work, Banner Tailoring Co., Dept. 738 Chicago.

UINTAH BASIN FARM FOR SALE

160 acres, 120 acres irrigable, 73 shares paid up water stock, representing over one second foot of water.

50 acres plowed and partly seeded, three wire fence, good locality, near town of Myton, close to state road.

Owner has more land than he can care for, and make beneficial use of water on, land near by sold recently for $75.00 per acre, land adjoining held at $40.00 without any improvements on it. To make quick sale offer this place for $4,000.00, can give terms to suit. Will consider trade.

P. O. BOX 225, MYTON, UTAH.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.
Fairview Utah

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

AN IDAHO RANCH BARGAIN

480 acres, all can be irrigated, two running streams across property, adjoins open range, eight miles from railroad station and two miles from school. All fenced and produces 200 tons of hay. Includes 150 cattle, 15 horses and all necessary machinery. Price $17,500, terms.

FEDERAL LAND CO.
Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart, County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

RELIABLE FARM BARGAINS

KIMBALL & RICHARDS,
"Land Merchants."

Within five miles of Salt Lake City, in the southeast, we have one of the most ideal farms and chicken ranches to be found in the state of Utah. This property contains 42 acres, six-room house, large barn, silo, place to feed the cows direct from the silo to the barn, good orchard, chicken coop, brooders. This chicken equipment has cost $3000 and is in first-class condition, all steam heated. There is a fish hatchery on the place. beautiful stream of water; ground planted this year to sugar beets, grain and other crops. This property can be had on a quick sale for $11,000. That will include all the machinery on the place, one good cow, all the chickens on the place. The potatoes have not been dug, the sugar beets are still in the ground and a lot of other crops still to harvest that will go with the sale of this place. If you are looking for a beautiful farm that is an all-around farm and chicken ranch and fish hatchery, with about forty acres of first-class ground, this would certainly appeal to you. We can make terms on this place.

Just below 14th South we have two acres at $500 per acre, 10 per cent down and ten years on the balance.

On 16th South we have one acre and a nice little home for $1200, easy terms.

We still have one farm belonging to the Keystone Steel & Wire company of Peoria, Illinois, for sale. These people have instructed us to sell this immediately. The farm is one of the best in the Bear River Valley, both from the point of improvements, location, soil and water right. The property contains 120 acres and has a beautiful home, granary, machine sheds, icehouse, hog pens, chicken coops, blacksmith shop—in fact, all the buildings that could be desired on any first-class farm. These buildings are in a fine state of preservation, having been well painted. This property lies on the main county road, a short distance from the town, and lies in such a way that it is easy to irrigate, being next to the main canal. This property can be had on 25 per cent down and ten years on the balance, 6 per cent interest. We are holding this at $175 per acre. This property is really worth $225 per acre. If you are looking for a farm that will pay for itself with your work, this certainly will appeal to you.

We have a number of farms for sale in Cache valley. One farm of 75 acres at $110 per acre. This property is under a high state of cultivation and lies in a good locality, near schools, churches and railroad station.

160 acres for $7000. This property lies under the canal and is splendid land. This property can be had for 10 per cent down and ten years on the balance.

At Farmington, a part of the old Bishop Secrist farm for sale, lying below the county road, and has been considered for years one of the best farms in Davis county. This farm can be had for $250 per acre. We are willing to give terms on this farm.

700 acres of dry farm land which has produced a wonderful crop this year. This property is one-half planted to summer fallow grain now; good house, barns and other improvements. The canal runs through the property and it is all subject to irrigation; one mile from the railroad station and lies in the center of the Bear River valley. This property has a combined harvester and all necessary machinery and can be bought for $65 per acre. We are willing to give good terms on this property.

KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street, Salt Lake City, Utah.
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FARM AND RANCH DEPARTMENT.

BUY NOW

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Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS
WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

UTILIZING BEET TOPS AND LEAVES

(Continued from page 3)

if cold weather sets in before the crop is consumed, as is generally the case, the piles of tops and leaves will freeze, the leaves become dry and break off, the tops or crowns become hard from drying out and freezing and if it does not get stalled on the way to the pouch, (frequently the cause of the death of animals pastured on beet tops) the criter has a stomach full of frozen feed which it has to thaw out at the expense of its body heat. It will also be found in such cases, that the animal will only eat sufficient tops and leaves the satisfy its hunger and will mostly take sufficient hay to barely stand the weather and be able to have enough surplus heat to thaw out another meal of tops and leaves which it likes so well.

On the other hand, if the weather is not severe, and the tops and leaves do not freeze, the animal will eat only the tops and leaves. Due to this fact, many a calf and horse has been lost, owing to the fact that these portions of the beet contain a considerable amount of oxalic acid which is a strong stomach poison.

Another objection to pasturing the stock in the beet field is that while eating, the stock buries more feed in the earth, by tramping, than it eats and when once covered with earth, these by-products are inedible.

In view of these facts, it is obvious that practice of permitting these by-products to remain and rot in the field or the more general practice of permitting the stock to pasture in the beet field, should be discontinued.

Siloing Beet Tops and Leaves.

While the practice of siloing beet tops and leaves has been practiced in European beet-growing-countries for many years, it has only been during the last few years that this method of handling them has been in vogue in the United States. It has beet demonstrated, however, that this is the most efficient method of handling them and the results obtained have shown that the slight additional expense of placing them in a silo is much more than offset by the results obtained.

Space will not permit the presentation of a general discussion relative to the food value of siloed beet tops and leaves as compared with the food value of other silage; nevertheless, it will be well to note that actual experience has shown that an acre of beet tops and leaves from a normal beet crop, properly handled, produces as much food as an acre of corn silage. It is obvious, therefore, that whatever the value of half an acre of corn silage is to the farmer, the same value can be placed on an acre of beet leaves and tops. In other words, if the farmer can afford to raise corn silage, he can certainly afford to take the proper care of his beet tops and leaves. Experience has also shown that when the tops and leaves are pastured they return about $6.00 per acre. If properly siloed they are worth from $40.00 to $50.00 per acre.

Many farmers, no doubt, have refrained from siloing these by-products for the reason that they were of the opinion that to do so properly, it would be necessary to erect an expensive silo. This however, is not the case.

There are various types of silos that have been found to be ideal for siloing these by-products and the writer would suggest that the farmer adopt the style which is best suited to his particular conditions.

The accompanying illustrations gives a fair idea of the general construction of the various types.

Type 1. This is known as the "Rick-silo" and is the most inexpensive. The general plan of siloing the tops and leaves by this method is to place a layer of straw on the ground and then pile the tops and leaves to the height of about five feet. After this, another layer of straw should be added. On top of this layer of straw, from one to two feet of earth should be added in order to exclude the air. The writer would call atention to the fact that the amount of earth used to cover the mass must be governed by the weather conditions. If it is extremely cold the greater amount of earth covering should be used.

Some farmers who use the rick silo have found it advisable to alternate layers of tops and leaves with layers of straw. This, however, is a matter which can be left to the judgment of the farmer.

Type 2. This form of silo is made by digging a trench about five feet deep and from eight to ten feet wide, the length being determined by the amount of tops and leaves to be siloed. Care should be taken in making this type of silo, to give the bottom a slight slant, in order that there may be sufficient drainage.

Type 3. In this type, the trench, need only be about two feet deep, the earth coming from the pit being used to build the walls above the earth surface. This type is recommended in cases where the excavation is difficult or where a layer of hard soil is present.

Attention is called to the fact that all of the pit siloes are so constructed as to permit the farmer to drive in with his wagon. If the amount of tops and leaves to be siloed is large, the size of the silo may be increased. However, the writer is more inclined to favor the small silo and if one of them is not sufficiently large, it is practically just as easy to make another as to make one large silo.

This is also a matter which must necessarily be left to the farmer. Many farmers have had excellent results with extra large silos. Where the large silo is to be used, it is suggested that it be made large enough to permit the wagon to turn around. This will greatly facilitate the unloading of tops and leaves and will eliminate the necessity of having a runway at each end.

Methods of Siloing.

There are two general methods used in placing the tops and leaves in the silo, these being known as the "regular" and "layer" methods.

In brief, the "regular" method consists of placing a layer of straw in the bottom of the silo, after which the tops and leaves are added until the pit is full.

The "layer" method which the writer is inclined to favor, consists of alternating layers of straw with layers of beet tops and leaves.

Covering the Silo

The general method of covering the silo is to place a layer of straw on top of the mass after which a layer of dirt is added.

Some farmers have had excellent results from not using the earth covering. In these cases, however, a straw stack has been placed on top of the silo which serves the same purpose, providing care is taken to exclude the air.

Another method of covering the silo is putting manure on the top of a thick layer of fine chaff in place of earth. It is claimed by those who advocate this method of covering that the straw absorbs any liquids coming from the manure. This method of covering has been used by several large feeders.

In no instance should the tops and leaves in the process of siloing be subject to excessive pressure at any one point. In other words, care should be taken to have an equal pressure on the whole mass. For example, if the wagon is driven into the pit care should be taken to avoid driving in the same tracks.

Another precaution which the farmer who siloes his leaves should adopt, is to exclude all air from coming in contact with the mass after siloing. This is important, for, if the air does reach the mass after siloing, there are liable to follow secondary reactions which are favorable to the existence of micro-organisms, the combined action of which ultimately will cause putrefaction to set in.

Several days after siloing, the leaves become heated and lactic fermentation follows, the mass taking on a dark brown color. If the siloing has been carried on in a proper manner, the mass will remain in a perfect state of preservation for a long period.

Some authorities have advocated the placing of cement bottoms in the siloes for the purpose of collecting the liquid. The extra expense involved in this method does not appear to be warranted as there is no evidence of a resultant increase in the nutritive value of the final product, and it has been found where the liquid has been retained that the palatability of the product has been lessened.

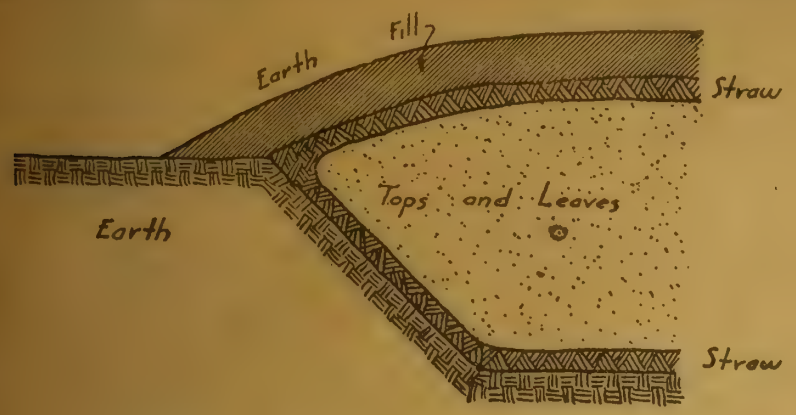
Attention is called to the fact that by the addition of one half of one percent of common salt, the conservation of siloed leaves may be increased.

If salt is used, the fact should be taken into account when feeding lest an excess of the condiment be administered to the animal.

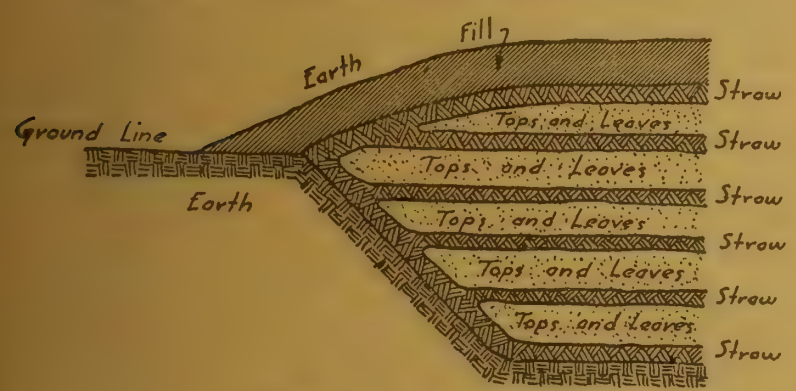
The silage will be ready for feeding approximately six weeks after the silo has been closed.

In filling the silo care should be taken to fill the same as quickly as possible. In any event at least several layers of fresh tops and leaves should be added each day.

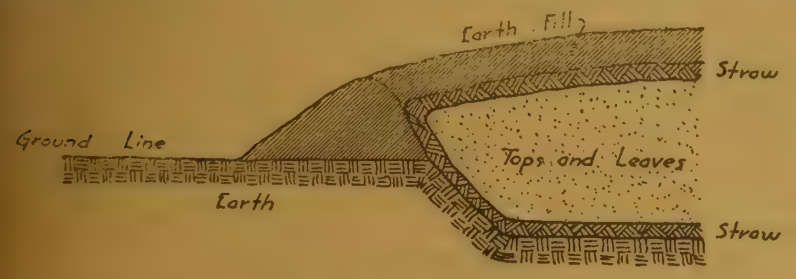
The Utah and Idaho farmers need have no hesitancy in siloing their beet tops and leaves, providing they are willing to prepare their silos in the proper manner and take proper precaution to exclude the air from the silo after filling. This is not a new practice and it has passed the experimental stage. At the present time, the siloing of these by-products is being practiced by the most successful beet growers in Colorado, Michigan and Wisonsin.



TYPE NO. 2 WITHOUT ALTERNATE LAYERS.



TYPE OF SILO NO. 2.



TYPE OF SILO NO. 3.

Richards Durocs

are now on exhibition at the Idaho State Fair, Boise, Idaho.

They will be shipped from Boise to Salt Lake for exhibition at the Utah State Fair September 29 to October 6.

See us at the Fair and if you are in the market for a Choice Boar or Sow we can furnish your wants.

We guarantee to please or will refund your money.

RICHARDS LIVE STOCK CO.
Virginia, Idaho.

"Home of the Champion Durocs"

FOR SALE

If my pigs don't make you money, don't blame the Duroc Hog, "Richard Defender," the champion boar of the West today. My young pigs are from him and "Richard Path Finder." My sows are also prize winners.

VICTOR R. FISHER
Oxford Idaho

Produce market wishes to hear from parties having all kinds poultry and fresh eggs for sale. Box 237 Ely, Nevada.

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

CHOICE TURKEY RED SEED WHEAT SUPERIOR VARIETY

Will yield better than the ordinary varieties. Only small amount of it in the State. Recleaned and ready for planting. Price very reasonable. Orders received subject to stock being sold. Write for prices.

J. W. PAXMAN
Nephi Utah

To the Farmers of Utah

YOUR PART IN THE SECOND LIBERTY LOAN

The farmers of America are supplying the world with food, and the farmers of Utah are doing their full share. Without this food, success in the War would be impossible. The patriotism of the service you are now rendering cannot be over-estimated **but food alone will not win the war.** Our government must be provided with money. Huge armies must be clothed and armed and supplied with the tools of war, and transported to the other side of the world.

You must help financially, too

In a world made free by the blood—the suffering—the tears of millions upon millions of his fellow men, no American, and surely no Utahn, will feel that he has done his duty until he has **DONE ALL THAT HE CAN.**

To the full extent of your ability YOU must carry on YOUR shoulders some of the financial burden of this war for humanity.

In making your subscription to the second Liberty Loan, think of the Utah boys who are offering their lives, if need by, that civilization shall not perish. Among those boys are your own sons and your neighbors' sons. Remember that we are not only fighting for humanity—we are fighting for the safety of our own homes —for the safety of our own wives and children. **Our armies are fighting in Europe so that it will not be necessary for them to fight in America.**

With these thoughts in mind, make your subscription.

Make it to include money you **need.** Make it to include money you CANNOT POSSIBLY GET ALONG WITHOUT. And the feeling that will spring up in your heart will be patriotism—and more. It will be your part in the universal sacrifice—"That the world may be made safe for Democracy."

Don't Wait

Go to your bank NOW and buy the bonds that will send your dollars over there to give a FAIR CHANCE to the boys who are offering their lives for the world's liberty.

LIBERTY LOAN COMMITTEE OF UTAH

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Ag. Econ.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 11 LEHI AND SALT LAKE CITY, UTAH OCTOBER 13, 1917

CHILDREN WILL LEARN TO LOVE AND CARE FOR LIVESTOCK IF GIVEN AND OPPORTUNITY.

"Shall we be more tender with our DOLLARS than with the LIVES OF OUR SONS" BUY A LIBERTY BOND

Sugar Beet Contracts for 1918

Farm Bureau Sugar Beet Committee Meet. Two-way Contracts for Next Year.

Representatives from a number of county farm bureaus met at Salt Lake City, October 4th, members of the general sugar beet committees, called together to consider the contracts for next year, 1918. Representatives of the government and agricultural college were present.

After a short discussion by the committee, Mr. Mark Austin, general agriculture superintendent of the Utah-Idaho Sugar company, was asked to explain to the committee the proposed contracts made by the sugar companies for next year. The first plan was a profit sharing contract for an equal division of all profits on sugar after the farmer had been paid $7.00 for beets and sugar companies allowed $5.50 for manufacturing the sugar. The other plan was for a flat rate of $8.50 per ton. Either contract can be signed at the option of the grower.

The profit-sharing plan will provide for paying for the beets $7 per ton, guaranteed to be paid during harvest time as heretofore, and in addition, it will provide that the beet growers shall receive one-half of the net amount received by the companies from the sale of sugar over $5.50 per bag.

These two forms of contracts were agreed upon by the combined executive committees of the Utah-Idaho Sugar Company and the Amalgamated Sugar Company. After the sugar officials had confered with government officials on sugar matters.

Mr. James W. Jones, government speculist on sugar beet matters, discussed the two plans and endorsed the profit sharing idea.

Members of the committee freely discussed the question of costs, both as to, growing beets and as the manufacture of sugar. Explanations were made and figures given to show that the contracts were about as fair as could be arrived at under present conditions.

A final vote was taken by the committee and, with but one dissenting vote, they endorsed the two contracts and the matter was refered back to the local bureaus.

A resolution was also passed by the committee that the local farm bureaus should help secure the beet contracts for next year.

About New Factories.

Mr. Jones went into some details showing the farmers why it was a good thing for the sugar factories to run at full capacity. Both farmer and manufacturer suffered when only a partial crop was produced.

Members of the committee endorsed the idea of discouraging the erection of more factories in the local sugar districts, until after efficiency in the growing of beets has reached a standard where the factories now in operation or in the course of construction may be supplied sufficiently to keep them in operation 100 per cent.

The speech harvesting of crops and their prompt delivery to the sugar factories also was pointed out as an item of bringing profit to the highest possible mark, which should be given immediate consideration.

It was pointed out in addition that at a certain factory where the crop of beets ran out too soon and curtailed eight days of the run, a loss of 10 per cent developed. Had the district furnished a full quota of beets the 10 per cent would have been saved. This would have been of immediate interest to farmers with profit-sharing contracts.

Beet Harvesters.

The labor problem of growing beets was discussed. Mr. Jones explained a plan he was working on to help in the harvesting of beets. The proper kind of labor-saving machinery would help and he wanted a committee appointed to work with him in trying out and improving some mechanical harvesters. This committeee will do some experimenting this fall with the hopes of having ready for next fall some good practical machines.

—o—

SILOING BEET TOPS

Answered by James W. Jones.

Does the dirt pit silo have to be any given depth or other dimensions?

How much dirt must be placed on top to weight the silage down?

Answering the first question, it is not absolutely necessary that any given dimensions shall be observed in making a silo for beet tops. Siloing beet tops does not differ, in the actual process of making silage, in any considerable degree, than making silage from corn. It is not, however, necessary or even expedient that the beet tops and crowns shall be run through a cutter. That is unnecessary.

The principle of converting any kind of green succulent crops into silage involves the packing, under pressure and excluding the air.

Where a concrete or other silo is used, it is essential that the silage shall be tramped solidly as the structure is being filled. The air must be excluded. In filling a natural earth silo with beet tops and crowns, where there is a larger exposed area, the matter of keeping the tops and crowns thoroughly packed as the pit is being filled is even more important. Where the tops and crowns are piled high above the level of the pit, precautions must be exercised to have sufficient earth around the sides to prevent the packing process from buldging the sides and thus allowing the air to get in.

Where the water table comes close to the surface during the winter period, the pit will need to be more shallow,—the depth to be determined by the rise of the water.

Answering the second question, it is easily reasoned that a shallow earth pit silo will need more dirt on top to properly weight the contents than will the deeper pit because the pressure of the tops and crowns in the deeper excavation will obviously help in packing. In building a concrete silo, heavier re-inforcement is needed in the lower courses than in the courses nearer the top, because the pressure near the bottom of the silo is greater. The same principles are applied in the earth silo. Some of the extensive feeders with plenty of tops make their silos 60 to 70 feet wide. For the average grower, it will be very much better to make a long narrow pit. The narrow pit, say from 8 to 14 feet in width has two advantages. The pit may be filled and therefore closed in a shorter time with less exposed area and then it is not so hard to shovel the earth on, in finishing the silo. It will be better to make two narrow pits, immediately parallel, if need be, than one very wide pit. Be sure to gather the tops and crowns before the moisture has evaporated and cause the mass to be too dry, at filling time. Best to gather the tops each day and they should not be allowed to lie on the field to exceed two or three days.

It is difficult to pack the mass of material if they are allowed to dry too much.

There is a net profit of $25 per acre awaiting the grower for his beet tops and crowns over and above the profits feeding in the usual way.

Beet top silage has a value corresponding to the value of good corn silage.

—o—

IT PAYS TO GROW SUGAR BEETS

I. D. O'Donnell.

Growing Sugar Beets Promotes:

1. Through cultivation, which means better soil conditions and fewer weeds.

2. Crop rotation, which means better farming methods and even distribution of labor.

3. Dairying and livestock handling, which means better incomes and maintenance of soil fertility.

Growing Sugar Beets Decreases:

1. Danger of crop losses from hail or frost; the sugar beet is a hardy plant.

2. The cost of crops that follow; the digging of beets is as good as deep fall plowing.

3. Financial risk of changes in crop markets; the price of beets is known before they are planted.

Growing of Sugar Beets Increases:

1. By 25 to 50 per cent the yields of crops following beets.

2. The market for forage through local increases in livestock business.

3. The price per acre of land and makes the price stable.

4. The population of country and town, making bigger and local markets.

5. The supply of local, year-round available labor.

The tops and crowns of sugar beets are equal to an acerage cutting of alfalfa with a grain of ration added, in making beef and mutton.

An acre of beets will furnish 7 to 15 tons of tops for ensilage.

The beet pulp and molasses by-products from the sugar factory make excellent cheap feed for stock. Pulp for old ews and old cows and molasses for hogs and horses.

Sugar companies keep expert agriculturists in the field to help the farmers, without cost to the farmer.

Sugar beets make a paying crop for young orchards.

Keep one-fourth of your farm in sugar beets and after your crop rotation gets the working you will harvest as much from the remaining three-fourths as you now do from your entire farm.

Sugar beets are a good crop for small farms.

Sugar beet districts are prosperous farming communities.

It is easy for a beet grower to get credit at the bank.

Handling of sugar beets requires good horses and good roads, and both are found in the sugar districts.

Assuming the above to be true, and in view of the overwhelming testimony, we cannot question it, it is simply up to the farmers, as to how quickly they realize the prosperity which can be theirs for the asking, and which we have all been dreaming of and hoping for during the past seven or eight years. Think it over, turn under five, ten twenty or forty acres of alfalfa this fall and be ready to sign a contract when the sugar man comes around.

—o—

HOW TO PURCHASE FARM SUPPLIES

It has been suggested by transportation experts who are with the Food Administration that, after the harvests are laid by, the farmer make an estimate of the fertilizer, seed, machinery and the like that he will need for the coming season, and then place his order. This will eliminate the failure to receive supplies which resulted last spring on account of car congestion and priority of shipment.

Between March 1 and July 15 of this year the railroad operating in the East and Middle West made a saving of 28,000,000 passenger miles by cutting down on the number of passenger trains. Not counting the saving in labor, this reduction continued throughout the year will mean the saving of 500,000 tons of coal per annum.

From the farmer's standpoint a like saving may be effected in the coming months. All orders for supplies should be placed early. It is also advisable for several farmers in a community to club together in ordering so that each car may be loaded to its maximum capacity, and in this manner eliminate transportation waste. By acting on these suggestions supplies will arrive in season so that time, which is so precious during the spring rush, may be saved; and at the same time the crops will have advantage of those things necessary to their successful planting, tending and harvesting. Cars should be loaded and unloaded promptly when placed on the siding. No stumbling blocks should be left in our path of preparation for a bumper crop in 1918.

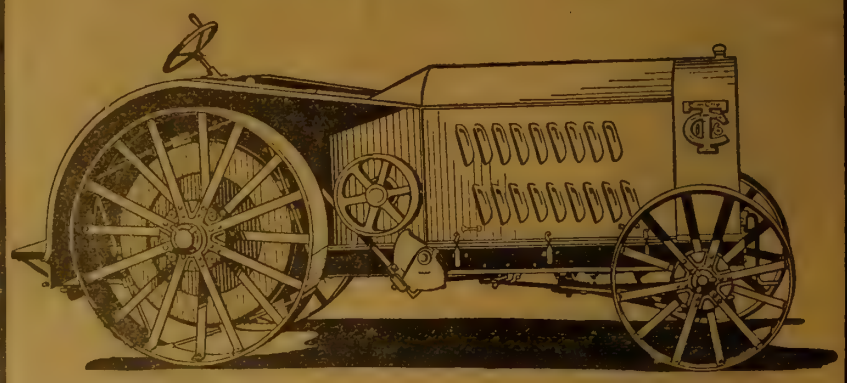
—o—

EASY

"Don't you find it hard these times to meet expenses?"

"Hard- Man alive I meet expenses at every turn."—Boston Transcript.

THE TWIN CITY TRACTOR



The Famous—Twin City 16-30-Equipped with a 4 clyinder 5 x 7½ vertical engine—bull gears completely enclosed in dust-proof casing.
The Tractor with the lightest weight per horsepower.
The Tractor with the least upkeep and cost per acre.

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Save Grain For Human Food

Feed your livestock

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The best and cheapest food

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Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

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PUBLISHED EVERY SATURDAY

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ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, OCTOBER 13, 1917 No. 11

Storage of Potatoes---Everybody Use Potatoes

Our potato crop is a big one this year. What to do with it is a problem. Railroads may be able to haul them to a market and they may not. When they are ready to dig, up they must come. The suggestion is now offered that every one who can, should store enough for their own us and a few bushel for their neighbor for winter use.

Potatoes must be kept in a cool place if they are stored in a cellar under the house or near a cellar where the furnace is kept.

The cuts shown here will give some idea of how to arrange the cellar for storing potatoes and other vegetables.

Care must be taken to control the temperature, ventilation and dryness of the room, if best results are to be obtained. In a recent bulletin sent out by the American Steel and Wire Company, they say:

Operating the Cold Cellar

Invest in an accurate thermometer. The cold of the early winter does not penetrate the cellar, and during this period the ventilator, or a window, may be left open. When the temperature of the cellar falls to 41 degrees, and a cold snap threatens, the cellar must be closed tight.

On mild winter days, the window or ventilator may be opened, and the cellar temperature lowered, and the air freshened.

Toward spring the potato shows inclination to sprout; the sprouts should be rubbed off.

When there are signs of rotting, the potatoes should without delay be examined and picked over. It often happens that the potatoes are wet and slimy from the presence of rotting tubers. This unpleasant condition may be remedied by spreading out the tubers, and air drying; or, dry sand, sawdust, or ashes may be used to dry them.

The Aim in Storing Potatoes

The aim should be to keep potatoes in condition to eat, well into the spring time, and even longer.

Potatoes which are classified as "Early" are good only in the late summer, fall and the first part of the winter. Even with the greatest care these potatoes sweeten and show signs of sprouting in mid-winter. "Late" potatoes keep well into the springtime and are still usable in summer!

The potato should be full ripe; that is, contain the maximum amount of dry matter. When the vines are killed by blight before the potato is fully ripe the keeping quality is affected adversely.

The best keeping sort are those that remain green longest and where foliage is highly resistant to injury.

Effect of Temperature in General.

The potato is a living, breathing organism and is variously affected by heat, cold, moisture.

While cool storage is favorable to keeping, yet, under all circumstances the storage cellar must be frost proof and kept not colder than 39 to 41 degrees Fahrenheit, for the potato is easily frozen and as easily becomes sweet from the accumulation of sugar. In very cold storage the amount of sugar may easily reach 2 per cent.

Effect of Temperature in Detail.

In 1777 Scheele pointed out that plants, like animals, consumed oxygen and gave off carbon dioxide. In 1779 Ingenhouse pointed out that all plants at night gave off carbon dioxide. In 1804 Theo. de Saussure proved the fact that all plants require oxygen for growth. In 1838 Meyen eleborated the subject of plant respiration.

Under certain conditions plants continue to give off carbon dioxide after their supply of oxygen has been cut off. This is made possible by the breaking up of elaborated compounds and is known technically as intramolecular respiration.

The freezing point of the potato tuber lies around 26 to 28 degrees Fahrenheit.

The formation of ice crystals in the the cells of the tuber is the critical life point. The temperature may be reduced considerably under the freezing point, 30.2 degrees Fahrenheit, before freezing sets in. Not until the cooling reaches 26.6 degrees Fahrenheit, and oftentimes under this, do ice crystals form.

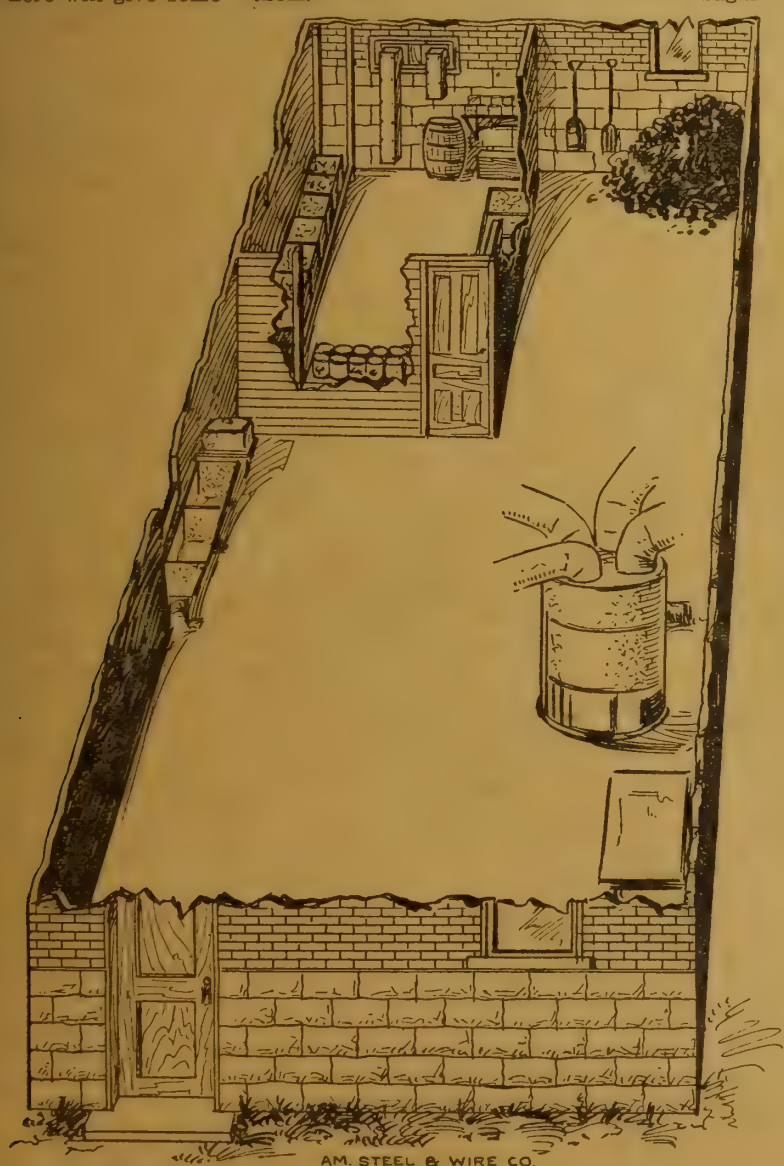
Heat gives rise to the formation of sugar from the starch of the potato, the destruction of the sugar by breathing, and the reverse action changing sugar into starch. In potatoes, kept near the freezing point, the formation of sugar exceeds the use of sugar by breathing and the rebuilding of starch; sugar is stored up in the tuber and it becomes sweet and not edible.

The potato contains most starch and nitrogenous substance immediately after harvesting. The greatest loss of starch from stored potatoes resulted when potatoes were held in moist, warm storage; the least loss of starch resulted when potatoes were held in light, dry, cool storage. The best conditions for storage were found to be cutting off moisture and heat, and this without reaching the freezing point of the tuber.

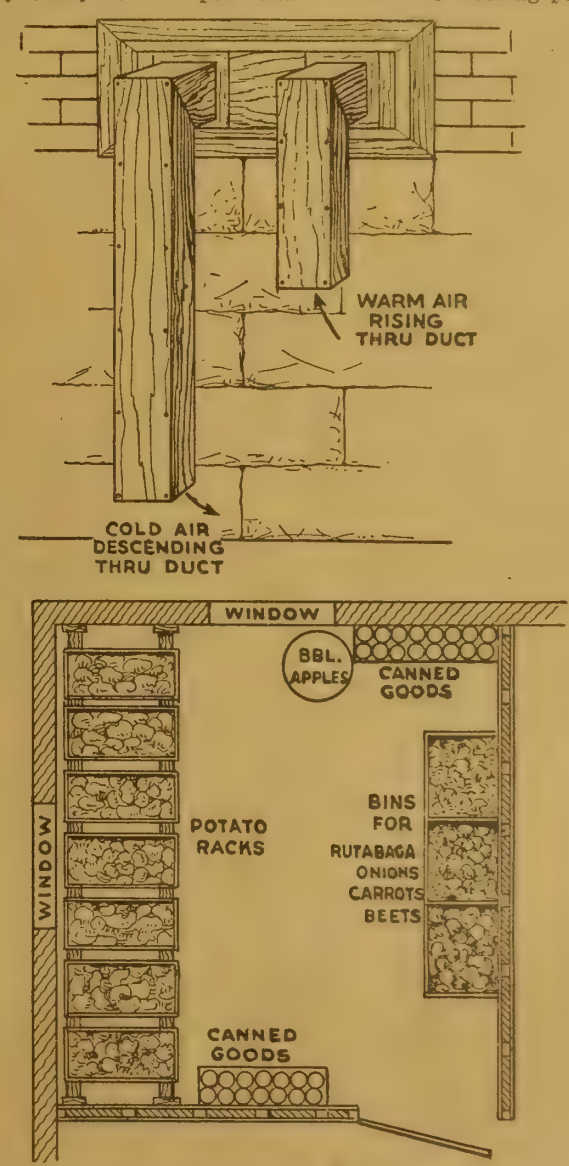
Loss In Weight on Storing.

Mentzel and Lengerke found 100 pounds of potatoes lost the following

(Continued on page 15)



General plan of cellar, showing cool corner and how it is separated from the rest of the room.



Courtesy of American Steel and Wire Co mpany.
Showing plan for storing potatoes in cellar.

DAIRYING

VARIATIONS IN TESTS OF COWS

By W. H. Underwood.

There are many different conditions under which tests of cows change. The idea that when a cow freshens she tests compartively low and that as she advances in the period of lactation her milk contains more butterfat is quite general and i correct as a general rule. Perhaps I should say that it is as correct as any rule we can lay down with regard to this matter.

In a general way it may be said that the test begins to increase about the fifth month of lactation and that there may be a difference of one or even two per cent between the average test when taken by months, comparing the month in which the cow tests the lowest with that in which she produces the richest milk. But while we may look for the test to begin to increase about the fifth month there may be a month or more during the remainder of the year in which her test will be very low.

As a rule, the average test of a cow for a whole year does not vary greatly. If there be a month in which her test runs very high we may look for a period in which her milk will be thin enough to compensate for the unusual amount of fat she has given us, so that at the end of the year we should find her about as we have found her in the past. But there are exceptions to this rule and they are very important.

The question is often asked "Can we feed butterfat into milk?" Well, we cannot as a general rule, but under some circumstances we can. When a cow freshens in unusually good flesh she may be expected to test much higher than she would if she were in a poor flesh condition. I used to be in the habit of observing a few herds kept under different management back in the days when we delivered our milk to the creamery where it was tested and separated. Then the most of our cows freshened in the spring and some of them were not as well fed and cared for as they are now. I remember one herd in particular that always tested low, yes, very low, when the cows began their year's work. But as the season advanced and the cows put on flesh the test went up. In about five months after calving this herd tested nearly two per cent more than they did in the spring when they freshened.

The amount of butterfat that a cow can product in a year is varied by a number of conditions, but I know of no single limitation outside of a lack of good food in liberal quantities that is more telling than for her to freshen when her energy is impaired and flesh wanting. It is true that the cow that carries plenty of flesh at freshening time is more liable to have milk fever than one in poor condition, but with the present knowledge of that disease and its treatment, it is hardly wise to feed the cow sparingly and put up with limited production all through the fore part of the lactation period just to avoid milk fever.

The other day I was talking with the owner of some of the best Jerseys in this part of the state and he told me of one of his cows that entered the Register of Merit class a few years ago. At that time her average test was above six per cent, but last month she tested 4.2.

Years ago, when I tested but seldom, I found two of my heifers testing 3.4. I at once resolved to sell them but they were not fat enough to attract the butcher, and I could not sell them to my neighbors and feel right about it, so tuey stayed with me. After a while I tested them again and one of them tested 5.2.

Sudden changes may be produced in the test by poor handling of the animals. Thus it is often said that getting the cows excited will lessen the amount of butterfat in the milk. But I am inclined to think that by far the greater number of changes in the test of milk result from causes that are not understood by any of us and probably not by the old cow herself.

About the only way one can tell what a cow tests is to test her. Often at an auction where cows are to be sold, I have heard the owner say: "This cow tests 4.2 or 5.4 or, perhaps, 6 per cent." The fact in most instances is that he knows practically nothing about the matter for he has made but one or two tests and regular and continued testing are necessary to arrive at any accurate knowledge of what a cow tests.

TAKE GOOD CARE OF THE COW.

E. D. Jones.

In addition to good feed, the cow must have good care in order to make the greatest profit. Exposure to cold winds and rains greatly counteracts the effects of good feeding. Stalls in which the cows are kept should be free from large cracks that admit cold wind drafts. Ventilation is needed, but the air should be admitted through windows or openings high enough from the ground to prevent the wind from blowing on the cows. The stall must not become wet and miry with manure or from the rain. It should be kept dry and well bedded with leaves, straw, sawdust, or other available material. This will not only keep the cow clean and make her comfortable but will afford a pleasant place to milk in. The bedding will also add to the amount of manure that can be carried to the fields.

The cow is a nervous animal and should be treated gently and kindly. If she steps on the milker's foot or slashes his face with her tail or kicks when her teats are pinched, she should not be kicked in return; and if the feed-room door is left open and she goes in, she should not be beaten for it. A careful milker rarely suffers injury by the cow, and she will respond readily to care, patience, and kindness on the part of the milker. Rough treatment is expensive, for it reduces the milk flow.

COST OF DAIRY HEIFER USUALLY UNDERRATED

Ohio Experiment Station.

What does it cost to raise a dairy heifer to one year and to two years old? Dairymen usually underestimate the value of heifers.

Feed alone at medium prices costs about $33 for the first year and $28 for the second. Costs accounts of raising calves by the Ohio, Massachusetts and Connecticut Experiment Stations and the U. S. Department of Agriculture were used as the basis for these figures.

Labor, interest and miscellaneous overhead expenses must be added to this feed cost. The two-year-old heifer must be credited with a calf an the manure produced during two years. The net cost at medium prices is then given in the bulletin as $44.77 for the first year and $29.08 for the second. At present high prices the net cost for two years rises above $100.

Economy in dairying and care in breeding only good stock are therefore necessary. The heifer from a low-producing dam and an inferior sire will not return the cost of her production and maintenance.

WAR PRICES

Customer — "Send up a quarter's worth of boiled ham."

Shopman—"All right, sir. Anything else?"

Customer—"Yes. If my wife isn't at home, tell the boy to put it through the keyhole."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF AUGUST 24, 1912.

of Utah Farmer, published Saturday, at Lehi, Utah, for October, 1917. Postoffice address, Lehi, Utah, Managing Editor, Business Manager, James M. Kirkham.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total stock. Deseret Farmer Pub. Co.; James M. Kirkham, Lehi, Utah; John A. Widtsoe, Logan, Utah; Thos. Judd, Laverkin, Utah; W. S. Hansen, Fielding, Utah; Jesse Knight, Provo, Utah; R. L. Anderson Estate Salt Lake City, Utah; L. N. Stohl, Salt Lake City, John Q. Adams, Logan, Utah; F. S. Harris, Logan, Utah; O. A. Kirkham, Salt Lake City, Utah.

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JAMES M. KIRKHAM.

Sworn to and subscribed before me this 8th day of October, 1917.

(Seal) E. L. CHIPMAN, Notary Public.

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BLACKLEG PILLS

"California's Favorite" for nearly 20 years

For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:
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Harvesting Soy Beans

Inexperienced Growers Should Inform Themselves as to Proper Methods and Avoid Losses.

For the information of farmers who are beginning to sow soy beans for grain rather than for hay and who are unfamilar with the handling of the plants under the former conditions, the United States Department of Agriculture will shortly publish a Farmers' Bulletin, "Harvesting Soy Beans for Seed." The demand for these seeds for use in the production of oil, feed cake, and other bean products is rapidly increasing and the farmers of the United States are preparing to meet this demand.

The character of growth, the uniform maturing habits, and the heavy seed yields of the soy beans, says the bulletin, contribute to the ease of harvesting and recommend the plants for seed production. The many disadvantages which attend to harvesting of cowpeas for seed are not common to the soy bean. When grown for grain alone the shattering of the pods of the soy bean is a serious fault to inexperienced growers who are likely to sustain a heavy loss of seed through lack of knowledge and improper handling of the soy-bean plant. The shattering varies with the varieties of the bean. It is well, however, with most varieties to give special attention as maturity approaches to prevent serious losses from this cause.

Time of Harvesting

In general, the best time to harvest, except where special bean harvesters are used, is when about three-fourths of the leaves have fallen and most of the pods have turned color. If cut at an earlier stage, the plants are difficult to cure properly, and the yield will be lessened materially on account of the immature grain. On the other hand, if the plants are allowed to become too ripe, the pods will shatter before being cut, and much seed will be lost When special harvesters are used to gather the seed, the plants must reach full maturity to obtain the best results.

Methods of Harvesting.

Various methods of harvesting the crop are in use in different sections where the soy bean is grown largely for seed production. The crop may be cut with ordinary mowing machines, self-rake reapers, self-binders, or even with scythes, corn knives, or sickles. The beans also may be harvested with a special bean harvester which gathers the grain from the standing plants.

When the plants are cut before maturity, they are cured in shocks and allowed to remain in the field until a convenient time for threshing. If thoroughly dry they may be housed and threshed later.

Threshing.

Threshing may be done with an ordinary grain separator, but if this machine is used it must be altered somewhat to prevent the cracking of the beans. In some cases a special set of thin concaves is used for threshing beans and in other instances some of the concaves are removed. Good judgment on the part of the thresherman will enable him to adjust the ordinary separator so that the beans may be threshed with little splitting. Special pea and bean separators are on the market, and their use may be advisable when large acerages of the beans are to be handled. If thoroughly dry, soy beans can be threshed with a flail. If only a small acreage is to be threshed—an acre or so—this method is practicable and economical. In a few sections a corn shredder has been used to advantage in threshing beans. If properly cured and dried out, the beans shell out very readily with such a machine.

The straw obtained from threshing soy beans for seed is a valuable feed for all kinds of stock. In many sections the straw is baled at the time of threshing and sold to liverymen, dairymen, and stock feeders.

Storage of Seed.

As soy-bean seed spoils rather easily if not properly handled, care should be exercised in curing and storing. After the beans are threshed they should be watched carefully to avoid heating and molding. When thoroughly dry, there is no such danger. The best plan, perhaps, is to spread the seeds out on a floor immediately after threshing and shovel them over from time to time until they are thoroughly dry. After this they may be safely put into sacks or bins. The storeroom should be dry and with a free circulation of air. Soy-bean seed loses its viability rather rapidly, and it is not safe to hold seed for planting purposes more than two seasons. The seeds of the soy bean, unlike those of the cowpea, are rarely attacked by weevils or other grain insects.

WE BUILT THIS CAR FOR YOU

WE take it that the average sensible American buys his motor car to *use*—for himself and his family to enjoy, at a cost within reason.

We have built this new Oakland Sensible Six to this idea, and we believe it more faithfully expresses it than any other car on the market.

It is not a racing car, in the sense that comfort is sacrificed to speed; nor is it a show car, in the sense that efficiency is sacrificed to size.

It is simply a very well-made, competent and comfortable automobile—a *sensible* car.

The light weight and even power of the Oakland Sensible Six makes it extremely easy on tires

Touring Car	*$ 990*
Roadster	*990*
Coupe	*1490*
Sedan	*1190*
Roadster Coupe	*1150*

F. O. B.
Pontiac, Mich.

The overhead-valve motor in this new Oakland is simple and compact; it delivers at 2600 r. p. m. 44 horse-power, or one full working horse-power for every 48 pounds of car weight.

It is exceedingly economical of fuel, and in relation to the weight of the car is perhaps the strongest in the world.

The body of the car is very roomy and of exceptionally solid construction; it is swung on specially graded springs of great comfort, and is upholstered in genuine leather.

We know that the present market cannot equal Oakland value except at a considerable advance in cost.

Oakland Motor Car Company
PONTIAC, MICH.

OAKLAND SENSIBLE SIX

52 BUSHELS OF OATS PER ACRE ON DRY-FARM

Jense Nielson has finished threshing at his farm on Bull Dog Park, where he raised fifty-two bushels of oats to the acre on twenty-seven acres. This land was plowed eighteen months ago, and made to fallow last summer. It was planted this last spring, since which time it has scarcely been dampened by a shower.

For the benefit of those not familiar with the situation, it should be stated that there is no ditch on Bull Dog Park, and no chance to get water for irrigating. It has the disadvantage of being a south slope, and not far away from the breaks of the canyon. —San Juan Blade.

The weeds destroyed and the manure produced by sheep on a farm ordinarily pay for the labor devoted to the flock.

Marketing Dairy Products From the Farmers' Standpoint

By Sterling E. Price.

Another item of increasing importance in marketing dairy products is that of co-operation. It also has its strong and weak points. By it a better and more uniform product is obtained, which usually sells for a higher price than private dairy goods. The product will also be greater from the milk unless the private dairy man has good utensils, and a proper dairy managed by a skillful person. The actual cost of manufacturing a pound of cheese or butter is less because, as before stated, the expense of equiping several small dairies is less than to equip one large enough to handle all the product. A better product is made. Instead of many persons making butter and cheese two or three skilled persons are able to do all the work in a factory, thus saving labor and producing a uniform first class product. It, moreover, reduces labor on the farm, relieving the wife of dairy drudgery. Much might be made of its weaknesses but the main ones are the selfishness existing in the majority of sections, the tendency to multiply small and poorly equipped factories, and the fact that some factories run only part of the year.

A survey of co-operation in the U. S. shows that it is far more prevalent than in generally believed, though not upon as strong a business basis as is needed. It is estimated that the farmers co-operative marketing and purchasing organizations transacted a business last year of $1,400,000,000. In Wisconsin alone we find 380 co-operative creameries working successfully. These creameries run on a capital investment of from $410 to $29,100. The majority running from $1,000 to $5,000 wth an average of $3,500 capital for 280 creameries studied. They paid in dividends all the way from nothing to 25 per cent on the capital stock. Only one-third of them paid more than 6 per cent, corresponding to interest, while one-fourth of them pay none at all. The remaining two-fifths pay from 3 percent to 6 per cent. It is therefore evident that more than half the creameries paying anything on stock, pay interest on investment rather than profits on earnings. "Of all the creameries two-thirds pay from none to 6 per cent." More than half of them pay interest fixed at 5 to 6 per cent. Most of those paying more than 6 per cent do not exceed 10 per cent. In fact, 96 per cent of the creameries get from 10 per cent interest down to none. From the standpoint of interest payments on capital stock, the share holders are not seriously detracting from the proportion of saving which on a pro rata basis, would normally belong to non members. As a usual practice these creameries instead of paying high interest on capital stock distribute the savings in the form of higher prices for the products furnished. They seldom discriminate between shareholders and non-shareholders. In fact, when trade dividends are declared it is the practice among many of them to hold the same until enough has accumulated to purchase a share of stock. Another method is to reserve these dividends as a sinking fund to buy new and better machinery.

Other forms of co-operative marketing are also proving very successful. The Utah County Farm Bureau through co-operation has raised the net profit in sugar beets 512 per cent. They saved $4,000 or about 50 per cent on a shipment of cattle from the East, and are having other concessions made which hitherto have been sneered at. It is only an example of an extreme case of previous unfairness but it serves to show the power and efficiency of co-operation. The dairy business in that and many other sections is just as unfair as has been the beet question. If it can be done with the one, why not the other?

In Utah, Cache County farmers united in marketing their milk and in so doing have for the past few years obtained an average of 34 cents a pound for butter fat while others far more favorably located, not co-operated have had an average price of 27 cents a pound.

Comparing co-operative marketing with private marketing the U. S. Year Book for 1914 states, "American farmers are beginning to realize that by selling co-operatively they not only will be able to offer a standardized product and reduce the cost of marketing, but they will be able to furnish this better article to the consumer at the same or even a lower price, thus stimulating consumption. In fact, any system of marketing that does not hope to give better service or better prices to the consumer and at the same time secure for the producer a greater net return, is founded on improper principles." The work of the marketing and co-operative associations includes the establishing of grades and standards; adopting of brands and trade marks, the securing of capital and credit, proper advertising to encourage consumption of meritous but little known product; hunting new and extending old markets, securing information as to crop conditions, the equitable division of profits, adapting production to meet market requirements, the use of by products; securing cold and common storage facilities; the co-operative buying and manufacturing of supplies; co-operative use of expensive farm machinery; securing of a lower freight rate; more equitable refrigeration charges, more efficient transportation service, more and better labor; and the general stamping out of selfishness; and cultivating a spirit of co-operation in all community affairs.

We will now turn to the greatest factor that has been holding down the farmers' prices in dairy products —that of producing a standard and a clean product.

There has been too much indifference on the part of consumers regarding clean milk, too much of a tendency to regard all milk as the same, and too much of a desire to buy it at a low price regardless of quality.

This linked with the farmers lack of knowledge, extra cost of equipment without remuneration in price, his indifference and in cases, laziness, has caused the farmer to furnish what he could without thinking of the advantage a good product would give or without thought of what that dirty product may bring to a community or even his own family. Those who have sensed these problem have equipped themselves to meet the demand of the market and are benefiting thereby, while neighbors, wholly ignorant of the cause wonder why they do not do as well.

Consumers are awakening to the great value of dairy products and also to the great dangers of a product that is unsanitary so they are beginning to pay a price that will encourage the farmer to produce what they demand.

When we stop to consider the added expense of producing clean milk over dirty milk we readily see that the farmer must be paid for the task which he undertakes. For instance "to increase the score of a dairy from 42 points to approximately 70, there may be in 15-cow dairies an added expense of 5 cents per cow per day for labor, plus, in extreme cases, 5.5 cents for new or additional equipment, and if we add 5 cents a day for the extra care and risk of the owner, there will be an increase of 15.5 cents per day per cow."

The product of a cow ranges from 4,000 to 10,000 pounds of milk a year, or from 5 to 12 quarts a day. The added expense would, therefore, amount to about .5 to 1 cent a quart and in exceptional cases where all new equipment and construction is required it may go as high as 2 cents a quart. The added actual labor and the remuneration of the proprietor in increased salaries without any new construction or equipment, would increase the expense from 1 to 2 cents a quart. This added expense of improved methods and equipments, however, would no doubt be partly offset by increased production and economy of feed and fertilizer so that the net extra expense is likely not more than 1 cent a quart average (Cir. 170 U. S. D.). Further than cleanliness the farmer must furnish a standard product. A customer receiving rich milk or cream one day and poor the next naturally accuses the farmer of adulteratting the one. He at least knows that something is wrong and if the case continues he soon changes milkmen. Each dissatisfied customer generally takes two or three friends with him and in gaining back that trade there is as much expense as delivering the milk or cream and many times a lower price has to be accepted. If a dairyman is delivering 10 gallons of cream a day to a catering house or candy manufacturer and that cream varies in fat per centage, as it naturally will unless a good hand is at the separator, from 3 to 6 per cent the customer is soon going to adjust matters or get a new dairyman. The consequence is that the farmer nearly always looses the trade and the good-will of the customer until it becomes hard for him to get a market, and when he does it is usually several cents a gallon below his former price. This is why so many of our private markets, by which the farmer should be benefiting instead of the middleman, are supplied by centralizing plants. Standardizing can be easily and quickly done by the method outlined above with little or no additional cost to the farmer. After standardizing the product it should be properly cooled, and covered or it will take on bad odors, flavors, etc., and the bacterial count soon soars into the millions. Such a product is not standard, is not fit for food and may even be expensive as a gift, while clean produced milk, well cared for until used is an economy at several cents above the ordinary prices.

In summing up we can readily see by the facts presented that the present day market conditions are in a bad state in sections while in other sections they seem fair and justifiable. We cannot lay the whole fault upon anyone class of people. It seems that it is due to producer, corporations and consumer alike. The producer has not sensed the necessity nor when he did sense it, take the necessary means of furnishing a first class product—and in many cases a decent one,—and he has failed to perform duties in marketing which he should have done. Others seeing the advantage have taken it and then crowded the farmer as far as possible in order to obtain large profits.

On the other hand the consumer has not demanded a better product and even when furnished was not willing to pay the price hence the producer had to neglect decency of production until he was remunerated for producing something better. Then when we look to the corporation and see what cause it has given for present conditions we cannot help noting how it has crowded, pinched, and even robbed the producer of all that little share of profit earned by hard labor, risk, and unpleasant dealings.

The farmers have not realized what has been going on, they have been uneducated, unskilled, selfish, independent and poor while those benefiting by their labors have grown wealthy, and sneered at their requests. Those who have taken advantage of education have profited thereby and in such sections we see the greatest of prosperity, neighborliness and enjoyment. They have joined hands and worked together toward one common end, keeping in mind, of course, individual interests but at the same time meeting the requirements of the times with united efforts. They have found that "where there is union there is strength;" (and thus are trying co operative buying and selling) and that by putting upon the market a first class product, clean, uniform and attractive they have raised the present they receive of that product in final value from approximately 37 per cent to 67 per cent. Those who have not profited by suggestions and fellowmens experiences are still plodding along working for a mere existence, awaiting the arrival of a be

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SALT LAKE CITY

ter market and better times. They have waited a long time but still they have longer to wait; markets are being too well catered to by those who sense their value for any one to expect a turn unless that one helps to make it.

I have shown clearly that dairying carried on properly is a paying business not only from the direct profits realized but from the indirect profits accuring from increased production of farm products and in maintaining fertility and increasing land values. It is clearly demonstrated that the farmer must make a business of marketing his products the same as the manufacturer does of his; he must furnish a uniform product of standard quality—if not a little above,—and he must learn to unite his every effort with his coworkers in order to compete with those who are holding him down because of the advantages he heretofore has let pass. When the farmer learns to cater to anything special and sees those special products which are in favor, as for instance Mr. B. near Port Oregon did, and when he learns to create a market for that which he can best produce, then—and not until then—will he make a great success in agriculture; (he may produce four times what anyone else can but of what use is it unless it brings him returns).

This of course takes time and money but we have yet to see a market for any product except absolute necessities which sprung up spontaneously. The population has had to be educated to eating many of the foods that today are classed as necessities. If the farmer can make a palatable, attractive and valuable product in his dairy that is of economical importance to him, why can he not create or stimulate a market for it and thus bring manifold business to his efforts; and, a farmer producing such, if it is liked and is as nutritious as something else why should not his fellow agriculturalists help to create a market by buying it and giving a good word for it.

From the foregoing one must conclude that agricultural success, be it dairying, trucking, fruit or what else, lies in good markets, and that, markets are created, not born. In order to create, or obtain markets it is necessary to meet a certain standard with the product for sale, and to work unceasingly by united effort through educational sources to increase the net income from that market, but never to sacrifice quality or honor for unearned profits such as some of our middle men are doing.

FAMILY COWS AND HOME FINANCE

Keeping a family cow and feeding it forage that would otherwise go to waste may seem a small contribution toward winning the war. But if every farmer who has no dairy cow would do this and if residents of villages who have good sized yards and gardens would likewise adopt the suggestion, they would greatly assist the U. S. Food Administration as well as better their own standard of living.

We know from the experience of European refugees that when a man with a family is crushed financially, the last thing he gives up is his cow. No other creature comes so near being a second mother to the human race. But with our prosperity here in America, a great many families that could maintain a family cow to advantage have turned to the practice of buying milk. And when milk is difficult to obtain they stint in its use or go without it altogether.

R. F. Flint, a dairy specialist of the U. S. Department of Agriculture, has given considerable thought to this matter and offers valuable counsel on the desirability of family cows during war times. In his opinion, the small amount of time devoted to the care of a cow is an excellent means of utilizing spare time profitably. Whereas an hour a day devoted to a small home dairy may have been a doubtful economic practice, years ago when milk sold for five cents a quart, it is profitable now when milk is worth about double that figure. In some localities, investigators have passed farm after farm that had no cows whatever and only the milk available was in tins. Well informed people also appreciate the value of milk as a food more than ever before.

The family cow under present conditions has these outstanding points to commend her. She will pay a good dividend on spare time devoted to her care and, she will utilize grass and odds and ends of feed from the garden, thus helping to conserve the nation's resources. She will be an educational factor worth while to the children of the family. Knowledge of producing forces comes handy in every walk of life.

In a more personal way, the use of abundant milk and cream on the table and in cooking means well-nourished and stalwart families—the vital strength of a nation.

UNUSUAL INTEREST MANIFEST IN WATER RIGHTS LEGISLATION

By O. W. Israelsen, U. A. C.

There has in all probability, never before been a time in Utah at which greater interest has been manifest in the problem of enacting laws which will more suitably control the use and distribution of the States water supply. Recent investigation in various parts of the State in co-operation with the Utah Water Rights Commission indicates a rapid growth of public sentiment in favor of more careful public supervision of the State's waters. It seems that the majority of irrigators as well as others who are interested in irrigation development are beginning to recognize clearly the fact that more careful control of the water supply must be had in order to protect irrigation interests. Moreover they realize that the survival of agriculture by irrigation is dependent on more systematic and accurate control of the use of water. This attitude is particularly strong in the newer sections which are desirous of preventing excessive waste of soil fertility by water-logging of land. Many of the leading colonizers on the new projects in this state realize that in only seventy years Utah has water-logged nearly three hundred (300,000) thousand acres of valuable land and they are deterimned to devise means whereby this may be prevented upon the new projects.

THE PUBLIC HEALTH

By Dr. E. G. Titus.

Montaigue said many years ago, "To die of age is a rare, singular and extraordinary death. It is true no machine, not even the human one, no matter how perfect, can run or be run continuously; it will wear out. While the famous "One-hoss Shay"

"Went to pieces all at once—
All at once and nothing first—
Just as bubbles, when they burst."

Neither human beings nor any other class of delicately complicated machinery usually passes out of existence in this manner. In the natural course of events some one piece, some one organ gives way, and in spite of good care and clever management the living mechanism breaks down and death ensues. Though wear and tear do gradually bring about the halting, irregular movements of age and the "rust of rheumatism" may invade the joints and injure their bearings, too often the real cause is outside of the machinery. Too many farmers over this country leave costly and valuable machinery standing in the fields to rust and weather away, but they are few in proportion to the human beings who care even less for the most delicate and complicated machine known—the human body. When theoretically death should be the final stoppage of all the machinery by general debility of each and every organ and part; it practically is brought about in most persons by the destruction through pure carelessness of some one organ, which thus deranges the whole body. Very often this carelessness is not a fault of the individual who is injured, but of the general public among whom this indivdual chances to reside. It is becoming more and more evident as we study the causes of death that the science of health is but in its infancy. Another term at present coming into use for the science of health is Sanitary Science. The principal function of this new science is the prevention of premature death. A remarkably small percentage of all the deaths of human beings are caused by natural causes, and all other causes can be classed as permature. At present we are not in a position to undertake very much supervision over many of the constitutional forms of disease, yet even these may often be prevented by proper care in surrounding the ailing individual with the right environment. However, when we come to the environmental disease the problems directly open to sanitary science are varied and numerous. Accidental and violent causes of deaths: falls, freezing, burning, drowning, murders, fall more under the care of officials especially designated to prevent such environmental troubles and in any event effect but a small proportion of the general population. The great majority are, however, preventable under proper regulations of living.

The present great field where sanitation must be employed is that of the infectious diseases, and by this term we here include many diseases that do not at the time of their occurrence cause the death of the individual. They often do so injure some organ or tissue of the body that it will not thereafter properly perform its part in maintaining tn health and well-being of the individual. Sooner or later other overworked parts become involved in the general destruction that must take place when one part of the mechanism continues to be faulty and death occurs; caused in reality by an evironmental condition that may have occurred for but a few moments many years before. A condition perhaps of a lack of enforcement many years before. A condition perhaps of a lack of enforcement of some simple sanitary measure well known to all. Later we will hope to illustrate this with cases that will bring the vitalness of the mater home to al lof us.

The necessity of sanitary laws is now apparent to the majority of the population, but the necessity of the enforcement of those when applied direcently to you and me does not always seem to be so parrent. Education along the lines of the necessity of sanitation is needed in every community, and it will be the purpose of the articles which follow to endeavor to give the most salient features needed along these lines. Education is not only "telling," it must include "doing," and you can often best instruct your neighbor by yourself doing the things needing to be done. Especially is this true in protecting yourself and your neighbor against the environmental diseases and primary causes of death.

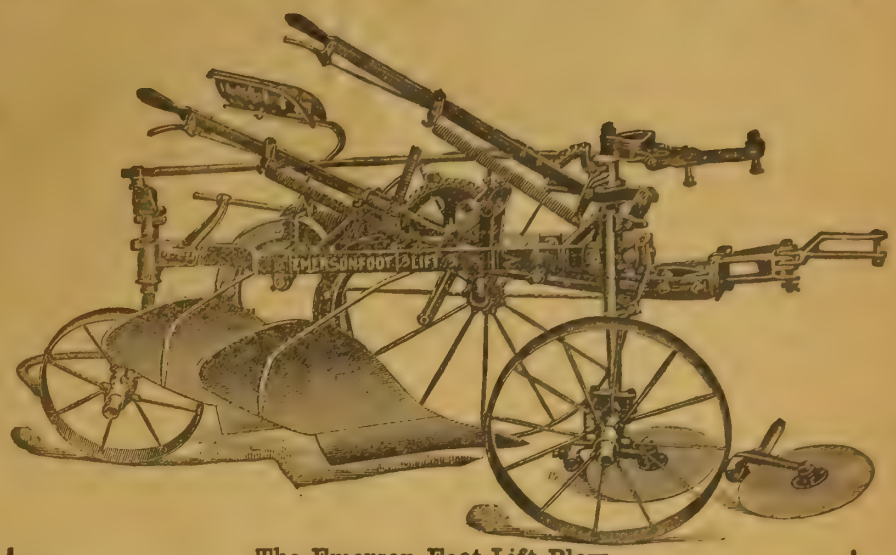
UNSPOILED

The lady who likes children was gushing over Helen, aged three.

"How old are you, darling?" she asked.

"I isn't old," said Helen. "I'm nearly new."—New York Times.

Emerson Foot-Lift Plow



The Emerson Foot-Lift Plow

Both levers on the Emerson Foot-Lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the Plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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Better than other Hogs—

BERKSHIRES

BALLAMOAR FARMS BERKSHIRE HERD
has the best blood of the breed.

Young stock for sale.

Caine Livestock Co.

RICHMOND UTAH

HOME

EAT NEW CORN

Dry and grind at home and know the delicious nutlike flavor of new corn meal. Why eat last year's corn while harvesting this year's? Why lose the very best there is in corn by not using it when it is fresh, clean, and sweet? These queries, by the United States Department of Agriculture, are directed at those who have always eaten old degermed corn, and have never known the delicious nutlike flavor of new corn meal. In some States, says a corn expert of the department, this flavor is unknown or is merely a matter of memory with the old settlers.

Be a Miller at Home.

For less than $5 a hand mill and sieves capable of making excellent meal can be bought, and for less than $25 may be purchased a mill large enough for a community. It can be installed to be run by water, wind, gasoline, or other local power.

Instead of merely eating more corn as a necessary war measure, it is urged that Americans should appreciate and exercise the privilege of eating better corn. Instead of degerming corn to prevent its spoilage, and instead of bleaching and scouring it to remove odors and impurities, it might better be eaten while it is still fresh, pure, and sweet. To have this privelege the meal must be ground locally from new corn. Yet practcally all of the commercial meal of the Northern and Western States during the fall months when this new corn is readily available is the product of old degermed commercial corn. In November some of the crops dry enough to leave the farms, and the meal from this corn does not get back to the farmers until December or later.

Animals Know What Is Best.

Squirreds, coons, dogs, and other animals relish new corn and even refuse to eat old corn unless compelled by hunger. Rats and mice usually eat only the germ—the richest and best part of the krenel—and leave the rest. This germ, highest in flavor and food value, is not available to man in the ordinary corn meal of commerce. In that form one is likely to get stale corn, from which rats and mice have previously eaten the choicest part, and degerming machines have removed the rest to prevent further spoiling. "Why," ask a specialist, "should we make our corn products so poor that they can not spoil? Why pay the freight both ways, and several commissions, only to get corn meal with 3 per cent of its oil removed, when home grinding would give a more wholesome and palatable product at less cost?"

The excellence of this new corn meal has long been—but wrongly—ascribed to waterpower and burrstone grinding. The method of grinding has nothing to do with it. The meal is good because it is fresh and from the new whole grain. It merely happens that in parts of the South where the people know and appreciate the good quality of this fresh, sweet meal, it is ground largely in the waterwheel mills using the old-fashioned millstones. As soon as the corn is ripe it is dried in the sun and then used while it is fresh and clean. In the commercial meals the germs have been removed because the oil they contain is likely to become rancid after storage, and this tends to spoil the whole product.

Americans, it is urged, are under obligation to eat more corn, because of starving nations and a world scarcity of wheat; yet Americans are eating less corn than they ate years ago. Corn-producing countries are the ones that should eat it, because it is at its best when it has not been transported long distances. For all of these reasons, the United States Department of Agriculture suggests that American families return to the simple-life ideal and make their own meal and hominy at home during the fall and winter months.

JAMS, JELLIES AND PRESERVES

Possibly the price of butter has already suggested the use of jams, jellies and preserves in larger quantities than usual. But aside from the saving in cost, there is a national service as well.

Butter is readily transported and exported, whereas these other products, which are usually put up in glass jars, lend themselves best to home or local consumption. Eat as much as possible of the home-grown products, thus releasing foods which naturally flow in large commercial channels for shipment abroad.

Jams, jellies and preserves do not have the same kind of nutriment as butter and are not a substitute, but the judgment of the American housewife and mother is sufficient safeguard against an excessive reduction of butter consumption.

PATRIOTIC BREADS

Here are some recipes which include the use of corn meal, rye and barley flour and other products which, if generally utilized, will release more wheat for export to our allies. These patriotic breads are easy to make and they will help in the patriotic movement, advocated by the United States Food Administration, to save wheat for our fighting men and our allies.

Rye Muffiins

Sift together 1 cup of rye flour, 1 cup of white flour, 1 teaspoon of salt and three level teaspoons of baking powder. Beat up 1 egg, add 1 cup of milk and combine with the dry ingredients. Add 1 tablespoon of molasses and 1 tablespoon of melted fat. Bake in hot, well-greased muffin pans twenty-five minutes.

Oatmeal Muffins

Stir 1 cup of rolled oats and 1 tablespoon of fat into 1 cup of hot milk. Boil 1 minute, then allow to stand until luke warm. Soften 1 yeast cake in ¼ cup of luke warm water and add 1 tablespoon of sugar. Combine the two mixtures. Add 1 cup of flour and 1 teaspoon of salt and beat thoroughly. The batter should be stiff as for drop biscuit. Cover and set to rise until light—about an hour. Fill well-greased muffin pans two-thirds full. Let rise until light, then bake twenty-five minutes in a moderately hot oven.

Barley Scones.

Sift together 1 cup of whole wheat flour, 1 cup of barley flour, ¼ tea-

IWAN POST AUGER
has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.
Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.
IWAN BROS.
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Show this advertisement to your dealer
With Straight Edge
Genuine Iwan Augers and hay knives wholesaled by: Consolidated Wagon & Mach. Co., Stewart-Peterson Hdw. Co.; Salt Lake Hdw. Co.; Zion Co-op. Merc. Inst.; Salt Lake City; Geo. A. Lowe Co.; Ogden, Utah.

The FOOD of The HOUR
is the food that proves its economy on a basis of food value—the greatest amount of nutriment at the least cost.
Ghirardelli's Ground Chocolate is an ideal blend of two ideal nutritious foods—cocoa and sugar.
By using Ghirardelli's Ground Chocolate freely and wisely—in place of other less nutritious and more expensive foods—you will save money and aid in food conservation.
Ghirardelli's
Ground Chocolate
Comes in ½ lb., 1 lb. and 3 lb. cans.
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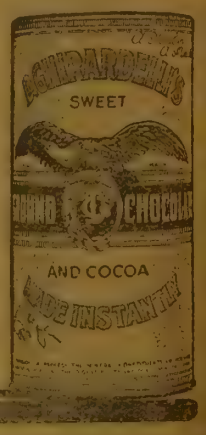

Have You a Son of Your Own?
Is there any other young man in your community in whom you are interested?
Are you anxious for these young men to succeed in life?
Do you know that more men fail because they are not suited to their work than from any other cause?
These questions will help you to decide whether or not you should have the new book, entitled
The Young Man and His Vocation
by Dr. Franklin Stewart Harris of the Utah Agricultural College.
Dr. Harris has made a special study of the industrial needs of young men. He has prepared two manuals on vocational subjects for the Young Men's Mutual Improvement Associations, and he is thoroughly familiar with the problems of the young men of the West.
His book contains the cream of his writings on the subject.
Can you afford to have your son get along without this book? Send $1.25 Today to the
BOOK DEPARTMENT—THE UTAH FARMER
Lehi, Utah.

spoon of salt, and 2 teaspoons of baking powder. Work into this 2 tablespoons of fat. Add 1-3 teaspoon of soda to ¾ of a cup of sour milk. Combine the two mixtures to form a soft dough. Turn out on a floured board and knead lightly. Roll out half an inch thick, cut in diamond shapes and bake in hot oven.

Crisp Corn Cakes.

Sift together 1 cup of yellow cornmeal, 1 cup of flour, ½ teaspoon soda and ½ teaspoon of salt; then stir in 1 and ½ cups of sour milk. Add a beaten egg and beat batter five minutes. Add last 1 tablespoon of hissing hot fat. Pour into hot greased pie plates in a very thin sheet and bake in a quick oven until brown.

Creole Sweet-Potato Biscuit.

Boil and mash very fine enough sweet-potatoes to make a quart. Add ½ teaspoon of salt, 1 tablespoon of sugar, 2 tablespoons of fat and 1 cup of milk heated to boiling point. Soften 1 yeast cake in 1 cup of luke-warm milk which has been previously heated to boiling point and add this gradually to 1 cup of flour to form a sponge. Allow the sponge to rise and drop back. Then combine it with the potato and other material. Add 1 well beaten egg, 3 cups of flour and mix thoroughly. Set to rise in a warm place. When light drop in biscuit from a tablespoon on a greased tin. Do not handle dough. Let biscuit rise until light and bake from fifteen to twenty minutes.

BAKED PINTO BEANS

A delicious dish of baked beans may be made by using Pinto beans as follows: Soak two cupfuls over night, and in the morning add one-half teaspoonful of soda and enough fresh water to cover them, and put them over the fire. As soon as they come to a boil, drain and pour cold water over them, rinsing thoroughly. This gives them a firmness which keeps them from getting mushy. Lay a thin slice of salt pork in the bottom of the pan. Add a small chopped onion to the beans, and pour all into a pan or baking dish with the slice of pork and bacon at the bottom. Take a few more slices of pork or bacon and press them down into the beans. Add a little salt, a pinch of ground mustard, and a tablespoonful of molasses. Cover with water, set in a slow oven, and bake 6 to 8 hours. As the water boils away, add more being sure it is always boiling, as the addition of cold water will retard the cooking. They will be a beautiful brown when cooked, moist and tender.

POTATOES SAVE WHEAT

Americans, if they would think of the humble potato as a "breadstuff," rather than merely as a "vegetable," would find that they could spare much bread from their diet without inconvenience, the dietetic specialists of the United States Department of Agriculture point out. The potato—Irish or sweet—differs from almost all other common vegetables in that it supplies important amounts of starch, and starch is the chief food element we get from bread. Green vegetables, with which potatoes often are classed, supply little or no starch and energy, and are valuable in the diet principally for the mineral substances and acids they supply and for giving bulk to the diet. Potatoes, of course, supply valuable mineral substances useful in the building up, repair, and regulation of the body, but they have won their great place in the diet of a large part of the world because they supply starch which otherwise would have to be obtained from cereals.

More Potatoes, Less Bread.

The more potatoes you eat the less bread you need at the same meal. Potatoes, of course, contain a larger percentage of water than does bread, so that weight for weight they are not equivalent to bread as a source of starch and energy. As a general proposition, however, one medium-sized potato (6 ounces) would supply about as much starch as two medium-sized slices of bread (about 2 ounces). Five parts of potato are equal to one part of cereal in a mixed diet. Therefore, those who make potatoes an important dish safely can cut down the amount of light or hot bread, wheat mushes, or macaroni they eat at that meal, and yet supply their bodies with this important food—starch. Wherever potatoes are locally plentiful or relatively cheap, especially in the case of the early or summer crop which does not store well, housewives are urged to use them plentifully at all meals as a substitute for wheat.

The more potatoes you eat the less bread you need at the same meal.

STORING VEGETABLES

By storing, it is comparatively easy to keep such vegetables as beets, carrots, cabbage, celery, dry beans, dry lima beans, onions, parsnips, potatoes, sweet potatoes. With the exception of beans and turnips, these crops may be stored in the cellar, in pits or banks, or in caves and outdoor cellars.

Pits or banks should be made in a well-drained location. A shallow excavation some 8 or 10 inches deep and of suitable size, should be made. This is lined with straw or leaves and the vegetables placed in a conical pile on this material. The vegetables are then covered with straw and then earth, the depth depending upon the severity of the winter. The pits may be covered with additional straw, corn stover and manure during very severe weather. The outdoor cellar or cave is even more satisfactory but the entailed expense is greater.

Beans may be kept in any dry place such as the attic or pantry. Now is the time of the year to care for these crops so that they may be made available during the winter and early spring.

A bull with good beef blood is absolutely essential for success in raising baby beeves.

When you answer an advertisement always mention the Utah Farmer.

A wheatless ration for egg production has been found to compare favorably with rations containing wheat. In the wheatless ration the scratch mixture was 2 pounds of cracked corn and 1 pound of oats, while the dry mash was 3 pounds of corn meal and 1 pound of beef scrap. About equal parts of the scratch mixture and the dry mash were fed.

Now Let Winter Come

Mother is proud of her conservation. Every shelf is filled, with jars, glasses and crocks of good things to eat. Delicious desserts for many a winter's meal now please the eye and tempt the appetite.

For mother knows that jellies, jams and bottled fruit are good for the family.

She also knows that

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

is unsurpassed for preserving fruit. She buys her sugar in clean white cotton bags in convenient sizes—10, 25, 50 and 100 pounds.

And you should do likewise.

Made by

Utah-Idaho Sugar Company

Save The Fruit You Preserve

by double sealing the jars. After putting on the cap, just dip the whole top in Parowax. Then air can't get in to start fermentation.

Jellies cannot mould if Parowax is poured into the tops of the glasses.

Parowax is tasteless and odorless; guaranteed under the Pure Food and Drugs Act.

Sold by grocers and druggists everywhere in handy one pound packages.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Cheyenne Albuquerque Boise
Pueblo Salt Lake City Butte

Parowax

Heat All Your Home with One Register

When you get out of bed on a bitter cold morning, how much it means to enjoy real warmth throughout your whole house!

And when you come in from the morning chores, what a comfort! Then after a long drive it's royal to get into a house that is warm and cozy.

And it's all so easy—and so economical. For about the price you would spend for heating stoves, that would heat part of your house only, you may have all the house warm, by installing the thoroughly tested and widely known

PIPELESS CALORIC FURNACE

The Original Patented Pipeless Furnace

We guarantee a 35% fuel saving over the expense of heating your house by any other method when you use a Caloric Pipeless Furnace. Many of our customers say that they save half. This guarantee applies to coal, coke and wood.

You will not know real heating comfort until your home enjoys the balmy circulation of healthful warmth produced by the Caloric. All the heat of your fuel goes right into all your rooms through only one register, and circulates to the furthest corners uniformly, warming every nook and cranny with purified air.

Over a thousand people have written a book about the satisfaction of the Caloric, and many thousands more endorse what these say. The proof of its success is indisputable.

Let the Caloric dealer show you. If you don't know him, let us give you his name and send you our testimonial book.

The Monitor Stove & Range Co.
3334 Gest St. Cincinnati, Ohio

Farmers Will Support Liberty Loan

The State Farm Bureau met at Salt Lake City October 5th and elected officers for the coming year. Members from most all the county organization were present.

D. D.McKay of Huntsville was reelected president. C. L. Warnick of Utah County vice-president. A. V. Alston, who was secretary for last year, handed in his resignation some time ago. His reports and those of the treasurer were read and filed. Mr. McKay was given the privilege of selecting a secretary, with this in view, some one who could work with him in carrying out the plans of the organization.

This spring the farmers were not called upon to help in the 1st Liberty Loan, because they were asked to do everything possible to increase the production of food. They have done this part well and now have a good crop to harvest.

In the farm bureaus of the state are about 10,000 farmers and their representatives at the State Farm Bureau meeting pledged their support to the 2nd Liberty Loan. Pres. D. D. McKay's letter sent to chairman Bamberger follows:

"Dear Mr. Bamberger:—I am directed by the Utah state farm bureau to express the hearty appreciation of our organization for the support which the state council of defense gave us in advancing money to the farmers for seed during the past spring, and also to thank you for the valuable assistance which you rendered in numerous ways to aid us in crop production and conservation.

"Our bureau is composed of approximately 10,000 of the leading farmers of Utah. When the first subscription was taken for Liberty Loan, a vigorous solicitation was not made among the farmers. While our services were offered to the local bankers they apparently secured a sufficient number of subscribers so that it was not necessary to call on us, but the farmers of Utah want to be of some active assistance to your committee on the second Liberty loan and therefore offer you the services of our entire state organization. We will undertake to solicit personally our members and other farmers in behalf of the second Liberty loan.

"Will you please advise us in just what way we can work in your present organization?

"Again assuring you of our hearty support and with best wishes for the success of your undertaking, I am.

"Very respectfully,

(Signed) "D. D. M'KAY,

"President."

The farmers of the state may not be able to subscribe for any great amounts, but you will find them doing their "bit".

How to Secure a Bond

All subscriptions must be made through banks.

Any bank in Utah will accept your subscription.

Term of bond—maturity twenty-five years; redeemable at the option of the secretary of the treasury in ten years.

Denomination of bonds—Fifty dollars and multiples of $50.

Interest rate—Four per cent, payable seminannually on November 15 and May 15.

Terms of payment—Two per cent upon application; 18 per cent November 15; 40 per cent December 14 and 40 per cent January 15, 1918.

There is still another way that can be arranged for by those who can not buy on the terms given above. A payment of $6.05 down and then monthly payment of $5.00 a month for nine months, a total of $51.05 which cover the interest of the defered payment, these figures are made for a $50.00 bond and would be double the amount for two.

If for any reason you can not arrange with local committees or banks, tell us the amount you want to subscribe and we will see that arrangement are made so you can secure the bonds.

POTATOES FROM SEED

By E. R. Bennett, Field Horticulturist.

There is a great fascination in the so-called "creating" of new varieties. Varieties of fruits and vegetables come and go so rapidly that it is difficult for anyone to keep pace with them.

It is hardly worth while for the practical grower to attempt to originate new varieties, and it is decidedly poor business to adopt new varieties in a commercial way till they have been proven of value.

All new varieties of fruit and vegetables are produced in one of two ways, i. e., by bud variation—the mutations of the scientists—or by seedlings which may or may not be hybrids. New varieties of potatoes have come about in both of these ways. As an example of the bud sprout or mutation we have the White Early Ohio which is the same except in color as the common Early Ohio and the Red Peachblow which is a variation of the old White Peach blow. It is not uncommon to find abnormal coloring on any variety of potatoes.

A few years ago we found a Pearl (Pearless) potato in a field at Greeley, Colorado, which had a deep purple spot covering the eye or bud. Normally the Pearl is creamy white with a very delicate shell pink bud. We planted this potato in pots in a greenhouse, the purple eye in one pot, and the normal colored eyes in the other pots. The resulting tubers from the purple eye were all deep purple, resembling the Blue Victor in appearance, while the white normal eyes gave pure white normal Pearl potatoes.

New vraieties are more commonly developed from seed. True seed from potatoes is not uncommon with some varieties and in some climates. Some varieties as the Early Ohio, seldom if ever develop fruits at all.

Hybridizing the potato—that is, fertilizing the pistils of the blossoms of one variety with the pollen of another varety—has been done but it is a difficult and rather unsatisfactory process.

Most of the seed of potatoes is secured from the fruits that occasionally form on the vines in the field. These fruits are either self-pollinated, or accidentally cross pollinated generally by pollen of the same variety. In any case, the tubers produced from plants grown from seed will show a great variation in character, so that nearly as many different varieties will result as there are different plants.

How to Get the Seed.

The potato plant is closely related to the tomato. Its fruits (if it produces any) grow in clusters of from two to one-half dozen each of which is more or less globe shaped, green, and from one-half to one inch in diameter. If these fruits ripen they may be crushed in a dish, some water added, after which the mass should be allowed to ferment or rot for a few days. This will allow the seed to separate from the tissue, when they may be washed out in the same manner that tomato and egg plant seed are secured. Dry the seed and store in a dry place till spring as with other seed.

Potato seed should be sown in a greenhouse or hot bed, as the seedlings are delicate and weak; hence,

$1 Down Will Buy a $50 Liberty Bond

We can't all follow the colors to the firing line. We can't all go across the sea and fight on the battlefields of France. But every one of us can help—and every one of us MUST HELP.

Without money—without the millions and billions of dollars necessary to equip with the tools of war and supply with clothing and shelter and food that vast army of American boys who are offering their all to protect the sanctity of OUR homes, the hardships they will endure, the agony they will suffer—the life blood many of them will give, will be given in vain.

Every American—every Utahn, rich and poor alike, must provide his share of that money. Utah's allotment of the Second Liberty Loan is $12,000,000. There are approximately 80,000 families in the state. If each family subscribes to one $50 bond, barely one-third of the state's portion will be covered. This means that each of us must AT LEAST buy one $50 bond—and those whose circumstances will permit must buy more.

Two Ways to Buy a $50 Liberty Bond

$1.00 Down Plan
(THE GOVERNMENT'S WAY)

Cash With Subscription	(2%)	$ 1.00
Nov. 15, 2nd payment	(18%)	9.00
Dec. 15, 3rd payment	(40%)	20.00
Jan. 15, 4th payment	(40%)	20.00
		$50.00

Monthly Payment Plan
(THE BANK'S PLAN)

Cash with subscription	$ 6.05
9 monthly payments of $5.00 each	45.00
	$51.05

$1.05 charged by bank, is practically off-set by interest WHICH YOU GET on the bond.

For the same proportionate payments you can buy Liberty Bonds of larger denominations.
Your own bank, or any bank, will be glad to take care of your subscription.

Liberty Loan Bonds are a safe and profitable investment as well as a patriotic investment. Behind those bonds, which pay 4% interest, stands every resource of the United States Government.

Go to your bank at once. Set an example for your neighbors to follow—and show the brave boys who are offering their lives for the cause of humanity that you are backing them up with your whole heart and soul.

LIBERTY LOAN COMMITTEE OF UTAH

very susceptible to insect injury. The young seedling may be transplanted to the open ground or remain during the first generation in the seed bed. The tubers of these seedlings will vary in color and shape, and range from the size of a pea to that of an English walnut. The second generation will increase the size of the tubers, but full size will not be obtained till the third or fourth generation.

We have grown many hundreds of such seedlings, many of which were very beautiful potatoes both as to form and color, but out of the lot none of them were as valuable in a commercial way as such standard varieties as Netted Gem and Early Ohio. We read a statement not long ago that the fruits of the potato had become extinct because of the many generations of reproductions of potatoes by cutting of tubers. This statement was a little untimely, for the 1917 fields of Netted Gems are well supplied with the potato fruits, and if it would serve any good purpose we could secure almost any quantity of viable potato seed. For the most of us, however, better results in improvement in potatoes will follow if we confine our efforts to building up from the best plants we find in the field.

"The Bean and Pea Farmers Friend"

THE AMERICAN

DOUBLE CYLINDER

Bean and Pea Thresher

STRONG—RUGGED—EFFICIENT

Built in three sizes—14x14 inch, 20x20 inch and 26x26 inch cylinders, to meet the demands of all.

Threshes and cleans all varieties of beans and peas, and shreds their vines, as they come direct from the field, in one operation. Capacity and perfect separation guaranteed.

Clipper and Standard Fanning Mills.

"Does the work of a crew of men"

Send for our Latest Catalogue.

Consolidated Wagon & Machine Company

UTAH IDAHO WYOMING NEVADA

DEEP PLOWING ESSENTIAL TO BEST CROP YIELDS

Lord Ogilvy.

When soil comes slicks and fromed from the mold board, the soil is not in the best condition for plowing. It should crumble as it leaves the plow, not have the appearance of pottery ready for the fire.

No soil remains in its best condition for the plow more than a few days at a time. The fine, friable, well-drained soil soon becomes too dry and the clay soil, after remaining longer wet, becomes hard and baked.

Disking before plowing keeps either soil in the best possible condition the longest possible time. We will not take time to argue that point, for those who do not by now believe it cannot be convinced.

It is seldom we can plow all our soil as deep as we wish any one year, and the deep plowing is most suitably done in the fall except for such crops as potatoes, that being late planted gives the soil ample time to settle.

If ground needs deep plowing, however, and the season is particularly favorable, it will often be economical to turn the soil deeply in spring regardless of the fact that it will not be in the very best condition for the crop. Deep plowing is one of those things that must often be accomplished as we may, rather than as we will. It is difficult to settle a soil after very deep plowing for immediate planting, but sometimes it will pay to plant a later crop; moreover, a soil that is exactly right to plow deep will become compacted almost of itself, where a soil in poor shape for such operation will require endless work and even then lack a little of our desires.

The reason so many farms or their fields never get a deep plowing they need every two or three years is that their owners await the time when the sign is exactly right in all particulars to accomplish it and the particular conjunction of the stars in the heavens occurs but infrequently and often outside the plowing season.

So often the horse power, the time at our disposal, the crop to be planted, the moisture in the soil, its lack or excess, or some other darned thing or things are adverse to our purpose that if there is much acreage that needs deep turning it becomes imperative to devote ourselves to it, not just at such times as it is eaisest and most convenient, but when it can by any means be economically accomplished. Once the farm has been plowed over in the right way the amount of deep plowing to be done is one season will cause no worry.

A great deal of advice is still rampant never to turn up more than one or two inches of new soil at any one plowing. This is an old prejudice out of the East that needs to be discarded. It is evident that if it is followed no farm will ever be deeply plowed within a time that will be material to us. What is good advice is not to turn up a lot of raw subsoil for crops whose seeds can only be planted in the raw stuff that cracks and bakes and is very likely to cause poor germination, subsequent crusting and cultural difficulties. But for crops that can be planted three or four inches in depth, what lies on top is of little movement. The root bed is more important in many cases for coarse, strong growing plants than the immediate seed bed in which they germinate. Germination is, of course, a necessary prelude to any kind of growth, but it is ridiculous to consider it as a matter of any difficulty, with the big or small cereals and to sacrifice the later condition for this factor.

With the exception of beets, alfalfa and a few other farm crops it is the depth of the root bed and its area as a moisture bed and a feeding ground that determines the tonnage of the crop, not any difficulty in attaining a stand or the particular character of the few inches of soil that may have been turned on top.

So sure as this lower area is restricted, so sure will there be a failure to obtain the maximum possible yield. A good farmer concerns himself with the underground conditions and is not satisfied when he has made a little fair thin top on his acres while he has neglected the depths at which his crops must feed.

SOME FACTS ABOUT HAULING LOADS

A. C. Maxson.

Prof. King, in Physics of Agriculture, gives the following as the principal factors influencing the draft of loads on wagons drawn on level roads:

Smoothness of road.
Rigidity of road-bed.
Width of tire.
Diameter of wheel.
Distribution of load on wagon.
Direction of line of draft.
Rigidity of carriage (wagon).

No one will disagree with us when we say that a load moves easier on a smoth road than a rough one. The increase in draft is not the only result of a rough road bed. Wagons do not last as long and require more repairs when used on such roads. The roads themselves do not last as well as smooth ones.

A springy road bed caused by wet soil below the surface due to seepage or waste water standing the road ditches increase the pull necessary to move a load. The weight of the load causes the soil to give beneath the wheels so that where they touch the road the surface is lower than just ahead or backward. When the load is started in either direction the draft is increased because the wagon must move up onto higher ground which sinks as the load advances upon it, thus the load is moving up hill all the time.

Wide tires decrease the draft. This is a well known fact in connection with soft roads or field work. However, that wide tires decrease the load on hard roads or pavements is not so generally known.

In Bulletin No. 39 of the Missouri Experiment Station, Prof. J. H. Waters states that on Macadam and gravel roads wide tires reduce the draft from 24 to 26 per cent. On clay roads dry above and muddy below, wide tires reduce the draft 52 to 61 per cent. On meadow, pasture, stubble, corn ground or plowed ground the wide tires reduce the draft 17 to 120 per cent as compared with narrow tires.

When roads are deep with fine dust or thin mud with hard surface below, narrow tired wagons haul the easier. When the mud is heavy and sticky so as to roll up on the wheels, the narrow tired wagons haul easier than wide tired ones.

As the size of the wheels increases the power required to move a load decreases. The advantage gained in leading low wheeled wagons is at a sacrifice of horse power in moving the load. This can be overcome by having a low swinging bed between high wheels. Prof. King gives the following in the book mentioned:

"On dry gravel road, sand 1 inch deep, some small loose stone, the draft of a load 3762 pounds was 84.48 pounds per ton with 44 inch front wheels and 56 inch hind wheels; with 24 inch wheels in front and 28 behind the draft of a 3362 pound load on the same road was 110.2 pounds per ton.

"On plowed ground, harrowed, dry and cloddy the draft for these wagons and loads was 252.5 pounds and 373.6 pounds per ton respectvely. This shows a great advantage in favor of the higher wheeled wagon."

The writer has often noticed beet haulers loadng the front of a wagon when haulng a partal load from a soft and wet field. This practice is no doubt the outcome of the belief that the nearer a horse is to its load the lighter the pull. While this is true it must not be forgotten that the wagon, plus the load on it is the real load and that the distance from the wagon and not from the load on the wagon determines the draft.

King gives the following reasons for placing the heaviest load over the hind wheels: "1st., because they are larger and will not depress the road bed so much and will draw easier if they do; (2nd., when the wheels track (and they always should) the front wheels make a road, by firming the ground over which the balance of the load may be more easily drawn; 3rd., when the axle of the front wheel is free to be turned as in a common wagon the slight inequalities of the road bed tend all the time to keep the tongue vibrating so that there is a strong tendency by this to and fro swinging to cause the front wheels to cut more deeply into the ground and thus increase the draft."

On dry sheep pasture and meadow lands the draft with the load on the front wheels was 129.3 and 229.9 pounds per ton and where the load was on the hind wheels 101.8 and 190.9 pounds per ton respectively.

The nearer the line of draft is to parallel with the road the easier the load can be moved. That is, the nearer the two ends of the tugs are to the same height above the ground the lighter the draft.

When traveling faster than a walk a load on springs hauls easier than on a rigid wagon. Heavy loads carried on springs over rough roads not only haul easier but there is less strain on the wagon and less wear on the road bed.

DOES EDUCATION PAY?

This is a question which every parent must ask himself. If we knew the measure of success which well-educated farmers are gaining compared with those with no education or inadequate educations, we could make up our minds as to whether it pays or not. The United States Office of Farm Management has dug up some figures which bear on the subject. These facts are derived from over five hundred farmers, of whom 273 are farm owners and 247 tenants. Four tenants and four owners had no education. These illiterate owners are pretty good farmers, for while they average only $15,000 each in property, they receive for their work an average labor income of $586. Four tenants also are illiterate, and are making their work pay them $680 a year each.

Two hundred and fourteen of the owners have common-school educations, and are worth an average of over $27,000 each; but their labor income is only $300 a year on the average. The tenants with common-school education number 186, and average $742 each for their labor income. Among the owners the 46 with high-school educations are worth on the average nearly $58,000, and are getting $650 each for their work while the 51 high-school men among tenants earn as labor income $1,268 each annually. The nine college men among the owners are worth over $42,000 each, and get labor incomes averaging $800; while the six tenants who are college men get the highest labor income of all, averaging $1,721.

"Labor income" is what a farmer gets after the payment of rent and interest on investment. While the labor income of the tenants is greater than that of the owners, the owners receive rent and interest on their greater wealth before wages are paid. For illustration, the college-educated tenants, allowing them six per cent. on their average capital of $3,351, would have a gross income of less than $2,000 a year, while the college-bred owners, allowing them six per cent. on an average capital of $42,781, have a total income to themselves of nearly $3,500 each.

There are many interesting things in this set of figures, but they seem to prove that even without land or inherited property the best educated farmers make the best livings.

Moral: Make your schools as good as possible, and bring as much as you can of the college atmosphere and benefits into rural schools.

LIVE STOCK

FARM FLOCKS OF SHEEP

There are two primary reasons for starting farm flocks of sheep in Idaho. In the first place, the nation normally produces but about one-half of its wool supply and will need in the months to come far more wool than in times of peace. The foreign supply is largely cut off and the nation's need of wool is so serious that unusual effort must be made toward increased production or the problem of clothing our armies and civilian population will be a most serious one. In the second place, a small flock on the farm yields a double source of profit in the mutton and wool and carries other advantages in connection with diversified farming. Wool now sells at 50 to 60 cents per pound. Lambs have sold in Chicago at the unprecedented price of $20 per hundredweight.

A plan has recently been proposed by which one million ewe lambs that would otherwise go to slaughter will be saved from the end and sent to farms in various parts of the west and middle west. The wool situation from a national point of view is so serious that the national government has encouraged this plan looking toward increased production of both mutton and wool. Certainly ewe lambs could not be sent to slaughter this year except for unusual reasons.

Many questions in regard to starting a small flock are coming to the Animal Husbandry Department of the College of Agriculture.

Purebred ewes are not necessary and if the farmer has had no experience with sheep he should start with grades. The farm flock should consist of 10 to 50 head of ewes. Less than 10 take time and attention and yield a small income. More than 50 become a large problem in connection with the farm unless special facilities are available for handling sheep.

Thrifty ewes with reasonably tight fleeces of fine, medium or long wool blood are suitable for foundation. The ram to head a flock should be a purebred of either black face or long wool blood. The Hampshire, Shropshire or Oxford ram sires growthy lambs of thick conformation that sell well for mutton. If one likes the long wools he should use a thrifty, deep bodied, strong backed and ample fleeced Lincoln or Cotswold. In Idaho the Cotswold is favored for the range and the Lincoln for the farm.

There are many important problems of farm flock management that require much space for discussion. Full information in regard to details of management on the farm are found in Bulletin 96 of the Idaho Experiment Station prepared by the Animal Husbandry Dept. A copy of this bulletin will be sent upon request.—E. J. Iddings, Animal Husbandry Department University of Idaho.

FATTEN EARLY PIGS NOW

Pigs which were farrowed early and are about six months old at this time, may profitably be finished now and rushed off to market, says the United States Department of Agriculture. The early fall market has been the highest market for a number of years, because the number of well-finished hogs arriving at this season is limited.

Pigs may be fattened quickly and cheaply on nutritious pasture when supplemented by a full grain ration. After deducting the pork which would have been produced by the same amount of grain fed in dry lot, every acre of these pastures produces from three to six hundred pounds of pork. The full fattening power of the grain is realized as well as a profit on the pasture consumed.

Pastures to Use.

In the corn belt and eastern states alfalfa, clover, and rape give best results. Pigs should be continued on these feeds until fat, usually for a period of six weeks at least: Alfalfa and clover may be pastured as long as forage is required, and they will produce the largest gains due to pasture. An acre of alfalfa furnishes pasture for fourteen to sixteen 150-pound hogs during this short fattening season, while clover will carry from three to four hogs less per acre. Rape is an excellent forage and although it does not produce as much pork per acre as the two legumes previously mentioned, it returns very good profits for the trouble and expense of planting the crop. It affords pasture for a period of four to six weeks for ten to twelve 150-pound hogs per acre.

Methods of Feeding.

If the pigs are hand-fed, it will pay to go slow the first week and gradually get them on full feed. After they are accustomed to the method of feeding, they may be pushed along as rapidly as possible without much danger from loss of appetite. Even on leguminous pasture some protein supplement, such as tankage, should be fed with the grain in the proportion of one part of tankage to ten or fifteen parts of grain. A daily ration equal to 4 per cent or 4.5 per cent of the live weight is the maximum amount of grain that a pig will consume.

The self-feeding method is a very efficient system of feeding during this period, and produces results equal to, or better than, those obtained by hand-feeding. Grain is consumed more rapidly and economically, causing the pig to attain a marketable weight in a shorter time and with a smaller amount of grain.

SKIMMILK CHEAP FEED

Young Pigs Make Faster Gains at Lower Cost on Protein Supplement with Corn.

Hogs fed some high-protein supplement in addition to corn make more rapid and cheaper gains and are worth more on the market than others fed corn alone for the same length of time. Skimmilk has proved one of the cheapest supplements for young pigs.

While pigs weighing 43 pounds gained only a third of a pound daily when fed corn alone for 15 weeks at the Ohio Experiment Station, others of the same age gained nearly a pound a day when fed equal weights of corn and skimmilk. Another lot fed three parts of skimmilk to one part of corn gained a pound and a third in the same test. Skimmilk had a higher feeding value, on a dry-matter basis, when fed in these proportions than tankage when it constituted 10 percent of the ration.

The value of the gain less cost of feed of the corn-fed pigs was computed at $10.21; of those fed corn and tankage, $12.38; of those fed equal parts of skimmilk to one part of corn and of the others fed three parts of skimmilk to one of corn, $22.07.

Skimmilk proved more profitable with these young pigs than with older animals. Pigs after weaning need about three pounds of skimmilk to a pound of corn. This amount of skimmilk may be reduced a half as the pigs approach maturity, animal husbandmen of the Experiment Station say.

The pigs fed equal parts of skimmilk and corn were worth 3.7 percent more on the market than those fed corn alone. Skimmilk was worth 65 cents per hundredweight when fed in equal proportion to corn valued at $1.68 a bushel, and 57 cents when fed with a third as much corn. Eight pounds of skimmilk fed with an equal weight of corn was equal in feeding value to a pound of tankage fed with nine times as much corn.

In the humid sections distribute the poisoned-bran bait for grasshoppers early in the morning.

Four parts of potato are equal to about one part of cereal in a mixed diet.

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—Reports State Department of Agriculture. And George L. Dillingham, past master of the New Jersey state grange, predicts eggs will go to $1.00 a dozen.

Cash in on your hens. You can increase laying and improve the health of your layers with Sloan's Liniment, discreetly mixed with food. Write us for full directions and convincing testimonials of the effectiveness of this remedy in epidemics of roup, bumble foot and other poultry ailments. Instructions Free.

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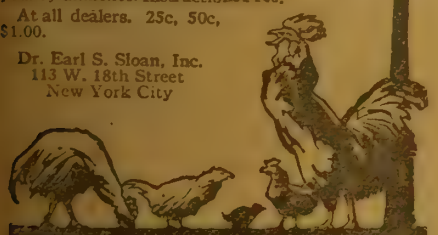

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Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

Sent in your orders for Butter Wrappers to the Utah Farmer.

CARE OF BROOD SOWS

The way a sow is handled before farrowing has much to do with the value of her litter.

The sow does best when she is kept in healthy condition but is not allowed to become too fat. Heavy corn feeding makes sows fat, and they are not likely to produce large, healthy pigs. For this reason breeding stock must be separated from fattening pigs if best results are obtained. Feeds that produce bone and muscle are best. Any one of the following rations supplemented by alfalfa hay in the rack will give good results:

(1) Corn, 1 part; shorts, 1 part. (2) Corn, 5 parts; shorts, 3 parts; oil meal, 1 part. (3) Corn, 3 parts; shorts, 4 parts; tankage, 1 part. (4) Corn, 8 parts; tankage, 1 part. (5) Corn, 1 part; ground oats, 1 part; shorts, 1 part. (6) Ground barley, 1 part; ground oats, 1 part.

MEAT SUPPLY SITUATION

Houston Secretary of Agriculture.

"You know the situation with which we are confronted. We should have needed to give increasing attention to the meat supply if no war had broken out. Seventeen years ago there were about 192,000,000 cattle, milch cows, sheep, and hogs in the nation; today there are about 12,500,000 fewer than 17 years ago. And yet in that period this country has gained a nation. It has added to its population 26,000,000—three quarters of that of France. Obviously the problem of increasing the supply of meat is one of the utmost concern. It is one of the three or four big tasks in the field of agriculture to which I have persistently directed attention during the last four years. But in this particular emergency it is immensely intensified. You know something of the conditions abroad. You know what war means in respect to the wasteage of materials of every sort, and especially in respect to the wastage of animals—of food animals, of draft animals. I do not know that it is possible—I suppose it is impossible—to get accurate estimates; but from all the indications we can get it is clear that the decrease of food animals can be measured only by tens of millions. You know also how difficult it will be to restore former conditions, to rebuild the foundations of the livestock industries abroad. Some of you remember the conditions in the South after the Civil War and recall how long it took the South to get approximately where it was before the war.

"The livestock men of this Nation have an enormous problem to solve—enormous if it were limited to the supply of meat for the increasing population of this Nation. But your task is much bigger. You are going to be called upon increasingly to furnish meat products in Europe, and also breeding animals. In this emergency, I have no doubt, you have been confronted with unusual situations. One of our thoughts in calling you here was to have you reveal to us what is in your minds, to picture to us your difficulties, and to see if we could not in co-operation arrive at some sound conclusion and develop a constructive program which would not only assist the Nation and your industries in this very troubled period, increase the meat supply of the Nation, bring relief to our own consumers and those of the nations with which we are co-operating, but also lay foundations which will make for orderly and constructive development after the war.

"The Department of Agriculture is especially concerned with problems of production, of conservation of farm and animal products and materials, and of marketing. The food administration is peculiarly concerned with the food supply of the nation. It is impossible to draw any hard and fast line between their activities, and the two agencies obviously must work in very close contact and co-operation.

"One of the problems in which both the food administration and the department are concerned is that of distributing—the possibility of distributing—surplus stock from sections of the country in which there may be a shortage of feedstuffs to sections of the country in which there is a greater abundance of feedstuffs and a shortage of livestock. Many sections of the United States are understocked. The average farm in Iowa has about 108 or 110 head of poultry; the average farm in North carolina, South Carolina and Alabama, on the other hand, has between 17 and 20.

The average farm in Iowa has about 35 hogs and the average farm in North Carolina and Alabama, about 5; in South Carolina, about 4. The average farm in Iowa has 6 milch cows; the average farm in North Carolina and Alabama less than 2; South Carolina, 1. Deficits in proportion appear in other states of the union. There is no sound reason for a continuance of this state of things. Many of the understocked states of the union have peculiarly favorable conditions for livestock development; and I am glad to say that some of these, especially in the south, have recognized the fact and are making marked headway. Since 1913 or 1914, there has been a tendency toward the increase of livestock in the nation, except sheep; and this increase has appeared very conspicuously in the south following the eradication of the cattle tick and the development of an active interest among farmers and business men."

FARMERS ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

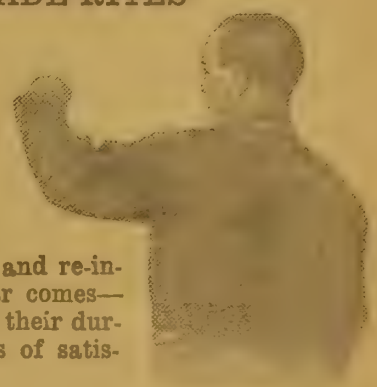
Utah Savings & Trust Co.

255 So. Main, Salt Lake

W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
F. M. Michelsen, Cashier.

Solve The Shirt Problem

By Buying "MADE-RITES"



You will learn what comfort and service a real work shirt can give.

They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

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For tickets and further information apply to agents SALT LAKE ROUTE, or write—
WM. WARNER, A. G. P. A., Salt Lake City.

How to Increase the Wheat Crop for 1918

Henry Harris.

One of the best ways to increase our crop production of nearly any kind is to have a proper rotation. This is true of wheat now than any other crop because it depends the soil of its fertility.

In Utah we look to our dry-farming for an increase of wheat production. Our irrigated lands should be used for more intense croping.

Many of our farmers made failure of their 1917 wheat crop on dry-land because they were over anxious to produce wheat and did not follow the practice of successful dry-farming.

We are learning that to grow wheat without irrigation certain methods must be followed or failure will result. The summer fallow, conserving the moisture of two winters for one crop is an important factor.

Whether we are dry-farming or growing wheat under irrigation, a few things apply to both methods for increased production.

Better tillage, a better seed bed, a little more time spent in putting the ground in first class condition.

Better seed, the securing of or selecting of good seed. No one thing will influence the crop like good seed. If we want to get better returns for our work, spend a little time selecting and growing beter seed or pay the other fellow to do it for you. In other words - you will not or can not spend the time to select or grow some good seed, you should, for your own profit and increased production, pay some man who will produce better seed for you.

What one farmer has done should inspire others to do, when it shows such good returns for time and money spent. He purchased one peck of extra good seed wheat, paying what seemed an extra high price. He planted it and gave it special care and that fall hand selected the best of the heads and the following year gave this seed special care, and after five years of careful selection, he is now producing ten bushels more per acre. This does not seem much but when you think he had 300 acres this year, you can easily see that three thousand increased bushels has paid him well for the time and effort he spent in producing the better seed grain he is now using. What is more, he is still continuing to select and produce some choice seed grain. He knows that it pays to do it.

Our government has established grain standards and this should and will help to improve the quality of wheat. Improved quality means increased production.

Favorable weather conditions has much influence on dry-farm wheat. Shortage of rain can be helped by better conservation of the moisture that falls during the winter.

Now is the time to secure your seed for planting. Do not be satisfied with just ordinary wheat for planting. To increase our wheat crop we must follow some or all of the suggestions I have given. We must be patriotic and at the same time make money.

CLEANING UP WASTE PLACES IN THE FALL

George McKerrow.

I would not know how to do good farming without sheep. Because my sheep use up the wastes of the farm. They clean up the grass, weeds, brush and gleanings, and in so doing turn into cash what otherwise would be lost.

Sheep, make the most economical gains of any kind of livestock because they clean up the odds and ends. They are particularly useful on the farm in the fall of the year, for they turn into mutton the things that otherwise would not be used. At the same time they save the feedstuffs that would be given them if they did not have access to these other things.

After harvest, my sheep are turned into the oats fields for a few hours the first day; an hour or two longer the second day; and the time gradually increased until at the end of a week they have complete possession of the fields. The lambs are permitted to enter the corn before it is cut and they clean up on the weeds and lower corn plant leaves. The lambs do not pull down the lower ears of corn as do the sheep. Roots are grown for the catle and sheep, and after the larger roots are hauled in to storage for winter's use, the sheep are turned into the field and eat the smaller ones that remain. Both the sheep and lambs are turned into the aftermath of the meadows and this brings them into winter quarters in good condition.

Another profitable practice on my farm is that of plowing up fields that become weedy after harvest. These fields are sown to rape and turnips, and later the sheep are turned in. They eat the rape and turnip tops with relish and will later hollow the meat from the turnip, leaving but a shell.

A frequent change of pasture is beneficial to sheep. A 36-inch woven wire fence in 20-rod length is moved about, thus preventing the too short cropping of the grass, and furthermore reducing the internal parasite plague to a minimum. Water is also an important consideration, and ewes particularly should have water the same as dairy cows.

I would not go so far as to say that there should be some sheep on every farm, for peculiar conditions might not make it practical, but I do believe that there should be sheep on the vast majority of farms in this country. They turn waste into cash. The sort of saving that the good housewife is making in her kitchen can be practiced with corresponding effectiveness by the use of sheep on the farm.

FAR THE BETTER-HALF

Smith—"How's everything at your house?"

Brown—"Oh, she's all right!"—Life.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

KIMBALL & RICHARDS,
"Land Merchants."

Within five miles of Salt Lake City, in the southeast, we have one of the most ideal farms and chicken ranches to be found in the state of Utah. This property contains 42 acres, six-room house, large barn, silo, place to feed the cows direct from the silo to the barn, good orchard, chicken coop, brooders. This chicken equipment has cost $3000 and is in first-class condition, all steam heated. There is a fish hatchery on the place. beautiful stream of water; ground planted this year to sugar beets, grain and other crops. This property can be had on a quick sale for $11,000. That will include all the machinery on the place, one good cow, all the chickens on the place. The potatoes have not been dug, the sugar beets are still in the ground and a lot of other crops still to harvest that will go with the sale of this place. If you are looking for a beautiful farm that is an all-around farm and chicken ranch and fish hatchery, with about forty acres of first-class ground, this would certainly appeal to you. We can make terms on this place.

Just below 14th South we have two acres at $500 per acre, 10 per cent down and ten years on the balance.

On 16th South we have one acre and a nice little home for $1200, easy terms.

We still have one farm belonging to the Keystone Steel & Wire company of Peoria, Illinois, for sale. These people have instructed us to sell this immediately. The farm is one of the best in the Bear River Valley, both from the point of improvements, location, soil and water right. The property contains 120 acres and has a beautiful home, granary, machine sheds, icehouse, hog pens, chicken coops, blacksmith shop—in fact, all the buildings that could be desired on any first-class farm. These buildings are in a fine state of preservation, having been well painted. This property lies on the main county road, a short distance from the town, and lies in such a way that it is easy to irrigate, being next to the main canal. This property can be had on 25 per cent down and ten years on the balance, 6 per cent interest. We are holding this at $175 per acre. This property is really worth $225 per acre. If you are looking for a farm that will pay for itself with your work, this certainly will appeal to you.

We have a number of farms for sale in Cache valley. One farm of 75 acres at $110 per acre. This property is under a high state of cultivation and lies in a good locality, near schools, churches and railroad station.

160 acres for $7000. This property lies under the canal and is splendid land. This property can be had for 10 per cent down and ten years on the balance.

At Farmington, a part of the old Bishop Secrist farm for sale, lying below the county road, and has been considered for years one of the best farms in Davis county. This farm can be had for $250 per acre. We are willing to give terms on this farm.

700 acres of dry farm land which has produced a wonderful crop this year. This property is one-half planted to summer fallow grain now; good house, barns and other improvements. The canal runs through the property and it is all subject to irrigation; one mile from the railroad station and lies in the center of the Bear River valley. This property has a combined harvester and all necessary machinery and can be bought for $55 per acre. We are willing to give good terms on this property.

In southern Idaho we have one eighty-acre farm, small house and outbuildings, all under cultivation and irrigation. Price $60 per acre, ten years to pay.

We also have one 40-acre tract, one 80 and one 160; all under irrigation, on the main line of the O. S. L. R. R., right near a good town, with every modern convenience. Price $60 per acre, ten years to pay.

We have on our listings at the present time about two million dollars' worth of land for sale on easy terms. We feel sure we can suit you as to price, terms and location.

KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street, Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land. I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

AN IDAHO RANCH BARGAIN

480 acres, all can be irrigated, two running streams across property, adjoins open range, eight miles from railroad station and two miles from school. All fenced and produces 200 tons of hay. Includes 150 cattle, 15 horses and all necessary machinery. Price $17,500, terms.

FEDERAL LAND CO.

Ogden Utah

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

STORAGE OF POTATOES—EVERYBODY USE POTATOES

(Continued from page 3)

weights from October on to months designated:

at end of
November had lost 0.46 lbs.
December had lost 3.14 lbs.
January had lost 4.14 lbs.
February had lost 5.54 lbs.
March had lost 6.60 lbs.
April had lost 8.00 lbs.
May (strongly sprouted had lost 10.00 lbs.
June (shrunken) had lost 17.00 lbs.

Saare found potatoes properly stored for ten weeks' time in cold cellar and pit, under favorable conditions, lost very little.

EVERYBODY USE POTATOES

By Dr. F. S. Harris, Director Agricultural College Experiment Station.

The war has caused a great scarcity in many kinds of food; it has made the price of everything so high that people could hardly afford to live if it were not also expensive to die. Many food producers have been called into the trenches, and many productive acres have been rendered desolate by the ravages of war. Thse conditions have so completely upset the food supply of the world that deep distress, if not actual famine, has knocked at the doors of many who previously had never known what it was to want.

This is a war in which food takes its place in the battle line with the musket and the cannon in deciding who shall be the victor. Not alone will the "fire superiority" of shot and shell determine the advance of the troops; the "fire superiority" of bread will dictate in tones of an absolute monarch which regiments shall advance and which retreat. As a factor, therefore, in winning the war, the nation must take every possible step to conserve its food supply.

Wheat, the most indispensable of the foods, is scarce. The world's reserve has gradually decreased during the period of the war, till now a shortage seems inevitable. This conditions would be very serious were it not for the fact that the potato crop is exceptionally large. Unlike wheat, potatoes cannot be stored from season to season; this year's crop must be eaten within the year or it will be wasted. Nor can potatoes be transported great distances, for their high moisture content makes freight rates prohibitive. Since they cannot be shipped in any considerable quantity to our allies in Europe, they must be consumed at home. We must allow them in part to take the place of grain in our own diet, and reserve the more concentrated products for the men in the trenches.

Fortunately potatoes may, to a considerable extent, be substituted for wheat. Although they do not contain all the nutritive elements contained in wheat, they are rich in energy-giving starch and may take the place of at least part of the wheat flour in making bread. Indeed, bread containing a high percentage of potatoes, if properly made, can scarcely be distinguished from that made entirely from wheat flour. Furthermore in the hands of a skilled cook many palatable and nutritious dishes may be prepared directly from potatoes.

Since potatoes will be plentiful and cheap, since they are too bulky to ship long distances and too perishable to store from year to year, since wheat is scarce and is needed for the men in the trenches, since the success of the nation at arms depends in part on the conservation of food, and since every true American is anxious to demonstrate his patriotism, what citizen can allow to pass this opportunity to serve by giving potatoes a prominent place in his diet?

POTATO RECIPES

A Potato Dish For Each Day in the Week.

It is said that potatoes may be cooked in more ways than any other vegetable, and a score or more variations are within the knowledge of any good hotel chef. Seven ways, one for each day in the week, beginning with Monday's Tuesday's, and Wednesday's dinners, through Thursday's lunch, Friday's dinner, Saturday's lunch, and Sunday's supper are here given.

Stuffed potatoes: (Monday) Cut baked potatoes in half, remove the pulp, mash it, add enough milk for the usual consistency of mashed potatoes, and season with butter, salt, and pepper. Fill the baked skins with this mixture, dot the tops with butter and bake for eight or ten minutes in a hot oven. To vary this add to the mashed potatoes, before the skins are filled, any one of the following: beaten white of egg (1 egg to 3 medium-sized potatoes); grated cheese (½ cupful to 3 medium-sized potatoes); chopped meat (½ cupful to 3 medium-sized potatoes); chopped parsley (1 tablespoonful to 3 medium-sized potatoes).

Scalloped potatoes: (Tuesday) Use raw, thinly sliced potatoes in layers, each layer to be sprinkled with flour, butter, pepper, salt; lastly pour in just enough milk to be seen through the top layer, and then bake for about an hour, or until the potatoes are tender. This may be varied by adding, in layers, hard-boiled egg, sliced; grated cheese; or minced ham.

Boiled potatoes: (Wednesday) Select potatoes of uniform size; wash them with a brush; and plunge them into boiling salted water (1 teaspoonful salt to 1 quart water). Cook them with the cover of kettle ajar, until tender, from 20 to 30 minutes. Drain the potatoes; remove the skins; dress the potatoes with butter if desired; and serve them immediately. If it is necessary for the potatoes to stand a few minutes before being served, cover them with a cloth, not a lid, in order that the steam as it condenses may be absorbed by the cloth and not returned to the potatoes to make them soggy. This is the reason for serving potatoes in an uncovered dish. The potatoes may be sprinkled with chopped parsley.

Potato salad: (Thursday—from Wednesday's left-overs).

6 cold boiled potatoes.
4 tablespoonfuls salad oil or melted butter.
2 tablespoonfuls vinegar.
½ tablespoonful salt.
Cayenne pepper.
2 tablespoonfuls chopped parsley.
Few drops onion juice.

Cut the potatoes in one-half inch cubes. Make a dressing by mixing thoroughly the other ingredients. Pour this dressing over the potatoes, and allow them to stand for 15 minutes. Drain off any dressing that may not have been absorbed by the potatoes. Garnish the salad with sprigs of parsley and serve with cream dressing or mayonnaise. To the salad may be added any of the following: 1 cupful chopped celery; 2 cucumbers, chopped; or 2 hard-boiled eggs, chopped or, as a garnish, sliced.

Mashed potatoes: (Friday) Thoroughly mash cooked potatoes. Add four tablespoonfuls of hot milk, one tablespoonful of butter, and a little salt and pepper, to each pint of potatoes. Beat the mixture with a fork until light and pile it lightly in a hot serving dish.

Mashed potatoes may be shaped into small cakes. Brown them in a frying pan in a small amount of hot fat. Mix with boiled codfish, or canned salmon, for fish cakes.

Potato soup: (Saturday—from Friday's left-overs).

2 cupfuls hot rice or mashed potatoes.
1 quart milk.
2 slices onion.
3 tablespoonfuls butter.
2 tablespoonfuls flour.
1½ teaspoonfuls salt.
Celery salt.
Pepper.
Cayenne.
1 teaspoonful chopped parsley.

Scald the milk with the onion; remove the onion; add the milk slowly to the potatoes. Melt the butter; add to it the dry ingredients; stir the mixture, until it is well blended. Add this to the liquid mixture, stirring constantly, and boil the soup for one minute. Strain it if necessary, add the parsley, and serve.

....Potato biscuit: (Sunday—from Friday's or Saturday's left-overs).

1 cupful mashed potatoes.
1 cupful flour.
4 teaspoonfuls baking powder.
½ teaspoonful salt.
1 tablespoonful butter.
1 tablespoonful lard.
Milk, about ½ cupful.

Sift the dry ingredients. Add these to the potatoes, mixing with a knife. Work the fat into this mixture lightly. Add gradually enough milk to make a soft dough. Toss the dough onto a floured board, pat and roll it lightly to one-half inch in thickness. Cut it into shapes with a biscuit cutter. Place the biscuits on greased pans and bake 12 to 15 minutes in a hot oven.

STEER CLEAR OF SCHEMERS

Would that some scheme could be evolved which would prevent the unwary from getting their fingers burned in dealing with worthless stocks! Almost every day there comes to attention the case of some poor soul who has over-invested in something which he had been led to believe would bring fabulous returns, but which later proved to be hardly worth the printing cost of the certificate. The distressing thing about it is that most of those who are thus defrauded are people who can ill afford to lose, and who therefore had no business to dabble in purely speculative projects at all. Instances are cited where widows, with scarcely enough to keep the wolf from the door, and in some instances with a family of small children to support, have become enmeshed in such deals, to find when too late that the money which should have gone to provide comforts for the little ones has been exchanged for a bit of paper valuable chiefly as a means of starting the kitchen fire. School teachers are said to be among the easiest victims, being especially susceptible to the suave arguments of the promoter, and appearing to have an inordinate tendency to yield to the allurement of anything that savors of the bargain counter.

Of course, these unfortunates are not wholly to blame, for they would seldom go into such schemes unless first persuaded or cajoled by an enterprising individual with the goods to sell. He is the one who paints the picture of success—he is the limner who applies the gorgeous tints which in many instances he thickly puts on with the deliberate purpose of concealing the dubious or worthless character of his offering. There are no tricks in the trade of the demagogue to which he is not willing to stoop—his sole purpose is to get gain, even at the expense of his nearest dearest friends.

There is only one bit of advice to be given to such as may come under this kind of temptation, and it as old as humanity: If you cannot afford to lose, keep out. This is not saying that those who are guilty of the reprehensible business of misleading should go scot free. On the contrary, we hope the day is not far distant when all such will be held responsible to the law and punished as any other cheat or thief is when the crime can be fastened on him.—Exchange.

STOP LEAKS IN GRAIN HANDLING

Careless methods in harvesting and threshing now cause losses of millions of bushels annually. Twenty million bushels of wheat and proportional quantities of other cereals are annually lost by waste in harvesting and threshing, according to estimates of specialists in the wheat districts of the West. One man with a team and fanning mill made $500 in three weeks last season cleaning up after threshing machine settings. Another man with a team cleared $27 to $62 a day by following and cleaning the waste from threshing machines. The losses incident to harvesting and threshing can be avoided largely, it is said.

In threshing special attention should be given to the adjustment of the concaves and of the separating machinery, to make sure that none of the grain is lost with the straw and chaff. Harvesting machinery should be adjusted so that there is as little loss as possible in cutting. Care should be taken also to harvest all grain in the corners, along the edges of fields, and in lodged spots. More than usual attention should be given to shocking in order that there may be as little waste as possible from exposure to the weather. If at all practicable, the grain should then be stacked as soon as it is cured and shocked. Stacks of bound or headed grain should be built carefully so that they will shed water.

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.

Virginia, Idaho.

"Home of the Champion Durocs"

FOR SALE

If my pigs don't make you money, don't blame the Duroc Hog, "Richard Defender," the champion boar of the West today. My young pigs are from him and "Richard Path Finder." My sows are also prize winners.

VICTOR R. FISHER

Oxford Idaho

Produce market wishes to hear from parties having all kinds poultry and fresh eggs for sale. Box 237 Ely, Nevada.

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.

Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

30 DIFFERENT MAGAZINES. Late issues. Value $3.00. Yours for 25c prepaid. Eastern Bureau, New Egypt, N. J.

PURE BRED, LARGE TYPE POLAND CHINA HOGS FOR SALE. Write A. C. Anderson, Box 1, Ephraim, Utah.

HORSES AND COWS FOR SALE

On account of using a motor truck and trailors, the State Mental Hospital, Provo, Utah, will sell four horses from 1300 lbs. to 1500 lbs. and five well-bred colts, one to three years old. Will also sell a few pure-bred Jersey cows and heifers.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.

Fairview Utah

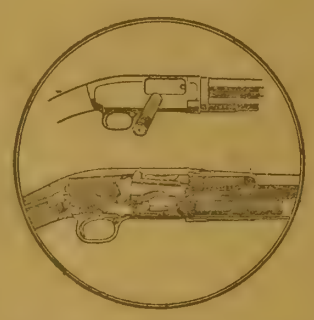
Even spread, maximum penetration. Winchester shot pattern brings down the game.

Winchester Model 12 Hammerless Shotgun.

The pattern that brings down the game

A perfect pattern may thoroughly cover the bird, but it's the high velocity of the shot charge that insures a kill. A game-getting gun must throw an *even* pattern with lots of steam behind it.

The Winchester Model 12 Repeating Shotgun is designed and bored to *bring down the game.* Its pattern shows a perfectly distributed shot spread with maximum penetration. That's why it is the choice of sportsmen everywhere.



Quick feeder, sure ejector. Throws empty shells to the side, out of your way

The gun for every sort of wild fowl shooting

Whether you're snap shooting at upland plover or trying a long shot down in the blind, there is a gauge and a bore of the Winchester Model 12 that will give you the pattern you want. This master shotgun meets every kind of bird shooting requirement.

The Winchester Model 12 is beautiful in design, light in weight, simple and sure in operation. It points like your own arm. It can always be depended on to plant its charge *closely, evenly* and *strongly* at the range its choke adapts it for. It works smoothly in whatever position it is held. For those who prefer a hammer action gun, we have made the Model 97. It is built on similar lines to the Model 12, but with hammer action.

The barrel *is* the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard of quality of the barrels on the highest and lowest priced Winchester guns. With Winchester the barrel *is* the gun and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel.

The Winchester barrel

The barrel of the Winchester Model 12 has been bored to micrometer measurements for the pattern it is meant to make. The degree of choke exactly offsets the tendency of the shot to spread. Until its pattern proves up to Winchester standard the gun cannot leave the factory. The Nickel Steel construction preserves the original accuracy forever.

The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that, with proper care, will last a lifetime.

What (P W I) means

This mark on the barrel means *Viewed and Proved Winchester.* This stamp stands for Winchester's guarantee of quality, with 50 years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times for smooth action and accuracy, and has been fired with excess loads for strength. At every stage of Winchester manufacture, machine production is supplemented by human craftsmanship. It is a *test and adjustment process.*

It is this care in manufacturing that has produced in the Model 12 and Model 97 guns of unsurpassed game-getting qualities that have won the name of "The Perfect Repeaters" among wild fowl hunters.

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Winchester Model 97 Hammer Shotgun

Take down Repeating Shotgun. Made in 12 gauge, weight about 7¼ lbs.; in 16 gauge, weight about 7⅛ lbs. The favorite with shooters who prefer a slide forearm repeating shotgun with a hammer.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 12 LEHI AND SALT LAKE CITY, UTAH OCTOBER 20, 1917

Sweet Clover and Its Use In Soil Reclamation

Department of Argicultural and Smelter By-Products Investigations. American Smelting & Refining Company. P. J. O'Gara, Director.

During the past few years the wide-awake western farmer has begun to realize that Sweet Clover has a decided place on his farm, particularly if he has a class of soil where the water table is close and the soil carries a high percentage of alkali.

This sweet clover field, seeded in February on the snow gave a mid-season cutting amounting to 1¾ tons per acre of cured hay and produced a second growth the same season which made excellent pasturage for all of the livestock on the farm until it was covered with snow.

The second year, this same field of sweet clover was divided into two parts. One part was allowed to produce only a seed crop. The other part was pastured and a seed crop also harvested. Strange to say, the part which was pastured gave a higher yield of seed than did the portion that produced only a seed crop.

There are thousands of acres of water-logged lands where it is difficult to drain, for lack of community effort. This illustrates one field that was reclaimed without drainage.

Showing mineral encrustation. On the higher parts of the field, a light spread of manure was used to keep the high spots from drying before the young plants were properly rooted. Sweet clover will tolerate more alkali than will any other useful plant.

Sweet Clover will persist in spite of these adverse conditions and will furnish not only a valuable crop return during the process of its cultivation, but will also renovate the soil and leave it in such an improved condition that other crops may be grown where they have failed before.

In April 1914 the American Smelting & Refining Company acquired an old run down farm in the Salt Lake Valley about 4 miles south and one mile west of Salt Lake City. Crops had been produced during previous seasons with only partial success on any part of the farm and had failed completely on one ten acre tract. This latter acreage lies four feet below the major portion of the farm and only two to three feet above the level of a large pond of alkalin water in an adjacent field.

This ten acre strip of land produced nothing but salt-grass and salt-weed in the poorer portion, and other native grasses in the better area until it was broken up and planted in 1911. Attempts were made each spring between 1911 and 1913, inclusive, to produce corn but without success, except on the higher portions of the tract.

When this farm was taken over in April 1914, water stood on the surface in all the low spots and the higher portions showed a heavy encrustation of alkali.

Drainage is the proper solution for such a problem. However, the drainage of this farm would involve the co-operation of several farm owners in the neighborhood. Therefore the idea was abandoned temporarily and an attempt was made to grow crops, even on the very worst land, by cul-

(Continued on page 12)

SUGAR BEETS

FALL PLOWING

It has been clearly shown that sugar beets will yield from one to three tons per acre more on fall plowed land than on spring plowed land, especially where the soil is heavy, taking an average for a series of years. This has a large significance, especially with high priced beets. A uniform stand counts heavily in the final yield of beets. It also counts heavily with grain. A prompt, uniform germination of any kind of a crop pushes the date of the first irrigation farther ahead. Very often, the first irrigation is made because less than one-third of the field is calling for moisture, whereas the remainder of the field would fare very well for several days and not show the need of additional moisture.

The timely rains last spring was a great help in bringing up spring sown crops. With the comparatively large amount of spring plowing, because of the early freeze last fall which precluded the usual amount of fall plowing, crops would not have fared so well this season, were it not for the relief which came through the timely spring rains. Some times, natural conditions help very much in an hour of real need.

There are now many tractors throughout this region. Perhaps some one with a tractor and plowing equipment could be hired to help out on the fall plowing.

With the increased returns in sight because of fall plowing, it is our opinion that it will be well worth while for the very busy farmer, and who is not busy at this time of the year, to seriously consider the advisability of hiring the fall plowing done with the man with a tractor. A larger than common price can be paid for the plowing and still yield a margin of profit well worth while.

In the spring of the year, the horses are soft and in no condition to do heavy field work. Many horses are reduced in flesh and strength, because of an undue amount of heavy spring plowing, which is always the most trying period of the year for farm horses, so that they are not in condition for many weeks, during the summer, to do their full share of the farm work. The saving of horseflesh in the spring, is an important item for considering, also.

FACTS ABOUT SUGAR BEETS IN UTAH.

By Clarence Mills, Payson.

Are all the farmers in Utah aware of the fact that Utah has ideal conditions for the Sugar Beets Industry?

The land is very fertile, and we are not dependent upon rainfall for the crop. The land now under irrigation is about one-half what could be irrigated if a more systematic use of the present supply was made. This will come in time, but the farmers could help a great deal if they would take irrigation problems more seriously. All this land is excellent for the production of sugar beets.

There are many things to consider in raising sugar beets. First of all is the selection of a suitable soil. This is not hard to find. A clay loam or sandy loam are perhaps the best, but numerous others are very good. The land should be level, in order to get the highest efficiency out of the irrigation water. The length of the irrigation rows should not be more than 30-40 rods, however 20 rods is really better.

Fall plowing is better than spring plowing for the reason, that the forces of nature, have a better chance to act on the soil during the winter months, making the soil easier to handle in the spring. A great deal of moisture is kept in the soil from winter storms. Deep plowing in the fall, (that is about 12 to 14 inches) should be practiced. This gives a greater chance for the air to penetrate to the soil depths, which is absolutely essential in the production of sugar and tonnage in beets. The roots are not stopped in their search for food, where the soil is loose and deep. It also retains the moisture better. If winters are dry, winter irrigation gives good results, and irrigation before or after seeding becomes unnecessary to cause germination.

The preparation of the seed bed is perhaps the most important thing. Great care must be taken in beginning work on the land in early spring. If the soil is too wet, it is easily puddled or packed, which is injurious to both plants and soil. A thin covering of fine barnyard manure, should be put on the land and disced in, with a disc harrow. The soil should be worked to a fine mulch, in order to retain the moisture, present in the soil. The seeding is generally done by the sugar company, with drills, planting four rows at a time. From ten to fifteen pounds of seed per acre is enough to insure a perfect stand if a good seed bed is prepared .

Some farmers advocate rolling before the beets come up, but when this is done, the land should be harrowed immediately after to prevent co-oporation of soil moisture. Rolling sometimes packs the soil, so it is not altogether advisable to practice it.

Cultivation should begin just as soon as the rows of beets can be seen. Diggers or discs are better for the first time, because they mulch the soil, and do not cover beets or injure the root system. The next should be done with weeding knives, followed by knives and crow feet. All this should take place before thinning. The blocking and thinning should be given very careful attention. A blocking hoe from 10 to 12 inches is best this gives the beets plenty of room to grow and makes the removal of weeds easier. In thinning one healthy beet should be left in a place. Weeds should always be kept out of the beets, because they sap the moisture and plant foods from the young plants. Cultivation of beets should be kept up from the time the beets are large enough until they are too large. It is better to cultivate the beets in the afternoon than early morning, because the beet leaves are very brittle in the morning, on account of excessive moisture, and are easily broken off, which cause a retardation in the growth. Good airation, is the result of a well cultivated soil.

Irrigation should be postponed as long as possible, without hindering the growth of the beets. The use of the soil auger is a great help to the farmers, for determining the time, and quantity of applying water to the soil. He is almost able to tell just when the plant needs water, and how much water the soil contains after. During the hottest part of the season the leaves often wilt, but freshen up during the night this is not on account of insufficient moisture in the soil, but the leaves evaporate it faster than the roots take it up. Beets should never be allowed to wilt for want of water, because it retards both growth and sugar production.

The furrow method is the best way for irrigating beets. It saves water, and keeps the hard crust from forming around the beets. The crust is very hard to mulch, thus evaporation goes on very rapidly. Beets shoul be cultivated as soon after irrigating as the soil will permit, unless the beets are too large. The frequency and quantity of irrigation is controlled by soil and climate conditions. But ordinarily from 4 and 6 inches to each irrigation 3 or 4 times a season is sufficient. This may seem a very small quantity when some farmers use 18 inches to each irrigation, but excess water is very dangerous to crops and soil. The length of the beet rows should be about 20 rods, to get high efficiency from irrigation water, while the number of rows irrigated at a time depends on the size of stream and condition of soil. Measuring the water is a great help to the farmers, and is not very expensive. One thing for the farmer to keep in mind is this: "The increase in yield is not proportional to the increase of water applied."

Crop rotation is for beets as well as for other crops. It not only increases the yield, but it keeps the fertility of the soil, and helps keep down the pests injurious to sugar beets. Good results have been obtained from the following. "Oats or barley one year; alfalfa three; potatoes one; and beets two years." Barnyard manure added when possible increases the yield. Beets should never follow a crop of oats, because oats foster the production of the "Nunotode," which is very fatal to sugar beets, and is rapidly spreading throughout the State.

SUGAR-BEET SPECIALS

I. D .O'Donnal.

Growing sugar beets promotes.

1. Thorough cultivation, which means better soil conditions and fewer weeds.
2. Crop rotation, which means better farming methods and even distribution of labor.
3. Dairying and livestock handling, which mean better incomes and maintenance of soil fertility.

Growing sugar beets decreases:

1. Danger of crop losses from hail or frost; the sugar beet is a hardy plant.
2. The cost of crops that follow; the digging of beets is as good as deep fall plowing.
3. Financial risk of changes in crop markets; the price of beets is known before they are planted.

Growing of sugar beets increases:

1. By 25 to 50 per cent the yields of crops following beets.
2. The market for forage through local increases in livestock business.
3. The price per acre of land and makes the price stable.
4. The population of country and town, making bigger and better local markets.
5. The supply of local, year-round available labor.

It Pays to Grow Sugar Beets.

The tops and crowns of sugar beets are equal to an average acre of alfalfa with a grain ration added in making beef and mutton.

An acre of beets will furnish 7 to 15 tons of tops for ensilage.

The beet pulp and molasses by-products from the sugar factory make excellent and cheap feed for stock. Pulp for old ewes and old cows and molasses for hogs and horses.

Sugar companies keep expert agriculturists in the field to help the farmers, without cost to the farmer.

Sugar beets make a paying crop for young orchards.

Keep one-fourth of your farm in sugar beets and after your crop rotation gets to working you will harvest as much from the remaining three-fourths as you do now from your entire farm.

Sugar beets are a good crop for small farms.

Sugar-beet districts are prosperous farming communities.

It is easy for a beet grower to get credit at the bank.

Handling of sugar beets requires good horses and good roads, and both are found in sugar districts.

Don't cry over spilled milk. Stop spilling it.

HIS PLAN

An Irishman who was rather too fond of strong drink was asked by the parish priest:

"My son, how do you expect to get into Heaven?"

The Irishman replied:

"Shure, and that's aisy! When I get to the gates of Heaven I'll open the door and shut the door, and open the door and shut the door, an' keep on doing that till St. Peter gets impatient and says, 'For goodness' sake, Mike, either come in or stay out!'"—Tit-Bits.

About Your Stock Feed for Winter

Don't wait until the "dead" of winter before you start to think about an adequate supply of

SUNRIPE

Stock Feed

This scientifically balanced feed will reduce your feed bills, and at the same time keep your stock in good condition.

Your dealer will supply you, or write—

Utah Cereal Food Co.

Ogden, Utah.

Before Winter

You should start right now to get your hogs in perfect condition before winter sets in.

By feeding

High Protein Tankage

you will find a marked improvement. The high protein content builds up hogs which have not done well, and keeps the other hogs in good trim.

It's a real economy to use it.

Ogden Packing & Provision Co.

Ogden, Utah.

Better anticipate your requirments now.

Cotton Seed Cake—Corn
Sunripe Stock Food—Hay

BROWN BROKERAGE CO.
Ogden, Utah.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, OCTOBER 20, 1917 No. 12

One Year's Feed

By H. Mendelson.

Most people handling farm animals have some idea what the animal gets each day. Very few have a correct idea what it costs to maintain an animal one year. On a considerable number of farms this spring the work could not be done properly because not sufficient feed was available, hay and oats having been sold in excess of the requirements.

Horses.

A horse with moderate work will need, per 1,000 pounds of live weight, per day, about 20 pounds of alfalfa and 10 pounds of oats.

If the horse is aged and has not good teeth, 15 pounds of alfalfa and 15 pounds of oats are better. In fact, while heavy work is performed it is better to give relatively more grain than hay. Therefore a sound 1,500-pound horse will need 30 pounds of alfalfa and 15 pounds of oats per day.

On well-managed beet farms there are 150 days' work for each horse per year, during which grain is fed. This means 4,500 pounds of alfalfa and 2,250 pounds of oats.

During another 150 days the same amount of hay is eaten, meaning another 4,500 pounds. We may assume that during 65 winter days the horse is pastured. Therefore the annual requirements of a 1,500-pound horse are 9,000 pounds of alfalfa (4.5 tons) and 2,250 pounds of oats.

This is about 1.5 acres of alfalfa and a little more than 1 acre of oats, or a total of 2.5 acres.

A farmer who takes pride in the appearance of his horses and wants to get most work out of them probably will feed more grain. Horses also often waste part of the alfalfa if the hay is not very good. Therefore the estimate given above is rather conservative for a 1,500-pounds horse.

An 80-acre beet farm will require at least 4 good horses, probably 4 heavy horses and 2 lighter ones. If the oats are raised on the farm we need from 6 to 8 acres of alfalfa and 4 to 5 acres of oats, or from 10 to 13 acres of produce which can not be sold.

Merely cutting down the feed is bad economy. An improperly fed horse can not perform as much work as one properly fed.

A horse with bad teeth will swallow a great deal of feed, but part of the oats are not chewed and pass out in the manure, furnishing the main sustenance of many a flock of chickens.

Quite a number of good farmers who feed sheep or steers every year prefer to buy wild hay for the horses and feed the alfalfa to other stock. This looks like an expensive method, but those practicing it stick to it every year and claim they get enough more work out of the horses and enough more value out of the alfalfa to compensate for the extra cost of the wild hay.

Milk Cows.

A good Holstein cow producing 7,000 pounds of milk, if fed on alfalfa, silage and barley, will need per year about 7,000 pounds of alfalfa, equal to 1.15 acres; 11,000 pounds of silage, equal to 0.70 acre; and 1,750 pounds of barley, equal to 1 acre; or a total of 2.85 acres.

Presumably some concentrate, like bran or cotton seed, could be bought to advantage, decreasing the amount of hay and grain necessary. A rough estimate would be that 1 pound of cotton seed equals 1.5 pounds of bran or 3 pounds of good hay.

If beet tops are properly fed, an acre would give the equivalent of about 130 days' silage. This would necessitate 7,050 pounds of silage or about 0.44 acre of corn silage with a yield of 8 tons per acre. Of course, the better the yield the less acreage is required and the more cows can be fed on the same acreage.

It is also not necessarily the best practice to raise food like barley. It might be better practice to raise wheat and buy the barley. The annual consumption is based on a daily ration of about 15 pounds of hay, 30 pounds of silage, and 5 to 6 pounds of grain during the milking period of 300 days.

A silo means more feed and balanced ration, increased number of livestock and a better bank account.

Beef Cows.

In the corn belt where the yield of silage on good farms is naturally higher than at our altitude with our shorter and colder growing season, beef cows are wintered on 3.5 tons of silage, equal to one-third to one-fourth of an acre, and from one-half to one-fourth ton of hay. Cows obtaining 30 pounds of silage and 5 pounds of clover or alfalfa hay per day gained well while in open feed yards. However, the minimum annual requirements of a beef cow are certainly not less than those of the milk cow, except the grain. Therefore, with our yields of corn silage

(Continued on page 14)

Potato Week October 22-27

(Written for Utah Farmer)

We have had apple days and orange days, now comes Potato week, Nationwide suggested by the United States Department of Agriculture. There are several reasons why more potatoes should be used. Potato week comes at a time when many of our farmers will be digging their crop. It will be a splendid time for those who have to buy potatoes to make their purchases, and store just as many as they can use during the coming season.

Our government hopes to encourage the eating of more potatoes because they are, at this time, the most available and economical starchy food. If we will use more potatoes and save the wheat, during a period when it is needed to send away to help our allies. Potatoes should be given a more general use as a substitute for wheat by all American householders.

Our potato crop is good and it will help in many ways if every home will store a few bushel of potatoes. The railroads can not handle all the crop at harvest time and storage will be necessary. It will greatly help the local situation if every one will help.

A more general use could be made, if the house wife knew more ways of preparing the potato.

It is not supposed that this potato week will of itself have much effect on the general potato situation, but it should call the attention of the people to the fact that there is a pleniful supply which should be used in domestic commerce, leaving the more readily transportable grains for export trade. In shipping potatoes about four-fifths of the weight is water; in shipping wheat only one-eighth is moisture.

The purpose of Potato Week is to increase the general consumption of this product and inform the people about their food value.

Here are a few ways that the potato can be served. At the present market price, potatoes are one of the most economical foods on the market. Of course, it is necessary to have other kinds of food to go with the tubers. The potato is a starchy food and the rest of the meal should be planned accordingly.

Mashed Potatoes.

There is one essential thing to remember about mashed potato which we so universally serve; it is that it must not be allowed to stand after it has been mashed and seasoned. It loses all its quality by so doing. So true is this that thousands of people do not know what true mashed potato is. If it must be prepared beforehand, pack it into a hot earthen dish, brush the top with butter or egg, and put into the oven for ten minutes. A tablespoon of cream to each two potatoes and an ounce of butter to four medium potatoes seasons them well, with the salt and perhaps pepper. It is best to have the cream hot, or hot milk may be used instead with a little more butter.

Potatoes Baked and Stuffed.

Potatoes prepared in a little different way from those sometimes put in to bake with a roast, in the last hour, may be done as follows: Peel as many potatoes of medium size as are needed, making them egg shaped or pyramidal, or in any form you please. Cut off one end so that they will stand and make them with the roast or by themselves. When done cut off the top, dip out the pulp, mash, and season, refill the potatoes, put on caps or part cut off, set in oven ten minutes, and then pour some melted butter over them before serving. Butter, cream, and egg yolk may be used to season the inside and some finely chopped meat or bacon and some chopped mushroom may be added. These may be made a decorative garnish.

Potato Noisettes.

Noisette means nut, a hazel nut, and vegetable noisettes are little vegetable spheres the size of a hazel nut cut out with a tiny scoop or round spoon cutter. One advantage of these is that they may be cooked quickly and are decorative. The cooking may be done in ten or twelve minutes. The cutting out takes some time and skill, but remember that the word used for this cutting is "turning," and the knack can soon be acquired. The scoop is buried in the vegetable and turned.

Fried potato noisettes are pretty and may be simply cooked in butter until a light brown, or in the pan with the roast, where they must be stirred and turned so as to brown on all sides.

Another way is to boil the little pieces for eight or ten minutes, just covering with cold water, to make them more mealy, and quickly brought to a boil. These can be drained and finished with butter or added to a sauce. In either case potatoes so prepared can stand in the oven cover-

(Continued on page 7)

DAIRYING

HOW TO BUY COWS

In buying a grade dairy cow it is seldom possible to secure any accurate information respecting her record, or that of any of her ancestry consequently it is necessary to rely upon the indications of milking qualities as revealed in the conformation of the cow.

The selection of cows for the herd should receive most careful consideration, and in setting out to buy one should not be goverened so much by the price which it is necessary to pay as by the kind of individual which it is possible to secure, provided, of course, that the price is not unreasonably high. With the present price of milk and cream a good cow will soon make the difference between her cost and that of an ordinary cow.

There are many important points to be considered but perhaps the first and most important is that of constitution. The strain upon the constitution incident to heavy milking begins to make itself felt unless the animal is possessed of that rugged form which enables her to withstand heavy strain without lessening vitality. In order to get this rugged conformation the animal must possess plenty of scale and substance, combined with a full heart girth, and deep chest. Any depression immediately behind the shoulder or behind the fore arm reduces the room for the vital organs, and consequently weakens the constitution.

Another important point to be looked for in choosing a dairy cow is capacity to consume feed, as indicated by the depth and length of barrel. In addition to this it will be found in cows that are heavy feeders, that they have large, clearly defined muzzles and large mouths.

Having secured constiution and capacity to consume feed, then look for quality in the cow. Coarse rough conformation is generally accomplished by a coarse, heavy hide, and this kind of a cow is invariably a light milker. The skin should be pliable and elastic, the hair fine and silky, the bone smooth and clean, and the whole animal should have a sweet, feminine appearance.

SKIMMING RICH CREAM SAVES FEED

In skimming a hundred pounds of 35 per cent cream, 15 more pounds of skim milk is kept on the farm than when the same amount of 20 per cent cream is taken. This saving can be accomplished by a turn of the cream screw, and at present feed prices is well worth the effort required. More skim milk on the farms also means more calves raised to furnish meat and milk for all. Milk producers are paid for the butterfat in cream; not for the water and other constiuents This makes it advisable to skim a rich cream, so that as much valuable skim milk as possible may be saved for feeding purposes.

LAMENESS IN A COW

Enterprise, Utah.

Utah Farmer:

Gentlemen:—I have a valuable cow that is effected with lameness. It seems to work on her similar to rheumatism with a person. It comes on in spells and lasts for a couple or three days and then is alright for a month or two then will come back and make her so lame that she can't step on that leg. Her ankle and kneecap are swoolen most of the time. If you have any remedy for lameness of this kind please answer through your next issue of the Utah Farmer.

Thanking you for same in advance.

A Subscriber.

Answered by Dr. H. J. Frederick.

It sometimes happens that cows are affected with rheumatism much the same as with human beings. Where we have a swelling as you describe it would be a very good plan to apply good liniment to the affected part once or twice a day by a brisk rubbing. Care should be exercised to determine whether or not there is any affection of the foot as this is very often the cause of severe lamenesses. An examination should be made to determine this definitely. When we know the cause of a trouble we can usually overcome the same. But it is necessary first to determine the cause. If the swollen parts are not reduced by the liniment a good blister could be applied once or twice.

COW LICE

Neola, Utah.

Utah Farmer:

Dear Sir:—I have a cow and calf infected with lice, I presume cow lice, they are of a black color and the size of a head louse. Please tell me how to get rid of them.

A Subscriber.

Answered by Dr. H. J. Frederick.

Where animals are affected with lice great care should be exercised as to their surroundings. Where they are kept in a stable or yard that is infected, this should be cleaned up at the same time that the animals are cleansed. A bath of some good coal tar disinfectant—as carbolic acid, creolin, or lysol, or kreso—in about a 2 per cent solution should overcome all the lice on the animal's body. This application should be repeated in about a week or ten days. If they are then allowed to run in clean surroundings, I believe the trouble will be overcome.

COW WITH CAKED UDDER

Bunkunt, Nevada.

Utah Farmer:

Dear Sir:—What can I do for the udder of a young heifer that is caked when her calf was about three weeks old? Lumps started at top of teat or on bottom of udder, I noticed a yellow blister at head of teat, the heifer had a good flow of milk and before milking time was in some pain.

The heifer became sick and ¼ of her udder became hard caked, I rubbed it with lard, soap and water three times a day, also used axle grease. Now there is still remaining a hard lump in udder as large as your hand, I get only a pint of milk from this teat. Now the teat behind this one is starting with a lump as the other one did at bottom of udder and head of teat. What should I do? and can I save the teats by continuing milking. Can I remove the hard cake?

Thanking you for the information I am

Your Truly,

Bunker Cox.

Answered by Dr. H. J. Frederick.

Where trouble of this kind affects a cow the best thing to do in the first stages is to massage the udder thoroughly using carbolized vaseline or olive oil. The sores that you say break out could be painted over with tincture of iodine or washed with a solution of sugar of lead. Care should be exercised that the cow is milked clean at least twice a day and oftener if the condition is serious. Rubbing the udder thoroughly after each milking is necessary. If the milk duct should be stopped it would be necessary to insert a milking tube so as to allow free discharge of the milk. If this is watched carefully and this treatment properly applied, the condition could be overcome. However, if it is allowed to continue for a great length of time it will be difficult to rectify. Cases of this kind should be treated as soon as the trouble appears to be successful.

MANGE OF ECZEMA

Sugar Station, Utah.

Utah Farmer:

Will you please tell me what to do for a pig that has got lumps on her neck and throat? They are as large as hens eggs and smaller, they are like raw meat all the time, has had them for two or three months the pig is about a year old.

Your paper the Utah Farmer is a welcome visitor.

A Subscriber.

Answered by Dr. H. J. Frederick.

It is very probable from your description that the pig to which you refer has some skin disease. This is usually associated with unhygienic conditions and also extreme of heat and cold. Light skinned hogs, or those having a light coat of hair are most likely to suffer. A sluffing of the skin may occur if hogs are allowed to wallow in pools of water. This may assume a number of stages of severity. Preventive treatment consists in avoiding conditions that may irritate the skin. Filthy surroundings should be avoided and the hogs kept in a thrifty condition. Hogs kept in muddy yards should be ocassionally washed or dipped in a 1 or 2 per cent solution of some good coal tar disinfectant. The affected spots on your hogs should be washed with about a 2 per cent solution of creolin or lysol and then powdered over with equal parts of boric and tannic acid. Be sure and exercise perefct cleanliness and I believe the trouble can be overcome.

GENEROUS

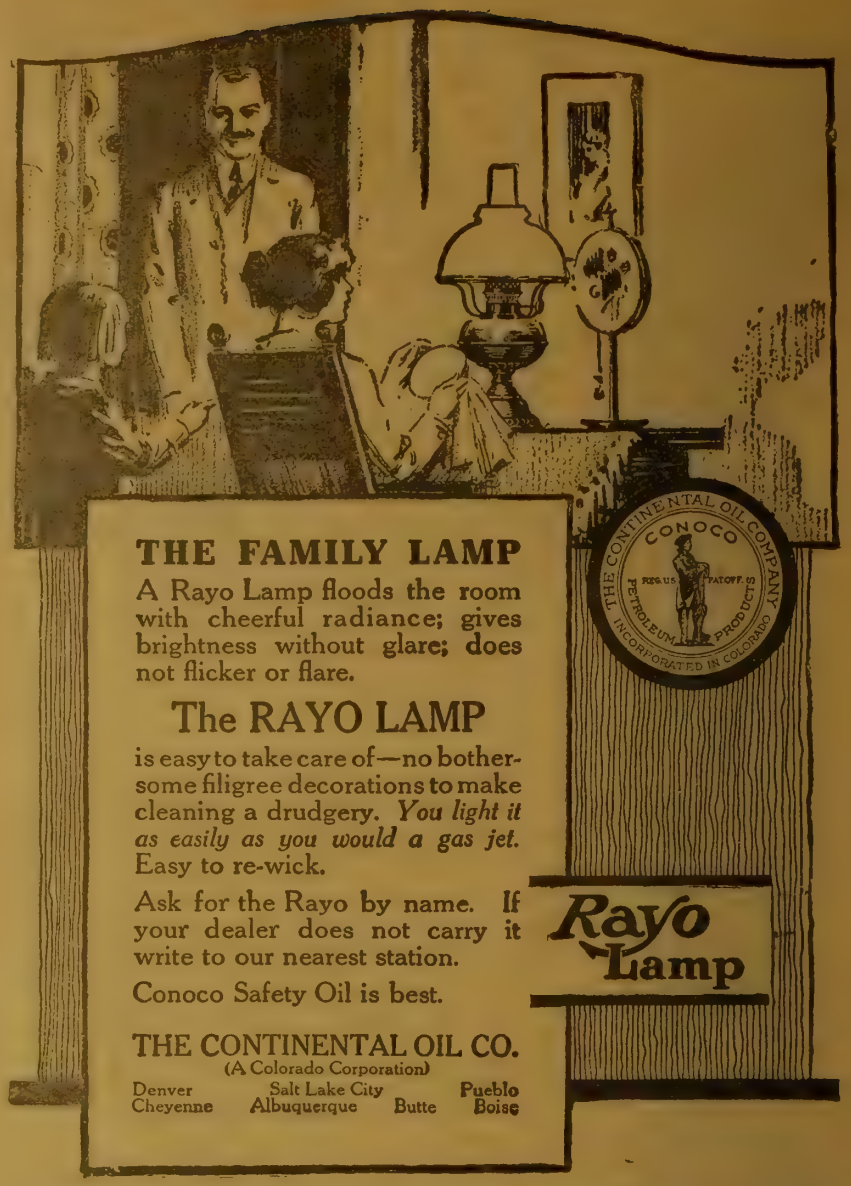
Patrick worked for a notoriously stingy boss and lost no chance to let the fact be known. One day a waggish friend, wishing to twit him, remarked:

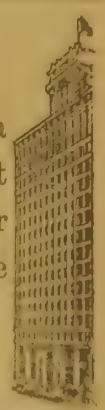
"Pat, I hear your boss just gave you a brand new suit of clothes."

"No," said Pat, "only a par-rt of a suit."

"What part?"

"The sleeves in the vest!"





You will find a cordial, helpful spirit at this bank, whether your account be large or small.

Resources over $9,000,000.

Walker Brothers Bankers

SALT LAKE CITY

IRRIGATION AND OUR NATIONAL FOOD SUPPLY

By Percy A. Cupper, Assistant State Engineer, Salem, Oregon.

War is the present business of the United States, and all the Nation's resources in men, money and supplies should be marshalled in a supreme effort to bring the struggle to a successful conclusion. Men are selected by draft; money is raised as needed; but for our food stuffs we must wait upon the slowly recurring seasons, with their attendant uncertainties.

The unusually dry season in Oregon and elesewhere, resulting in the partial or total failure of dry farm crops, brings forcefully to mind that irrigation on a sufficiently extensive scale will insure the Nation's food supply.

The World's need of American grown food stuffs will not cease in 1918, 1919, nor perhaps in 1920, and during this period of excessive demand and unusually high prices the irrigation farmer has an opportunity never before offered to make the irrigated farm a success. In other words, irrigation is more nearly a national necessity, and conditions more nearly guarantee success to the individual irrigator, than ever before.

The Federal Government has wisely provided for the construction of roads in co-operation with the various states, and conditions are now such that equal wisdom would be shown in providing for the irrigation of additional land and the production of crops therein.

While the sum which could be expended to advantage on irrigation at this time is a matter of conjecture, it is believed that $75,000,000 allotted by the Government for this purpose would be conservative. One-third of this amount could well be allotted for the completion of U. S. Reclamation Service projects, one-third in co-operation with the various states, and one-third in the irrigation and cultivation of irrigated land which would not otherwise be in crop. Projects which might be classified as U. S. Reclamation Service projects would probably include some irrigation districts and Carey Act projects upon which certain co-operation could be secured, so that no hard and fast line could be drawn.

It is obvious that the states would not be in a position to promptly put up dollar for dollar with the Federal Government, on account of inadequate constitutional and statutory provisions. Therefore the co-operation in order to be effective, must include the acceptance by the Federal Government of irrigation districts bonds and Carey Act liens. For example, the bonds of a feasible irrigation district project could be deposited with the Federal Government as security for the funds advanced for construction, the bonds drawing the same rate of interest the Government is required to pay. The same is true of Carey Act contracts and liens. It would of course be necessary to reduce all projects to the basis of the irrigation district. That is to say, the co-operation could be only between land owners or prospective irrigators and the Government. No Carey Act contracting company or private irrigation company could intervene. In order to insure the hearty co-operation of the state and its continued interest in the success of the undertaking, it should be required to directly contribute, at least to the extent of the administrative expense of carrying the plans into effect within the state. No money should be available for expenditure in any state except for the completion of projects undertaken after the state has had an opportunity to furnish funds, excepting on a dollar for dollar basis in cash or the deposit of state bonds with the Government. In all cases the land, water, and works must be held for the cost of reclamation. This is not a new plan. It has been advocated before; in fact, the Oregon irrigation district law, like many others, makes provision for financing in this manner.

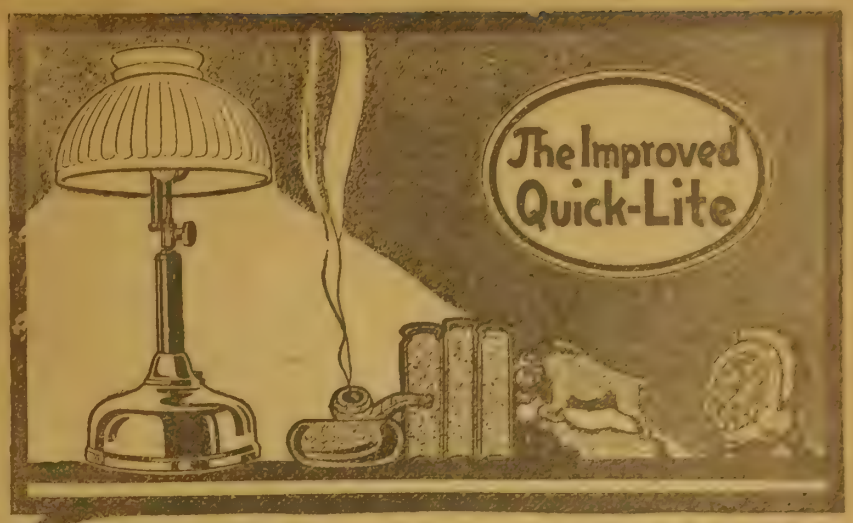
It is not enough that the irrigation works be constructed, but each acre for which the works are constructed should be made to produce a crop. Within the limits of practicability, every acre of land subject to irrigation in the United States should be commandeered, if necessary, and sown to wheat, making proper adjustment with the owner after taking into account the improvements to the land.

The question naturally arises: Could this be economically done? Would it not involve waste? Viewed from the conservative standpoint of ante-war conditions, it probably would not be considered economical. However, we must not overlook the high price of wheat, nor that the problem today is production, not purchase. Can it be accomplished in time to be of assistance to the Nation during the war? It is not safe to rely upon prediction: How long will the war last? It is not safe to rely upon predictions as to when the war will end. Who can say whether next season will bring forth rain or drouth, plenty or scarcity, food or famine?

Seventy-five million dollars is a large sum of money; not so large, however, as it seemed before this war which has taught us to think in billions. It is in fact less than the amount now expended by our nation every four days for war expenses. If this money, expended in some other way, it should not be used for tnis purpose. However, it must be borne in mind that irrigation is not only a war time necessity, but will continue in peace times as a great national asset, the cost of which will be repaid to the Government.

It would seem that all organizations and individuals interested in irrigation might well concentrate their efforts in the enactment of national legislation providing for irrigation development on a scale that will assist in meeting the needs of the Nation for a greater food supply.

Don't be content with doing your bit for the country; do your best.



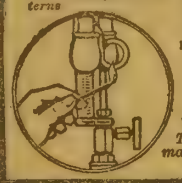
The Coleman Quick-Lite
—a Match-Lighting Gasoline Lamp

AFTER years of experience in manufacturing the popular Air-O-Lite gasoline lamps and lanterns we now offer the **Coleman Quick-Lite** as the most advanced, most pleasing, most economical and most brilliant light in all the world. The objection to gasoline lamps heretofore, the need of a torch to light, is now entirely done away with. You light the Quick-Lite with an ordinary match without trouble or bother.

The Quick-Lite **makes and burns its own gas** from ordinary gasoline, giving a brilliant, steady, white light of

300 Candle Power —mellow and cheerful, restful to the eyes, yet more light than **20 oil lamps.** Brighter than the brightest electric bulb, safer than the safest oil lamp, cheaper than the cheapest candles. Absolutely free from flicker, dirt, grease, smoke or soot. No bothersome wick to trim. No globe to wash. Simple and easy to handle. Fuel can't spill. No danger if tipped over.

The illustration below shows the new patented coil which makes the Quick-Lite different from and superior to all other lamps and lanterns



THE QUICK-LITE LANTERN Lights with a match, giving a brilliant light of 300 candle power, brighter than any other lantern. Simple, clean, easily operated. No smoky wicks to trim, no chimney to clean or break. Nothing to get out of order. Can't spill; can't explode; can't blow out; no danger if tipped over. Always ready for use. **Guaranteed 5 years.** Lasts a lifetime.

If your dealer does not handle, write nearest office for Catalog No. 70

THE COLEMAN LAMP COMPANY

Wichita, St. Paul, Toledo, Dallas, Chicago.

The Coleman line was awarded the Gold Medal at Panama Pacific Expositions in San Francisco and San Diego.

Mention the Utah Farmer whenanswering the advertisements.

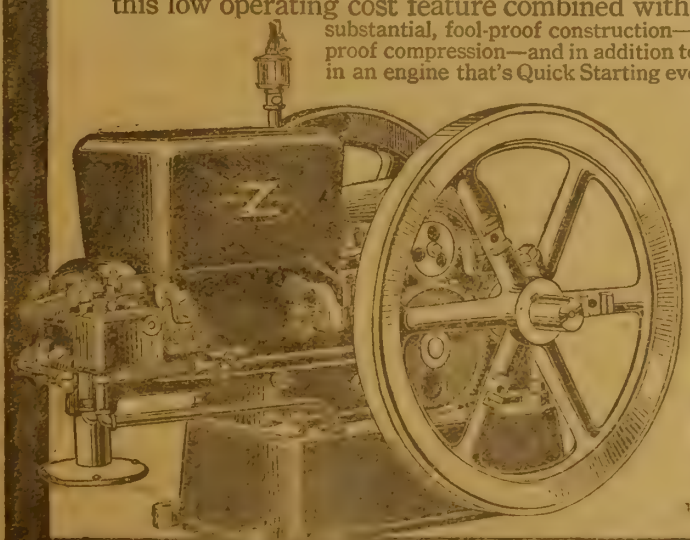
Save 50% By Using KEROSENE

The Fairbanks-Morse "Z" Engine is "Z" built for your work.

And it will do the work efficiently and economically. Powerful—lower in original cost and lower in up-keep—you'll find the type "Z" a money-making helper for you.

The 3 and 6 H. P. are REAL Kerosene Engines

—not just "adapted" for kerosene. The same power from a gallon of kerosene as from a gallon of gasoline—50% saving in fuel cost. They will use gasoline too. Think of finding this low operating cost feature combined with simplicity—light weight—substantial, fool-proof construction—gun barrel cylinder bore—leak-proof compression—and in addition to all this, Built-in Magneto—in an engine that's Quick Starting even in cold weather. The 1½ H. P. uses gasoline only.



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He carries it in stock and will gladly demonstrate its adaptability to your use and he's interested in keeping you satisfied.

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3 H.P. $89.00
6 H.P. $156.00
Both With Throttling Governor
1½ H.P. (Gasoline) $48.50 on skids
All F.O.B. Factory, With BUILT-IN MAGNETO

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

Entered as second class matter in the postoffice at Lehi, Utah.
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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the addess cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

CLEANING UP THE PLACE

A general good cleaning up in the fall is a splendid thing for several reasons. For the health of the people and the destroying of bugs, insects and the like. It always looks better. A "time of burning" is the right thing for weeds and rubbish about the place, and it should all be done before the fall rains start.

Provide a place to dump old cans, broken dishes and the like so they can be hauled off and destroyed.

Do not allow weeds, bushes and crop remnants to remain as a breeding place for pests you will have to fight next year.

You will always feel better if your surroundings are always clean and well kept. Right now is the time for a good cleaning up of the place.

KEEP THE OLD HEN

It pays to keep hens three years. They lay well for that length of time. It is a common practice to discard hens at the end of the first year if they have not laid well. Experiments at the Utah Station have showed this to be decidely unprofitable. Hens that laid fewest eggs during their first year were often good layers the second and third years. On the other hand, hens that made high records the first year often declined rapidly in egg production the second and third years.

These and other experiments which are of vital importance to the poultryman are described in bulletin 149. Those interested may obtain a copy by writing to the Experiment Station, Logan, Utah.

BURN THE WEEDS

Either burn, destroy or feed the weeds any way to prevent reseeding for next year. Think of the work next year you will have to do if the weeds reseed, and it seems that weeds have about 100 per cent germination power.

Winds and storms will shell and scatter the seed all over the farm unless something is done now to burn or destroy them. Time spent now means labor saved next year.

Weeds have a way of crowding out the tender plants you want to grow as a crop. They use the moisture that should be available for crop production. Make it a case of preparedness for next year. You will want to produce as large a crop as possible because prices will be high, so go after the weeds in some way.

FALL PLOWING FOR SUGAR BEETS

The experience of many years teaches that, for sugar beets as well as for many other crops, fall plowing is much better than spring. It is sometimes difficult to get a large part of the farm plowed in the fall, but every effort should be made to plow at least the land that is to be planted to beets. This crop requires a soil to be mellow to considerable depth and to be well filled with air. This condition is best obtained by plowing in the fall and allowing the land to be fallow during the winter. Now is the time to get the work done.

SEED CORN

In regions where corn is an important crop this season of the year is marked by great activity in selecting seed. The intermountain region has not been particularly noted for its corn, but now that silos are becoming so numerous corn will find a much larger place in our agriculture. Good corn cannot be had without good seed. If the crop is not properly harvested and if the ears are not allowed to thoroughly dry the germination of the kernels is greatly reduced. Sufficient moisture is held in the cob to cause the germ to mould. The grain when shelled may seem to be fairly good and yet the germination may be very low due to the fact that moulding took place while the grain was on the cob. Corn should be selected in the field, the best plants only being used. The ears should then be husked and put some place where they will dry.

CONSERVING LABOR

Probably no one thing upon the farm where the soil is heavy, counts for labor saving more than does fall plowing. Surely, there would be fall grazing on fields not plowed and with high priced forage, this additional grazing would help out very much but the advantage of having this green crop plowed under and allow the soil to get the value of this growth, for the benefit of future crops will nearly, if not entirely, offset the grazing value. The greatest value of fall plowing, particularly upon heavy soils, that will be put into beets, potatoes, grain or other spring crops, is the improved condition of the soil for the next crop and, last but not least, it saves time and labor of man and beast at the busiest period of the year, next April.

LIBERTY LOAN

"No true patriot will permit himself to take toll of our soldiers heroism in money, or seek to grow rich by the shedding of their blood. He will give as freely and with as unstinted sacrifice as they. They are giving their lives. Will he not at least give his money?"

Such are the words of President Wilson in a recent address. To buy a Liberty Bond will be helping with your money. More than that, it isn't a gift that the Government asks in this case, but one of the safest investments possible and at a rate of interest as good or better than most banks are willing to give you.

When you buy a Liberty Loan Bond, you are saving your country, its people and yourself, and in so doing you are helping the world in the great cause of humanity and civilization.

HOW WE GET ADVERTISING

We have many solicitors or canvassers whose duty it is to get us advertising, but first to investigate as thoroughly as possible and know that the article to be advertised is all right and the business methods of the firm strictly honest. We do this to protect our readers.

Sometimes we get fooled, but we do our best to be sure that every man or firm mentioned in this paper is reliable. Then our solicitor goes to the firm and asks for the advertising patronage. We tell them that The Utah Farmer has so many thousand readers; that these readers are prosperous, intelligent farmers who are likely to buy these particular goods if they are advertised in The Utah Farmer because our subscribers read this paper carefully each week and have confidence in what they see advertised in our columns.

We tell this business man that we are trying to make The Utah Farmer very helpful and very welcome in the best homes of our territory where he should be able to make good customers.

We tell him that we accept nothing but high class, reliable advertising so that we guarantee our readers will be treated fairly.

We tell him that our readers are greatly interested in The Utah Farmer and want to see it prosper and, for that reason, they are glad to give their patronage to the merchants who help support The Utah Farmer, by handling merchandise advertised in it. Then we tell the advertisers what it will cost.

That is one reason we ask your earnest support in reading our advertising columns and buying of these merchants whenever possible.

BE CAREFUL AT HARVEST TIME

When crops are good we do not seem to be so careful as we should. Time, money and much labor has been spent to produce the crop, why not get as much out of it as possible. To illustrate the point, take the harvesting of potatoes, how many are damaged by careless digging. Both by hand and by machinery, many tubers are damaged by cuts and bruises which prevent them from being sold as first quality of potatoes. The loss does not seem very much unless a careful count is made.

Are we as careful as we ought to be in rounding out and putting a good top on our hay stacks. Fall rains and winter storms will spoil tons of hay unless we are careful.

Other suggestions might be offered to make you understand what we mean by being careful at harvest time. The world today needs all the food stuff we can produce for them and you will in turn get more money out of farming if you are just a little more careful at harvest time.

Store your crops in the best way possible, if you can not market them at harvest time. Prevent any loss that might occur by being just a little more careful in preparing the place and the products you are going to store.

Food saved is like earning more money.

GOVERNMENT CONTROL IN WAR TIME

This is a time when old fashioned methods of doing things must give way to efficiency. In the past there has been no end of discussion about what the government ought to do and ought not to do; some said that it was exercising too much control; others, that it was not exercising enough. Now there is no time for idle discussion; the country must act and act quickly and decisively. On entering the war the nation arrayed itself against the greatest military organization the world has ever seen, and it must work on the principle of letting fire fight fire. Unless it adops every possible method of increasing its efficiency it cannot hope to win against a foe that has for a generation been perfecting its fighting machine.

Where the foe recognizes no right other than might, it must be met with might. We are placed somewhat in the position of the guard who, on being given a charge, was told to shoot first and ask questions afterwards. The country finds itself confronted by an enemy that must be vanquished even if the means required to accomplish this end do not conform to the theories of everyone.

The upsetting of the equilibrium in trade caused by the war and the difficulty of distributing food, clothing, and fuel would cause suffering before adjustment could be made by the slow processes of supply and demand. These conditions make necessary what might seem to be drastic measures on the part of the government. Apparent injustice in individual cases results from meeting the need of the many. In the interest of all and in order to insure victory, the government is entirely justified in exercising functions that it does not ordinarily exercise in times of peace.

HOME

SWEETS FOR SCHOOL LUNCH

Directions for Preparing Nutritious Desserts Suitable for Children.

Fruit and Nut Confection.

1 pound figs.
1 pound dried prunes or seedless raisins.
1 pound nut meats.
Confectioners' sugar.

Provides twenty-four 2-ounce portions.

Wash, pick over, and stem the fruits and put them with the nut meats through a meat chopper, and mix thoroughly. Roll out to a thickness of about one-half inch on a board dredged with confectioners' sugar, and cut into small pieces. If this candy is to be kept for some time, the pieces should be separated by means of paraffin paper.

This confection, in addition to being nutritious and well liked by children, has some value in preventing constipation.

Candied Fruit Peel.

The candied peel of oranges, grapefruit, kumquats, and other citrus fruits makes a good sweet which is economical because it utilizes materials which might otherwise be thrown away. Its preparation makes an interesting school exercise. The skins can be kept in good condition for a long time in salt water, which makes it possible to wait until a large supply is on hand before candying them. The salt water takes out some of the bitter taste. The skins should be washed in clear water after removal from the salt water, boiled until tender, cut into small pieces, and then boiled in a thick sugar sirup until they are transparent. They should then be lifted from the sirup and allowed to cool in such a way that superfluous sirup will run off. Finally they should be rolled in pulverized or fine granulated sugar.

Boiled Custard

2 cups hot milk.
3 egg yolks.
¼ cup sugar.
Speck salt.
Flavoring.

Beat the yolks slightly and add the the sugar and salt. Pour the hot milk over this mixture, stirring constantly. Cook in a double boiler, stirring until the mixture thickens and will form a coating on the spoon. Cool and flavor. If the custard curdles, beat with a Dover egg beater.

If the whites of the eggs are to be used, beat them very stiff and add three tablespoons of powdered sugar. Place by spoonsfuls on water which is hot but not boiling. Cover the dish. Test occasionally by putting a knife into it; when it is done nothing will stick to the knife. Remove from the water with a wire egg beater or split spoon and place on top of the custard.

AMUSING THE CHILDREN

An eminent statesman once said to be the mother of happy, contented children is the greatest thing in all the world, but to keep the little folks happy and contented is, as we experienced mothers know, no small task.

When the weather is fine and the children can play out doors, there are any number of nice things to do to pass the time pleasantly, but when bad weather, sickness or other things prohibit out-of-door activities, the busy mother is kept constantly on the alert to find simple amusements to keep busy restive hands and minds.

A healthy, normal child is never naughty when pleasantly employed doing something that interests him. 'Tis the idle child who is fretful and constantly getting into mischief. Many a farmwife's nerves are at the breaking point by spring, from being housed in for weeks in the winter time, with her little flock of active, noisy youngsters. To provide simple amusements for the little people, will relieve mother of much care and worry.

A little child will pass many happy days indoors if given a blunt scissors, an old magazine and a pot of glue. Show them how to cut out the pictures and paste them into blank books. It will prove doubly interesting for them to have a separate book for the different kinds of pictures. For instance, the animal and bird book have only the pictures of animals and birds, the baby book has pictures of all sorts of babies, and quite cunning this is, too, with its laughing, crying, baldheaded, yawning and all the other dear lovable kinds of baby faces. A book of the cut-out pictures of engines, autos and farm machinery is sure to interest the little lad.

The little girl enjoys the paper dolls which are easily made by cutting out the figures in the fashion page of the different magazines. She can have a very large family of them, and can also furnish an elaborate wardrobe of hats, dresses, coats, etc., by cutting out the different articles illustrated in the fashion pages. The hats have a crosswise slit cut to fit the head and the dresses and coats are cut with a flap to fit the shoulders.

Another thing I have learned from experience, is that children can get more real enjoyment from a ten-cent box of colored crayons than from many expensive tops. Many rainy, stormy days are pleasantly passed indoors by coloring the pictures in old magazines, and by coloring the dresess for the cut-out dolly family.

Making the card-board animals is fascinating work for nimble little fingers. These the children can easily do themselves, if mother will lend a hand by providing a pattern for each. For the animal family it is better to have light weight card-board or heavy paper. Make the animals with an attached flap at the feet, and then by bending this and pasting it on a small piece of card-board, like a platform, the animals will stand nicely. These look very realistic, after the youngsters have had the fun of coloring them true to life with their colored crayons.

The secret of successfully amusing little people is to provide simple innocent work for busy little hands, and when mother learns to do this, then there will be fewer frazzled nerves for her and less spankings for the children.—Amelia B. Reischer.

POTATO WEEK OCTOBER 22-27

(Continued from page 3)

ed and not lose in flavor as do mashed potatoes.

Baked Potatoes.

The most delicious potato, Irish or sweet baked. The oven should be very, very hot when the tubers are placed therein, then moderated to the regulation degree maintained for ordinary cooking, and an hour and a half consumed in the process. White potatoes, baked, combine well with cold meats of any variety. Baked Irish potatoes serve well as one of the vegetable making up any meat or fish dinner, but the baked white potato has qualities isolating it from every other form of potato, and is a dish unto itself.

Potato Cakes.

One quart mashed potato, seasoned with pepper, mace, salt, sage, and a hint of onion—one big one, cooked and chopped—with yolks of four eggs. Beat thoroughly, roll on mixing board, cut into cookies, dip into the beaten whites of the four eggs, then into flour or finely rolled toasted breadcrumbs, and fry in hot lard.

Potato Pancakes.

One quart cold mashed potato, 1 cup flour, sifted; 1 pint sweet milk, four eggs, four teaspoons baking powder, heaped. Thoroughly mix milk, potatoes, baking powder, then beat in the eggs, with a teaspoon salt. Fry as flapjacks, bake on a griddle, or add half a cupful melted butter, a tablespoon, heaped, flour, and bake in very quick oven in muffin pans. They are delicious either way.

Scalloped Potatoes.

Pare, then chop into not too fine pieces, potatoes enough to make two quarts. Butter a pudding dish; and butter several slices of bread, lightly. Put in a layer of potatoes, and sprinkle lightly with salt. Cover with the bread slices. Add more salted potato, topping with more bread, and continue until the dish is full—the last layer being bread, the buttered side up. Bake in a slow oven 45 to 60 minutes. Bacon and eggs, with cold slaw or cabbage salad are "good company" for this.

Creamed Potatoes.

Slice them thin, whether cold, boiled or raw. Heat a frying pan and put in enough fat of beef, pork or lamb to cover the bottom. Put the potatoes in, and cover scantly with water. Put on the cover, and cook until done. Drain off every bit of water, and shake the frying pan over the open fire for a few seconds, to let the steam dry out of the potatoes. Add salt to taste, and dredge flour freely over the potatoes, as they sit on the hot stove. Pour on milk or cream, and cover for a few seconds—after adding some more fat, of the sort used, a tablespoonful to a pint of potatoes. Turn over lightly, lifting from the bottom of the frying pan, so that none will stick. Put into a hot dish, and dot the top of the potatoes with butter, adding a dash of pepper and two dashes of powdered celery—the leaves dried for this purpose.

Potato Salad

Wash a cup of rice, and put it over a hot fire to boil in three cups of cold water, to which a teaspoonful of salt has been added. Cover at first, but remove the cover when the rice "hops," and shake it, holding away from the fire, until sure that none sticks. Replace it and clean six large potatoes, cutting them in quarters. Boil, with three eggs in same kettle. By the time these are done the rice will be also, and can be set on the back of the stove while you peel and slice the potatoes very thin, shell the eggs, and cut into small pieces, adding salt, pepper, butter and mustard to taste. Add the rice and potatoes, mixing them then with the eggs, to sit while you prepare a "dressing" of one tablespoonful melted butter, two of sour cream (or olive oil) pouring it over the salad while the ingredients are yet warm. When thoroughly mixed add a tablespoonful of sharp vinegar, mixing all with a silver fork. (Taste, now and then, to get the seasoning proportioned right for family. Tastes vary so!) When done, sprinkle a tablespoonful of powdered celery over all, and set the big bowl of "luscious old potatoes" away to cool.

Hashed Brown Potatoes.

Pare, slice, and dice eight medium raw potatoes, and cover with cold water. Put a small half cup of fat into a hot frying pan. Drain off all the water, and put in the potatoes, with salt and pepper to taste—all under cover over a brisk fire for 10 minutes, a slow fire after that. When done remove the cover, and return to the fire for two minutes. Sprinkle with powdered celery, and turn out on a hot platter, the brown side up. Stewed tomatoes are good with both the above.

Potato Soup.

(Really "cock oyster).—A quart of boiled potatoes, mashed while hot, seasoned to taste, with plenty of butter, to be stirred into two quarts of milk and brought to the boiling point, but not allowed to boil. Put a cover on the kettle, and set it back on the stove, while preparing 12 slices of buttered toast, one half of which will be kept hot in the oven, and the rest distributed among the six hot soup plates, which this quantity will serve —and bountifully. Pour the soup over the toast, and serve at once. "Make more the next time," has always been enjoined, but the "enough" point was never reached!

Save fat by draining the cream can clean.

Use the poisioned-bran bait to control grasshoppers.

Buy your next year's Implements Now!

In the last few months steel has doubled in cost. As a result a new scale of prices for all farm implements will soon go into effect. The new prices will be from 25% to 40% higher than present prices.

Our stock of Emerson plows and harrows and Hoosier drills is complete. We are still selling them at prices based on last year's cost of steel. Today $100 will go as far as $130 or $140 will go in two or three months.

Buy now the implements you are going to need next spring, and save money.

Buy here and get the benefit of our long experience as implement dealers and our unqualified guarantee.

Miller-Cahoon Co.

Murray Idaho Falls

LIVE STOCK

FEED FOR THE WORK HORSE

Henry Harris.

The horse in his attitude to man differs from all other classes of stock, in that he produces energy and not food. This fact alone explains to a large degree the greater prevalence of disease with horses than with other animals. The proper realization of the relation of feeding to work done, the avoiding of overfeeding and watering, or making sudden radical changes, and regularity in working and feeding generally, will go far toward the prevention of common ailments of the working horse, caused in so many cases by the failure to observe just such points as enumerated.

The problem of feeding work horses is one involving the economical production of energy and the maintenance of health and weight. In the consideration of the feeds for this purpose, choice is largely influenced by locality, season, price, etc. By these factors economy in the purchase or production of feeds is governed, providing the food is palatable, easily digested and nutritious, that there be proper variety in the various constituents, and that the whole be incorporated into a properly balanced ration.

For the farm draft horse at average work the following mixtures and methods of feeding have been found particularly satisfactory by an expert after much experimenting:

A grain mixture of five parts whole oats and two parts bran at the rate of one pound per 100 pounds live weight, and this fed in conjunction with hay—clean timothy—fed at the rate of one pound per 100 pounds live weight.

For the horse on very hard work, such as would be met with in the spring and fall, the above mentioned grain mixture would be concentrated by using five parts of oats to one part bran and fed at the rate of one and a quarter pounds for every 100 pounds live weight.

One authority on horses and horse feeding recommends the following method of feeding as conducive to the most satisfactory results:

5 a. m.—Three-eighths of a total day's grain mixture and one-fourth of total day's hay.

12 a. m.—Three-eighths of total day's grain mixture and one-fourth of total day's hay.

6 p. m.—One-quarter of total day's grain mixture and one-half of total day's hay.

Feed the larger proportion of hay at night, thus avoiding over-distention of the stomach just previous to heavy work, a preventive of stomach trouble. When the horses are idle reduce the grain one-half. Should the idle period continue for several days the grain ration may be gradually increased to nearly full ration, as the animals become accustomed to lack of exercise. If horses are idle and continue to receive a heavy ration they are liable to develop azotoria when first worked again. Bran, fed to liberally, when the horses are on hard work, is too laxative. However, bran mashes before idle days, as for instance on Saturday nights, are very helpful. Some horsemen prefer to feed the bran in this manner, confining its use to the night previous to a day of idleness.

For the idle horse in winter or for horses that merely require what may be termed a maintenance ration, it is recommended that for every 100 pounds live weight the animal be given one pound of mixed hay, one pound of clean oat straw and if possible, one pound of turnips or other similar roots. To this might be added a small feed of bran and oats in equal parts. There are few horsemen who feed root crops to their horses, yet it will be found that these are especially beneficial if not fed in too large quantities. Ensilage may conveniently take the place of the roots and even the straw, but care is necessary in its use for mouldy ensilage has proven poisonous to horses.

While oats is the premier horse grain, corn and other grains also may be used with success. Wheat is one of the more concentrated grains and should not be fed in large quantities. Barley can be used in much the same manner as corn, except that it is generally crushed before using.

While timothy has always been counted as the best horse hay, alfalfa or clover hay of good quality, free from dust, well cured and quite mature, is excellent for horses. It is well to feed first crop legume hay for this is generally cut more mature than are succeeding crops. Horses require and should receive from a quarter to a third less alfalfa or clover hay than timothy. Somewhat less grain is required when legume fodders are fed. Start feeding alfalfa or clover hay very gradually, mixed with timothy or some other grass hay. Both alfalfa and clover hay are laxative in their nature when compared to other grasses, which is one of the reasons for desiring them mature.

In feeding the brood mare avoid coarse, bulky, indigestible foods, also musty, dusty and mouldy foods of all kinds, and the use in any considerable quantity of such laxative foods as flax-seed, linseed oil cake, roots, ensilage, etc. Feed timothy or mixed hay in reasonable quantity with a grain ration composed of oats and bran in proportion to the amount of work done. In the winter on light work, give six to eight pounds of roots, swede turnips, carrots or sugar mangels at night. If the mare is constipated cut down the oats and increase the bran. In the reverse condition is present, increase the proportion of oats and hay and cut down the bran and roots.

RAISE MORE SHEEP

F. R. Marshall.

I is now time for the livestock farmer to make sheep raising one of his regular lines of production. Putting aside the effects of war conditions, prospective values of lambs and wool render sheep raising fully as safe and attractive, to the man who will study and understand the business, as is the raising of cattle, horses, or swine.

Prior to 1914 such a statement as this would not have been justifiable. Assured meat values of the future, the need of greater economy in the use of farm labor, and the full utilization of pastures place sheep raising in an entirely new light.

Some agricultural journals and other authorities have been inclined to question the safety of engaging in sheep raising and base their ideas upon statistical facts of decline in popularity of sheep in eastern states. Such statistical deductions are entirely misleading, as nowhere is there an instance in the United States of a decline in a well established sheep husbandry based on the production of both meat and wool.

The farm flocks that have disappeared in the past were raised primarily and almost entirely for wool production and beyond the fact that they were sheep had little in common with the kind of sheep that are now being placed upon American farms and that will be found in the near future on nearly all farms.

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SALESMANSHIP ON THE STOCK FARM

Just as good agriculture is the art of science of making two blades of grass grow where only one grew before, so is good salesmanship the art of science of selling two articles where only one was sold before.

On the farm some products demand salesmanship of a high order, while others demand the minimum of salesmanship. An article for which the apparent demand equals or exceeds the supply requires no especial salesmanship and is therefore designated as being a "staple" article, since it may be sold at any time at the market price. On the other hand products in which the apparent demand is less than the supply will remain partly unsold unless the demand receives some form of stimulation. The art of increasing demand is what we call salesmanship.

These nonstaple articles may in turn be divided into two classes—those that are needed in larger quantities than they are now being sold, and those that are not needed. The sale of the latter can be promoted, but only by dishonest or misguided methods. The other class of products may be sold by absolutely and praiseworthy and, we might even say, altruistic methods.

But why, we ask, should a man who needs an article not buy it without having to be the object of any especially selling methods on the part of the producer? There may be several reasons why a man does not buy a certain product which, perhaps, he really needs: He may not know that there is such a product; if he knows of it, he may be ignorant of its value; he may be merely indifferent to the whole idea and have never given the matter any consideration; he may have a personal dislike for the product or more commonly for some person connected with its sale or manufacture; lastly, he may not know how to finance the purchase.

It will be noted that the most important of these reasons are based on a lack of knowledge. Salesmanship in these cases consists of bringing the necessary knowledge to the possible purchaser; in other words, in advertising. Even the question of financing the purchase is largely dealt with in the same way, that is, by bringing to the possible purchaser's attention either reasons why the purchase would be more profitable than had been supposed, or in proposing new methods of financing the deal.

The first step in advertising is the creation of interest. After interest is created the matter of supplying information is relatively easy. In fact, the purchaser may come to look for information. The great interest stimulators are promises of financial profit or of personal pleasures, and the latter is perhaps even stronger than the first. If the prospect once feels that it will be either to his pleasure or profit to make the purchase, he will then take the initiative in looking for further information and he will surely buy if it is at all wise for him to buy. Personal friendship does not lead to so many new purchases, but it is certainly true that a prospect who is wavering between two salesmen will be much inclined to deal with the one he likes best, but, what is even more important, he will not buy from a man whom he does not like at all.

Let us see just what all this means to the farmer or stockman. In the first place, such products as grain and hay, dairy products, and some kinds of fruit and vegetables are staples; that is the demand exceeds the supply. Fat cattle sheep and hogs also come under the same head.

On the other hand, many kinds of purebred animals do not always meet with such a keen demand. For example, there are more good bulls in the country than there are men who have definitely made up their minds to buy a bull. Hence the selling of bulls requires a certain degree of salesmanship. Fortunately, there is no more fertile field for salesmanship than with the purebred livestock, since then there is an enormous number of men who could profitably purchase, but who are indifferent to or unaware of the advantages of such a purchase. These men may be reached by the proper methods of salesmanship, and in this way the demand must be multiplied many times. Viewed in this light, the possible demand for purebred livestock of all kinds far exceeds the supply.

Ignorance of these points has been the cause of most of the failures in the purebred business. Men who have been successful in raising market stuff have gone into purebreds expecting to follow the same methods. As a result they soon become disgusted with the "lack of demand." They do not realize that it is absolutely necessary to develop the demand if it is to meet the supply. The time will doubtless come when so much salesmanship will not be necessary in the handling of purebred livestock. That condition is reached now in some places and at some times. One fortunate thing about selling purebred livestock is that once a man becomes a customer he no longer has to be "sold," but on the contrary purebred sires become to him a staple article and he buys the number which his business demands without any special encouragement on the part of the salesman. Even then, however, the breeder must not assume that his task is finished when the stock is raised. It is as much his business to encourage the more extensive use of purebred stock as it is to raise them.—E. L. Potter.

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SAVE THE FEED— USE GOOD SHELTER

Wm. Olsen.

Years ago a shed was made of a few good upright cedar posts with poles and willows and then covered with straw or grass and some times hay. Conditions are changing and today good shelter means barns built of lumber.

Good shelter then meant wintering stock in good condition, everything else being right, and it means much in the wintering of stock today, now that lumber has taken the place of hay and poles. Hay sheds are not commonly seen any more, most folks appear to feel ashamed to stick up anything of the kind on their farms, but where shelter of a more pretentious nature is lacking it certainly is false pride not to get something of the kind together and at least see that the stock is kept comfortable regardless of the looks. The scientific man might have it all figured out just how much extra food is required to heat the animal where no shelter at all is provided or where at least very poor shelter is the rule, but the average farmer knows, without any science about it, that more feed is required on a cold day than on a warm one—it's the extra cold that consumes the feed, that puts a keen edge on the appetite and makes the animal clean up the feed rack and look longingly towards the gate for the feed wagon to enter with more. Some of the lumber sheds we have are really poor excuses when it comes to keeping out the cold winds of winter. They may look better than the unsightly shed of hay, but they may come a long ways of being warm. A good banking with hay, on the cold side, would help such sheds wonderfully. We frequently do it and forget about the looks.

With high prices of hay and lumber every thing must be considered in order to make the most money. Often a good investment will bring good returns. Why not try the investment of good shelter of some kind for your livestock?

THE DRAFT IN THE RANGE

American people have a very high appreciation of the humor of Englishmen, and have been specially tickled by a story Colonel Cody used to tell. He said that some years ago an Englishman who had never been in the West before was his guest. They were riding through a Rocky-Mountain canyon one day, when suddenly a tremendous gust of wind came swooping down upon them and actually carried the Englishman clean off the wagon-seat. After he had been picked up, he combed the sand and gravel out of his whiskers and said:

"I say! I think you overdo ventilation in this country!"—Tit-Bits.

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IT WILL

"Do you think that the automobile will displace the horse?" asked the conversational young woman.

"It will," answered the nervous young man, as he gazed down the road, "if it ever hits him."

Use and Abuse of Harrow

Address of Hon. W. R. Motherwell, Canada.

The harrow is frequently the least understood and the most despised tool on the farm. Harrowing is usually delegated to the cull team and also to the cull driver, in consequence of which cull results are naturally often obtained. Nothwithstanding this the usefulness of the harrow has been demonstrated on almost every kind of soil, and at all periods of the growing season. That its usefulness was appreciated in Shakespeare's time may be gleaned from those lines in Richard II:

"I will go root away
The noisome weeds, that without profit suck
The soil's fertility."

It is even made mention of in holy writ. In rebuking Job, the Lord said: "Canst thou bind the unicorn with his hand in the furrow? or will he harrow the valleys after thee?"

However, since only the lighter soils were cultivated in ancient times, the harrow often consisted of bushes or branches of trees, which merely scratched the surface of the ground. Even today, in some of the more remote parts of Europe, the peasants use a brush harrow of this sort. The march of progress does not halt for the remote districts to fall in line, and we find that the old "A" harrow, which originally consisted of thorn bushes with a cross-arm attached, was improved upon by the Romans who devised, a square or oblong harrow made with crossbars and provided with numerous teeth. This remained the standard type until late in the sixteenth century. Since then the harrow, in its course of development has consisted of a wooden frame with wooden teeth, a wooden frame with iron teeth, or wholly of iron. The second type is still in use to a considerable extent, but iron harrows are now mostly employed. Of a very different character is the chain harrow, which consists of a collection of iron rings, and the disc and acme harrow with which we are all familiar.

The Uses of the Harrow

In dry-farming practice probably no other implement plays so important a part in moisture conservation as does the drag harrow. Practically all plowing except sod should be harrowed immediately after or better still at the same operation and thereby save large quantities of water that would otherwise be wasted by evaporation. If we did not have the harrow the much talked of soil mulch" would be very hard to obtain. There are other implements on the farm which we could use to product this mulch, but the small acreage covered by them in a day makes the cost of production so great that their use is prohibitive. The two outsanding features of the harrow in producing or restoring a mulch are the rapidity with which the work can be accomplished and the efficiency of the work done.

Not only is the harrow a splendid implement to use in producing a mulch, but it is beneficial also as a packer. In newly plowed land especially, the harrow teeth go well into the ground, breaking up the lumps right through the furrow slice, compacting the soil and thus materially aiding the capillary action of the soil moisture.

For every pound of dry matter produced in a plant, from four hundred to seven hundred pounds of water are absorbed. Experiments have proven that a single stroke of the harrow has checked evaporation to the extent of one hundred tons of water per acre. This is approximately equivalent to an additional yield of four bushels of wheat to the acre.

The ordinary iron or wooden drag harrow should be and is usually constructed so as to avoid the teeth tracking. This is best accomplished when only one place is provided for attaching the whiffle-trees. In the case of a four-horse harrow with two hitches provided on one long evener, careless driving or one team habitually slower than the other, may result in these teeth tracking continually, which is not harrowing at all.

A much better arrang ment than the usual long heavy evener, or say a six-section harrow with two horses hitched near each end, or better even than having the four horses hitched to the middle of a long evener, is the one which I shall endeavor to describe. The six-section harrow should consist of two complete harrows each three sections wide, each drawn from a light evener wide enough for three sections. To each evener is attached a set of two-horse whiffle-trees. The inner sections of the combined two sets of harrows can be kept the proper distance from each other by first running the four evener attachment links for the two inside sections, through a piece of hardwood 2x4 and four feet long, in which the necessary holes have been made to allow the links to pass through easily and work freely. This keeps the two three-section harrows in position just as well as the one long heavy evener and does not cause the front of the harrow to dig so deeply into the soil, which is much to be avoided in harrowing soil with much top litter or other refuse in it.

Preparation of a Seedbed.

In the spring when every farmer is anxious to commence seeding, the harrow is most essential. As soon as the land is in a reasonably friable condition it should be harrowed, which operation will form a mulch and thereby check the rapid evaporation that is always going on in the spring. Sometimes the spring opens up several weeks before it is advisable to start seeding. Early in this interim it is particularly desirable to harrow the land to be sown a short time later, thus preventing the escape of large quantities of water that would be lost by evaporation in the meantime. By checking the evaporation, harrowing is an important factor in warming up the soil and preparing it for the seed, as every pound of water we see rising in vapor from the surface represents a loss of heat from the soil. After the seed has been sown, the value of the harrow can once more be demonstrated behind the seed drill, thereby putting, not only the proper finishing touch on the field, but also putting it in better shape for successful harrowing after the crop is above ground.

Weed Destruction.

As a weed eradicator the harrow is indispensable, but when it is to be used for weed destruction the weeds should never be allowed to get beyond their seed leaves. When the weeds are at this stage on a warm, dry day, the harrow will kill millions of them. In summer fallowing, from the time the land is shallow plowed or double-disced the previous fall until freeze-up the season it is fallowed, the harrow can be used at intervals to good advantage for accomplishing the following purposes: Killing weeds, conserving moisture, making a firm seedbed, stirring up the surface of the ground and permitting access of proper amounts of air, thus giving the soil bacteria and opportunity to change the plant food from an unavailable to an available condition.

Many authorities recommend harrowing fallow of summer tilled land as soon as possible after every considerable rain. This is not always practical in wet, cloudy weather, nor desirable in the case of weedy land where a much more complete germination of weed seeds can be secured in the top soil by letting it remain wet to the surface for three or four days after a rain. This encourages the fullest possible germination of weed seeds which may then be destroyed by the same harrowing that restores the soil mulch and with no appreciable loss of moisture in the meantime.

If the top soil to the depth of the usual mulch—say one and one-half inches—is kept continually stirred and dry by the harrow, no weed seeds in that layer of soil can germinate, but remain there to cause mischief later on. In many older districts and countries the practice of harrowing the growing crop is followed with excellent results, as in fields where annual weeds are troublesome the crop has often owed its salvation to the fact that it was harrowed after it was above ground.

Harrowing winter grains during the following spring is now a recognized pratcice in those portions of America and elsewhere, but it took long years to establish the custom because of fear lest the grain be maltreated or partially destroyed by the operation. Harrowing spring crops may be practiced with equally good results if certain precaution be taken. That French Weed or Stink Weed, one of the worst annual or winter annual weeds with which the Saskatchewan prairie farmer has to contend, can be controlled by the timely use of the harrow is now a matter of history in many of the older districts of the Canadian West.

The methods to employ and precautions to take in harrowing spring grain crops depend in some measure on the primary object that induces one to harrow grain. If a field is to be harrowed for the purpose of restoring a soil mulch and stimulating growth, then it should be done at a time and by such means as will do the least possible damage to the young grain plants. It is generally conceded that the best time to effect this is just before the grain is showing above the ground and again when the plants are four or five inches high, or about meeting in the rows. A light wooden harrow with round teeth is preferred in such instances, and care should be taken not to have a lot of rubbish on the top of the ground to drag on the harrow teeth and mess up the young crop.

If, on the other hand, harrowing grain is contemplated primarily to destroy young weeds which, if permitted to remain, will often take such a terrible toll of the crop, then the harrowing is best performed (weather permitting) when the young weeds are small and tender and not yet out of their seed leaves, regardless, to a large extent at least, of the stage the young crop is in. To do this successfully and not retard maturity by thinning out the crop, it will be necessary to sow a little heavier to allow for the destruction of some plants. The harrow best adapted for killing weeds in growing crop is the one that is sufficiently heavy and close cutting to kill the weeds and at the same time do the minimum damage to the crop.

A high-framed long toothed harrow with abundance of clearance and teeth that will not track is the one that usually best fills the bill in such cases.

There is still abundant opportunity for the inventive mind to get out a much beter drag harrow than has yet been seen on the market. It is to be hoped that the growing popularity and importance of harowing young crops of growing grain will speedily produce the mind and the man with sufficient inventive genius to supply this much required want.

The Abuses of the Harrow.

Damage is often done to growing crops by harrowing when the leaves are wet and full of water as they are more crisp and tender at this time than on a warm dry day. This is especially so in harrowing a corn crop. Also, if the land is wet the harrow teeth will gather soil and rubbish and pull out considerable grain. If harrowing is done when the ground is too

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loose, a great deal of the grain may be pulled out or covered, with consequent loss to the farmer.

Harrowing the land in puddled condition: By harrowing the soil when it is very wet, its physical condition is seriously impaired and it is difficult to restore the land to a friable granular state. If the soil is puddled and the granules broken down, then the surface films of moisture on the smaller soil grains come to nearly in complete contact that there is scant room for air to circulate and plants cannot thrive. Soil bacteria of the aerobic kind are thus rendered useless. This is especially so in clay soils where the soil particles are of very minute dimensions.

Excessive harrowing is very detrimental in districts where the soil lacks fibre and is liable to drift. Many industrious farmers are led astray by the term "dust blanket." This may be suitable in some parts, but should be changed to "earth blanket," as many people in harrowing their land work diligently to produce a dust covering, and the result is that with high winds the whole mulch drifts off. When the soil mulch is well loosened and thoroughly separated from the firm ground beneath, and especially after mulch has become dry, little benefit can be gained by harrowing unless there are weeds to destroy.

Again, as previously mentioned, excessive harrowing of weedy soil immediately after rain tends to prevent weed germination in the surface soil by keeping it constantly dry and loose. It is important to avoid this.

A harrow to conserve moisture and destroy weeds in growing crops:

Must be light .

Must have good clearance.

Must have closely set long teeth that will not track. It can only be used to advantage:

On a dry or warm day.

On a soil that works freely.

On small and lightly rooted weeds.

On annual and winter annual weeds.

On soil that is firm beneath the mulch.

Or when thicker seeding is practiced to allow for what is pulled out.

It cannot be used to advantage:

On wet soil.

On perennial weeds.

On a short toothed harrow that clogs.

Or by a man on a harrow cart.

Finally, our best farmers and observers now contend that next to plowing, harrowing is the most important field operation on the farm.

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If you are in the habit of using "this" oil and "that" oil in your Ford, just stop the practice for a few weeks. Clean out your crank case and refill with

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Salt Lake City, Utah.

THE ROMANCE OF THE BEAN

The story goes that a Southern historian with a saving sense of humor once declared that the defeat of the Confederacy was due to the fact that the North had a never-failing supply of "beans, bacon and bullets." It was a fairly sensible explanation, at that, and despite the radical development in the machinery and maneuvers fo modern warfare, the old "army bean" still seems to have lost none of its flavor of fighting properties. We are told that, notwithstanding all the mighty armament that science has wrought since the Civil War, the fate of battles is still decided by the preponderance of man power, and so it is that the belligerent nations hope to sustain the stamina of their man power by the liberal use of this ancient article of food.

We use the word "ancient" advisedly, for while we did not become a bean-eating nation until the early "sixties" of the last century, the bean itself is much older than this country, older even than mediveal times; in fact, it has been immortalized in the traditions of the ancient peoples and might almost be said to antedate civilization itself. We have it from no less an authority than history itself that the earliest races ate beans and flourished until they ruled the world in their time. This being true, may we not apply the converse of the rule and say that when these mighty peoples stopped eating beans and cultivated their appetites to the point where they craved only fancy foods, then their power began to wane and finally they vanished altogether?

A famous student of biblical times tells us that the locusts which John the Baptist ate in the widerness were in fact the carob beans and thus were called "St. John's bread." Also, we know that in the ancient governments beans took the place of ballots. In this usage in the early times a white bean stood for absolution and a black one for condemnation. The process of blackballing now so common in many of our modern clubs and secret orders undoubtedly orignated from this ancient custom. And in this respect, we are reminded that Pythagoras, the ancient Greek philosopher, admonished his fellow citizens to "shun the bean." This was another way of saying "leave politics alone," which leads one to believe that the bean in those days was as uncertain for the practical politican as the ballot is today.

But to come back to our own country. For more than two centuries the people of Boston were partial to baked beans and the practice becomes so firmly established as to develop into one of our most humorous traditions. Americans everywhere throughout the country poked no end of fun at the residents of the old Bay State, on the assumption that bean-eating tended to develop snobbishness and a superficial intellectual aristocracy. The rush of Massachusetts troops to the defense of Washington at the outset of the Rebellion—the first soldiery to reach the national capital—went a long way toward disproving the theory that beans as a steady article of diet had a damaging effect upon the red corpuscles of the average American citizen. On the contrary, it was not long before the government considered them just as essential to the successful campaigning of its armies as bullets. Beans and pork became the principal rations for the Northern armies and when the war closed the soldiers carried their acquired appetite for beans home with them.

Since that time we have become a bean-eating nation. The old veterans of the Rebellion have celebrated many a reunion, sitting by their improvised "campfires" eating bean-soup boiled in great cast-iron kettles. In some parts of the country these affairs are still known by the common name, "The Annual Bean Soup." Thus has the custom grown upon us. Then, too, beans have formed a prominent part of the regular army rations for years. Our soldiers ate great quantities of them during the war with Spain and on the Mexican border, and the British and French soldiers are now eating them along the Western front—American beans, at that. It goes without saying that our own soldiers will likewise be abundantly supplied with the foodstuff that "sticks to the ribs,' and that so long as the beans and bullets hold out the forces that follow Old Glory will never sound retreat.—Goodwin's Weekly.

HEAT AND FRESH AIR

Yesterday we took a long drive through the country to look for some calves and sheep we heard were for sale. It was a cool, delightful day and heavy wraps felt comfortable. We had to stop at a number of farm houses to make inquiries, for we did not know the roads thoroughly. One think impressed us everywhere. Many houses were closed up tight and there was no fire anywhere in them, not even in the kitchen, for it was afternoon and the work there would not begin again until supper time. The women who answered the bells or responded to the vigorous use of knuckles on the door panels had a huddled-up, cold, shivery look, and the air of the houses was like that of a long-closed-up church or public building. Not a bit of ventilation anywhere and not a bit of fire. And some of these were fine, large dwellings, many of them with modern conveniences.

One of the greatest dangers of the fall is the sudden withdrawal from the sunny, fresh, life-giving air into the closed, damp, musty atmosphere of the house, whether in town or in country. One week the family sleeps with wide-open doors and windows, and the wife and mother cooks in a room where free, fresh breezes blow through constantly, and the next week everything is shut up tight. It is a mistaken notion to thus "protect" the family from cold. The cold fresh air is infinitely better than the stale, stuffy house air, though it may seem warmer. It is no wonder we have so many colds in the fall and so many elderly people pass away, for the sudden transition from fresh to stale air in a thing that people should avoid as they avoid poison.

But fuel is high, and it takes time to build fires, and it looks foolish to have a fire, and then let the heat escape through the open window and —yes, I know all those excuses, but they are all unworthy the attention of the farmer's wife who wants to keep her flock healthy and happy. In the first place, if fuel were three times as expensive as it now is, it would still be cheaper than doctors' bills and undertakers' fees. Nobody says anything about doing without a fire in winter to save money. On every farm enough wood goes to waste each year to have summer and fall fires enough to keep everyone comfortable.

Don't close the windows and doors up tight if you want to go into winter healthy and efficient. No matter if the air is cold, you need it in your lungs. The first thing the doctor advises for a sick person is plenty of fresh air, so why not avoid having the doctor by keeping fresh air in the house all the time? That does not mean that anybody shall shiver and freeze, but rather that the house be warmed and ventilated whether the month be October or January. Then the fall dangers of pneumonia, colds, malaria and other diseases depending upon sudden changes of temperature will pass your house by and you will be ready for cold and storm and hard work of all kinds. It is not economy but wastefulness that endangers human life, and any doctor will tell you that it is positively dangerous to shut out the life-giving air and sunshine in the fall or any other season. —Hester Stanley.

NOT JUST WHAT HE MEANT

An old deacon was thanking a minister for filling, on emergency, the pulpit of a village church one Sunday morning. "A worse preacher would have done us, sir, if we had known where to find him," he said.

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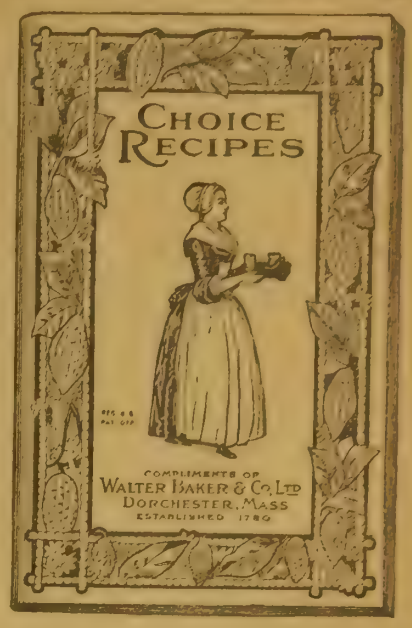

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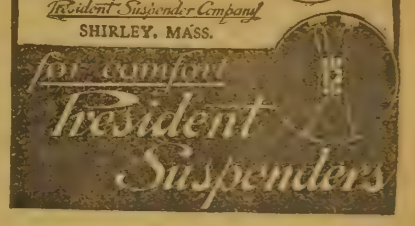

NEW DISGUISE

"I was preparing to shave a chap the other afternoon," says a head barber. "I had trimmed his hair, and from such talk as I had had with him I judged him to be an easy-going, unexcitable sort of fellow. But suddenly his manner changed. Out of the corner of his eye he had seen a man enter whose appearance upset him.

"Hurry, George!" he muttered to me. "Lather to the eyes—quick, quick. Here comes my tailor!"—Tit-Bits.

A FATHER'S FORESIGHT

Someone noticed that Pat used both hands equally well. "When I was a boy," he explained, "me father always said to me: 'Pat, learn to cut yer finger nails wid yer left hand, for some day yet might lose yer right hand.'"

HER CORDIAL WISH

"I'm quite a near neighbor of yours now," said Mr. Bore. "I'm living just across the river."

"Indeed," replied Miss Smart, "I hope you'll drop in some day."

SWEET CLOVER AND ITS USE IN SOIL RECLAMATION

(Continued from page 1)

tivation, to keep down evaporation and the consequent deposite of alkali.

An analysis of the soil showed a concentration of alkali in the surface totaling 1.55 per cent and in the upper twelve inches of 0.33 per cent on an average. The principal alkali found is sodium sulphate and that next highest is sodium chloride or common table salt. This shows a condition prohibitive to the successful production of most common crops. However, a wide variety of crops were planted as a test of the general condition, which included wheat, oats, barley, sugar beets, mangels, clover, corn, potatoes, sorghums, vetch, rape and spring rye. With the exception of sugar beets, mangels and rape, none of these crops were able to survive against the great odds of alkali and an alkalin water table ranging from 4 to 24 inches from the surface. As a result seven of the ten acres were broken during the summer and followed to keep down the salt weed growth. On the three acres remaining in crop a light yield of sugar beets and mangels and a fairly good yield of rape was obtained. The other crops were very poor.

The seven acres which were broken up were left in the rough during the winter, then seeded with the first thaw in February to Sweet Clover, sowing broadcast on the snow (hullless seed at the rate of 12 pounds per acre. Since the ground under normal conditions did not dry out until late in May, the Clover seed was not covered except where it fell in cracks and depressions and was covered by the soil running togther at thawing time. A few of the higher spots which had a tendency to become dry early were covered with a light coat of manure. By this method a good stand was obtained which yielded well. A crop of hay yielding 1¾ tons per acre was harvested in mid-season and produced a second growth which made excellent pasture for all the livestock on the farm until it was covered with snow.

In early spring—1916—this seven acre field was diveded in two, one-half of the area being fenced and used for continuous pasturing of 32 head of hogs or 10 head per acre. In addition to this a crop of hay was cut from the harvested section which yielded 1½ tons per acre. It was cut 12 inches high in order that the plants should yield yet another crop. Cutting low in the second season will kill the plants.

The additional one-half of the 7 acre field was not harvested until late in September when it was cut for seed. The portion within the enclosure was also allowed to go to seed, the hogs

It is entirely possible to get an even, uniform stand of sweet clover, even on alkali and poorly drained soil. Scarrified seed should be used unless the seed is sown late in the winter so that the action of frost will aid in opening the other or protecting covering of the seed. Even after the seed is hulled, it is covered with a somewhat impervious coating.

Sweet clover on the alkali soils is answer to a quick shift to hog paradise. It is a quick shift from idle acres to profitable crops, too.

Sweet clover when grown exclusively as a seed crop is profitable. It will readily yield a lot of pasturage and a good seed crop as well.

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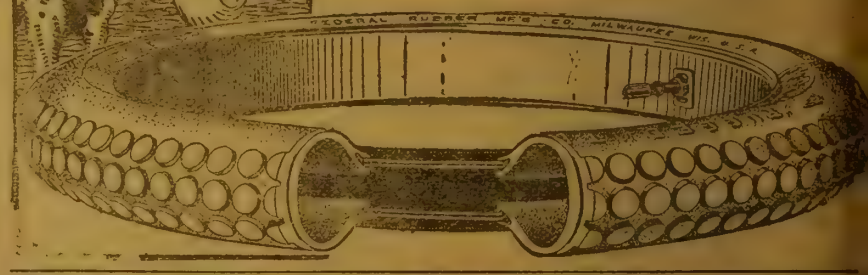

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ng free access the while. This did not mature so early nor so oughly as the field which had pro- d seed alone undisturbed. It was ested early in October, three ks after the first field was in the k. The yield, strange to say, was ier on the field which had been ured and cut once for hay than he one outside the enclosure. re are three explanations for this: Differing in stand. (2) ripeness at ing time, the heavier yielding being greener at time of harvest, loosing less seed by shattering. greater spread to plants which been cut once—which is conducive more uniform bloom and setting e seed.

e field within the enclosure was wed to re-seed itself and it is pro- ng in 1917, the third consecutive ons growth—now a young crop. contemplated that this crop will plowed under when the second wth is well along and the field, the wing year, planted to a variety of s in order to test out the ultimate results of this method of reclamation. The section outside the enclosure was broken up late in the spring of the present season and planted to a variety of crops, including wheat, oats, barley, peas, potatoes, alfalfa, corn, beans, tomatoes, and sugar beets. The crops are not yet harvested, but there is a decided improvement and the yields such as they are will be an increase of 100 per cent over the tests of 1914, except in the case of sugar beets, and even here a decided gain will result.

Conclusions and Recommendations

For quick and profitable returns our experience indicates that there is no crop equal to sweet clover in renovating and enlivening a bad piece of land, which is laden with alkali and water. Drainage would aid materially in correcting the adverse conditions, but sweet clover alone will work a wonderful change. Where conditions are not too bad we would recommend that the second growth of the first season be plowed under during the later part of Aug., thus bringing the soil very quickly into condition for the production of such a desirable crop as sugar beets. By this method of treatment a first class of green manure is turned into the soil while the clover is succulent and may readily decompose into the required plant foods. The improvement in the physical condition of the soil is a very material benefit.

The land should be prepared during the late summer for planting. After plowing and harrowing, any consequent weed growth should be cultivated out. The seed may be drilled in during the fall, or scattered broadcast during February. Spots which are inclined to dry out early in the spring should be covered with a light coat of coarse, strawy manure to prevent evaporation and to hold the moisture close to the surface for the quick germination of the seed and the proper starting of the plants.

During the first season's growth a good crop of hay may be harvested in July and a heavy second crop produced which will be ready to plow under about the last of August. The crop of sugar beets which will be produced the following year will be a surprise and a gratification.

KILL CROP PESTS NOW

Cultural Methods of Great Value In the Fall.

Harold R. Hagan, U. A. C.

Now is the time to kill next year's crop of plant pests. Fall cultural methods, intelligently applied, will decrease the crop pests of next year very materially, says this authority. All weeds should first be cleaned up. Especial attention should be paid to fence rows and ditch banks. Where possible, the ground should be harrowed in order to kill the many caterpillars that have been eating up the crops. These burrow into the ground an inch or more for the winter and then emerge in the spring as moths. Harrowing also kills certain beetles, such as the alfalfa weevil, that hibernate under the brush.

All crop refuse left in the fields after the harvest, such as wheat stubble, beet tops, vines from peas and beans, or similar refuse, should be fed off or plowed under. The former method is to be preferred. This is necessary because many insects live over winter under the protection of these leaves and stalks. The wheat straw worm and the wheat joint worm, for instance, live over winter on the wheat stubble. These and similar pests can be almost wiped out by clearing the land of these refuse materials.

Newly broken land should be plowed this fall to control, in part, several destructive pests. If the new land is sod land, the cut worm will be thus controlled; if it is higher sagebrush land, many insects that work on the cereal plants will be destroyed.

HOW'S YOUR CARBURETOR? HERE'S SOME POINTERS

Some Hints Which, When Learned Will Make You Admire Rather FEAR IMPORTANT DEVICE.

The carburetor is the source of much of the trouble in operating tractors, automobiles and even small stationary and portable farm engines.

The essential parts of the mixing valve are the needle valve regulating the amount of fuel admitted to the cylinder and the means for maintaining a constant level of fuel at this needle valve. There usually is some means for controlling the air entering the mixing valve. On commercial carburetors, there may be various adjustments for controlling these parts. If the engine is throttle governed, there is also a valve or throttle to control the amount of mixture entering the engine.

It is these adjustments which cause the carburetor to seem such a formidable enemy to the engine operator. However, if he will but trace the fuel, air and mixture carefully through the instrument he may easily see what adjustment does and learn to admire rather than fear the carburetor.

Since the ratio by volumn of fuel and air is about 1to 15,000, the needle valve must be very fine. Hence the least dirt or foreign matter may obstruct the carburetor and cause it to fail to act properly. When the engine is used in a dusty place, the intake pipe leading to the carburetor should be protected by a screen of fine wire or cheese cloth. If this is not a part of the machine when sold, care must be taken in attaching to the intake pipe so as not to stop the ready flow of air. A porus drum or long pipe full of holes may be covered with cheese cloth to do this work.—E. R. Gross, Colorado A. C.

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ONE YEAR'S FEED

(Continued from page 3)

and alfalfa, the requirements would be 1.15 acres of alfalfa and 0.7 acre of silage, or a total of 1.85 acres.

The only salable output of these 1.85 acres would be a calf 2 to 3 months old. Unless you keep the calf and feed it to maturity at a good price, this does not look very promising for keeping beef cows on the farm without cheap pasture, either beet tops or some other.

One Man.

We know by this time almost as much about the food requirements of a man as about those of horses, cows, and sows.

According to the standard of the United States Army, one man in peace times requires, per day, about 4 ounces of digestible protein, about 5.5 ounces of digestible fat, and about 15.7 ounces of digestible carbohydrates, meaning mainly starch and sugar.

The writer never has seen a soldier in peace times who could not eat a steak or several doses of ice cream a day, besides what Uncle Sam furnishes.

If a man could live by bread alone, the above requirements would be filled by about 3.1 pounds of bread per day or about 1,130 pounds per year, or about 800 pounds of flour. This at present milling standards equals about 1,100 to 1,200 pounds of wheat. The average yield per acre of wheat in the United States is around 15 bushels, or 900 pounds. Therefore, if nothing but bread were eaten, it takes about 1.3 acres of average wheat to maintain one man one year.

If a man lived on nothing but bananas he would have to eat about 14 pounds per day to get enough carbohydrates and would then have a great deficiency of protein.

Twelve pints of milk per day would also fill the above requirements approximately, but there would be relatively too much protein and too much swallowing.

If the diet is composed of common staple articles, the following would fill approximately the Army requirements, furnishing a little more protein than called for, but the normal amount of fat, starch, and sugar: 200 pounds of flour, 1,100 pounds of milk (one pint each meal), 100 pounds of sugar, 25 pounds of butter, 150 pounds of beef, 50 pounds of bacon, 150 pounds of potatoes, 20 pounds of dry beans, 50 pounds of eggs (about 365 eggs), 150 pounds of various vegetables and fruit.

When digging trenches or shovelign beets at the rate of 30 tons per day, the requirements are about 25 per cent more.

It must be kept in mind that such feeding standards for men and beast are based on average requirements. One individual may require considerably more or less.

While one can fortell with considerable accuracy what 10,000 men or 10,000 steers will require, each individual bunch will require different quantities and different qualities. Feeding men and beasts well is, therefore, not only a science or a business, but an art as well.

This is the reason that cooking like mother used to do has never been surpassed except by our wives.

THE STEWARDSHIP OF THE SOIL

Dr. J. H. Worst.

What a precious theme is harvest! The hopes, the well being, the life, of the world is fast bound up in the magic of this single word.

The soil upon which the harvest depends, moreover, is God's benediction to humanity. Measured by consequences, Heaven has vouchsafed no form of stewardship that is fraught with such tremendous responsibilities as the stewardship of the soil. In the final analysis this stewardship represents the farmer's obligation to society.

And yet sacred as is the soil and binding as is the farmer's obligation to society, the means for providing the world's food is nevertheless at his mercy.

It is a well known fact that the soil can readily be depleted of its fertility and thus robbed of its strength by a system of exploitation. . . . . Too much of our land is being thus exploited. On the other hand the productiveness of the soil may be very greatly improved. Denmark, Belgium, Germany, and ther European nations have fully demonstrated that by the application of science to the art of agriculture, the productiveness of the soil can be multiplied almost to the limit of necessity.

Fortunately nature has supplied every means for the development of a progressive and permanent agriculture. It is also obvious that it is man's privilege, if not his mission, to improve upon nature—to substitute quality for mere physical endurance, in agricultural products.

WHAT HE FOUND

Quite a good many farmers seem to be inclined to ridicule "scientific agriculture." Experiment station and college work in agriculture is thought to be too theoretical to be of any practical value to practical farmers. A short time ago we had the pleasure of talking with a very good farmer who made his first trip to his experiment station this summer, and while there had the opportunity not only of going over the plots and livestock, but of getting fairly well acquainted with several of the "scientists." He is convinced that he never was quite fair to his state agricultural institution and the men running it. He found the "scientists," as he said, "right human fellows, working hard to find out some things that will be useful to us farmers, and they know a lot about practical farming, too." While he did not say so, here was a farmer who recognized that to find out all about any one crop or method those conducting experimental work must do some things that are impractical, and he judged the results in the right way when he overlooked the freaks that must be a part of all thorough experimentation, and in his own mind laid emphasis on the practical lessons that are in evidence at all experiment stations. The trouble with many farmers is they expect everything at an experiment station to look fine, to score a hundred per cent, or close thereto. But in testing all varieties of oats for yield, for instance, some are sure to look much poorer than others; various methods of fertilization will give various results—some good, some bad; in breeding and perfecting a new strain of corn some freaks will develop; and so on. Forget these odds and ends that mean so much in experimental work, and so little on practical farms. Look for the good things and not for what may be made a subject for ridicule. We already owe much to "agricultural science"—every farmer does whether he admits it or not—and our debt to this work and those doing it will be vastly increased in the next twenty-five years.

DRY BREAD MADE APPETIZING

Waste no dry bread. A single slice is valuable and every bit thrown away means greater hunger in Europe. Here are practical ways to use dry bread and thereby keep in the food saving campaign:

Cut it in thin slices and toast it. Crisp toast is appetizing with almost any breakfast drink.

Cut dry portions of loaves into cubes about three-fourths of an inch square, put in a shallow pan and toast in the oven to a golden brown. Serve for use in soup.

The old-fashioned dish of bread and milk,—an excellent use for dry bread.

Make into bread pudding, using raising liberally to give flavor and make the dish more attractive and nourishing.

Or break up the dry bread into small pieces and crush with a rolling pin, saving the bread crumbs for future use in the place of flour. A covered glass jar is a convenient receptacle for storing them.

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40 ACRES of sub-irrigated land in Cache valley. This land is now all planted to alfalfa and producing very heavy crops. The soil is of a sandy loam nature, easily worked and very productive. We sold this place to a young man last spring and, on account of being drafted in the army, he was compelled to sell the property again. We are offering this at $145 per acre; 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. This is a good buy and should be looked into at once.

ONE ACRE in the Holliday district, with a 5-room frame house which cost $2500. This acre has fifty fruit trees and one-quarter of an acre of strawberries; good water right; and can be had for the price of $3000.

160 ACRES in Cache valley at $75 per acre; 80 acres of this is irrigated from the West Cache canal and 80 acres is now being dry farmed, but can be irrigated from the same source. The farm is well adapted for the raising of beets or grain or general agricultural crops. Would take a small payment down and balance on reasonable terms at 6 per cent interest.

40 ACRES in the Bear River valley at $110 per acre; one-fourth down at the time of purchase; reasonable terms on the balance at 6 per cent interest. This forty acres is now all in alfalfa except five acres, which is sowed to grass and being used as pasture.

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The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

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480 acres, all can be irrigated, two running streams across property, adjoins open range, eight miles from railroad station and two miles from school. All fenced and produces 200 tons of hay. Includes 150 cattle, 15 horses and all necessary machinery. Price $17,500, terms.

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$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

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POULTRY

FEEDING FOR WINTER EGGS

Maurice H. Decker.

The period of greatest egg production in the life of a hen that is handled and fed with the sole object of getting the largest possible yield of market eggs, is the second six months of her life—between the date upon which she lays her first pullet egg, usually at the age of five to six months and the time she starts to molt the following summer. Successful winter layers begin laying in October and November when prices of new-laid eggs are high, and should continue to lay at the rate of 40 to 50 eggs per day per 100 hens until February and thereafter at the rate of 60 to 75 eggs per 100 hens until molting time.

To obtain this profitable egg production the early hatched pullets should be placed in well-built, dry winter quarters and fed liberally upon rations rich in egg-producing elements yet of sufficient economy to show a profit for the poultryman. When wheat reaches $1.75 per bushel we regard the whole grain as too expensive to be fed with profit to laying hens. There seems to us to be no reason for feeding the high-priced flour in the whole berry to hens when our past three years' results have shown as good egg yields with a liberal use of the cheaper by-products—bran and middlings.

For scratch grain fed morning and evening in six to eight inches of dry litter we use 80 pounds cracked corn and 20 pounds heavy oats. This is given in quantities of from 18 to 22 pounds per day per 100 layers, the exact amount depending upon the breed of fowls and the weather conditions. Heavy hens require more grain than light birds and in severely cold weather all need more to maintain their body heat.

In winter the morning feed should be given as early as possible, or better yet, scattered in the litter the night before after the hens have gone to roost provided there are no rats and mice. The litter should be stirred up with a fork three or four times a week so the grains will work well down into it and the hens will have to scratch for their food. The evening meal should be given at least an hour before dark as the hens must have time to fill their crops before going to the perches.

The mash consists of 100 pounds bran, 100 pounds middlings and 40 pounds high-grade beef scraps. This mash is fed moist and is mixed with an equal bulk of steamed alfalfa, the hens receiving as much of the crumbly wet mixture as they will clean up in 15 to 20 minutes at noon. To steam the alfalfa we put the proper quantity in a wooden pail and pour boiling water over it. Alfalfa will absorb about one-half its own bulk of boiling water and after setting for a few hours will become green and tender.

Once a week we add a handful to each pail of mash of both charcoal and fine grit. In addition, the fowls have free access to the dry mash, grit and oyster shell all placed in hoppers around the poultry house walls. All ingredients of this ration are comparatively cheap, easy to obtain upon the farm, simple and easily prepared and upon careful analysis will be found to embrace all the elements necessary for heavy egg production. The principal secret of its success is the heavy proportion of the two elements usually missing from farm flock rations—green food and animal food.

Some kind of animal or meat food is absolutely necessary for a heavy winter egg yield, and unless one has an abundance of milk a good grade of beef scraps is the most economical and convenient form in which to supply it. With all the milk the fowls would consume a small proportion of scraps, say 10 per cent would still be desirable in the mash.

Alfalfa is a valuable egg food and hens and pullets cannot eat too much of it. It contains valuable and essential protein and lime in an easily assimilated form, gives a rich color to the yolk, aids in the digestion of the grain ration and stimulates the appetite and makes large, plump eggs that bring top prices and reach the market with a minimum of loss from breakage.

While the alfalfa will furnish the fowls all the winter green food they require they will also relish small quantities of mangels, cabbage, turnips or potatoes. The active hen is the most productive and if these vegetables are available they should be hung up in the poultry house from cords so the fowls will have to reach, but not jump for them, and follow them back and forth as they swing.

FALL CARE OF FARM FLOCK

Henry Harris.

Fall is coming fast. The leaves and the dry grass rustle underfoot and of a morning frost is heavy on the garden and lawns. Nature is beginning to prepare for the winter sleep, it behooves man to likewise make things ready for the cold days that are to come. With the hay in stack, the grain in the bins and most of the other farm work out of the way the farmer is sometimes at a loss to figure out jobs for winter days. One occupation that will bring in some spare cash and not take too much time is that of giving the poultry a little better care. It will pay. Eggs can be had if the birds are well grown and strong, and winter eggs mark dollars rapidly. But to get winter eggs care is necessitated, care in winter and preparation in the fall.

This is a good time of year to cull out the poultry. True, prices for market birds are not as high as they were earlier in the season, but they will not be any higher as the weeks go by and every day the birds consume just so much feed and cut down the profit proportionately. Even though the price is low, it is best to get rid of all surplus birds as soon as possible. The extra cockerels, in fact all the cockerels on the place should be marketed at once. These birds eat their heads off, are a nuisance and take up room that had better be given to the pullets that are to make your winter layers. Besides the cockerel there are the older hens, many past their usefulness, which should also be sent to the shambles. Then there are the small, late hatched, undersized and undesirable pullets. These birds, even though given the best of care, cannot possibly make winter layers and there lies small profit in keeping them through the winter for spring egg production. Of course, if they happen to be particularly fancy fowls desired for breeding there may be an excuse for keeping them, but even if their breeding is of the best it would be better to use older and more mature birds.

Pick out the pullets for winter layers now, get rid of the rest of the birds and devote all your attention to these. They will repay it. Even though they do not number all the birds you would like to keep, it is better to have too few good birds than a lot of useless ones. Poultry will always do better when it is not crowded. Pick out the earlier hatched pullets, those which show the greatest maturity and whose combs and wattles give evidence of early egg production. There are complicated ways of selecting egg producers, ways too complicated to be given here, but in brief the pullets showing the largest and reddest combs, with the most vigorous and perfectly developed bodies are the ones which generally produce the first and most eggs. Select pullets long in body, active in their actions and movements and ambitious in their search for food. Force these pullets all you can, that is feed them well and hasten their development. With egg prices mounting rapidly the sooner these birds get to laying the more money will be derived from the flock.

Look to the poultry house and see that it is in good shape for the winter. It is better to have everything ready before the cold nights begin, for a freeze cold enough to touch the combs of these young birds will often stop their laying for the balance of the winter. Clean the house out, put a foot or so of straw over the floor for the birds to scratch in and get in the habit of feeding the grain in this straw. Then go over the house with lice mixture spraying it in all the cracks and painting the roosts whether you can find any lice or not. There are sure to be some and even if there were none the disinfecting will do no harm. Clean the nest boxes and fit them with clean straw and provide grit and oyster shell. Teach the birds to all roost in the hen house instead of in the implement shed, the barns and the trees. All these are small items yet they sum up the total of good poultry care.

But first of all, cull out that flock. Get rid of the non-producers and do it at once before the cold weather starts. Your atention given to a few of the best pullets will be far more conducive of egg production than if indifferent care is given to a larger flock. The size of the flock does not matter so much, it is the average egg production that really counts and a high average cannot be obtained from mediocre and mixed flocks. Never mind if you do market all your cockerels. You can buy better ones in the spring and obviate the necessity of feeding them all through the winter months.

SKIM MILK FOR YOUNG CHICKENS

Skim milk is a farm product whose food value is not fully appreciated. It is not generally realized that milk loses little in actual food value by skimming. It is true that most of the fat is removed in the cream, but the most valuable food constituents—i. e., the nitrogenous substances—are left behind in skim milk. Skim milk not only contains much nutritive material, but this material is in a form which is, as a rule, easily digested. It is not only healthful, nutritious food for man, but it may be fed to calves, pigs and chickens with excellent results. Its composition is such that it may be substituted for part of the grain food, especially corn, on these animals with benefit and profit.

The Indiana station has recently made some interesting experiments on the use of skim milk for young chickens. Two uniform lots (4 to 6 weeks old) of 10 chickens each (5 Plymouth Rocks and 5 Houdans) were fed from July 11 to September 5, under identical condition except that one lot received in addition to the food given the other all the skim milk they would drink. "Both lots were given all they would eat of a mixed food consisting of two parts crushed corn, one part bran, and one part ground oats. They were fed three times a day, except on Sundays, when an increased amount of food was given at the morning and evening meal. Both lots were also given all they would consume of cracked bone, cabbage, lettuce and water of which no record was kept."

It was found that the lot receiving skim milk ate more of the mixed food and made a more rapid and satisfactory gain than the lot which did not receive skim milk. Milk-fed chickens made an average weekly gain of 4.46 ounces, those receiving no milk 2.62 ounces. The most rapid increase in weight occurred at those periods when the largest amounts of skim milk were consumed. The skim milk is considered "especially valuable as a food for young chickens during the hot dry weather and becomes of less importance as the chickens grow older and the weather becomes cooler."

The vessels in which the skim milk is fed should be scalded frequently to keep them clean and wholesome.

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Now ready FOR SALE. From Richards' "Pathfinder" and "Defender," and prize-winning sows. My junior yearling boar, from "Defender," won 2nd pride at recent fairs at Boise and Salt Lake. Prices very reasonable.

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100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make you acquaintance. See these animals before buying elsewhere

PURE BRED, LARGE TYPE POLAND CHINA HOGS FOR SALE. Write A. C. Anderson, Box 1, Ephraim, Utah.

HORSES AND COWS FOR SALE

On account of using a motor truck and trailors, the State Mental Hospital, Provo, Utah, will sell four horses from 1300 lbs. to 1500 lbs. and five well-bred colts, one to three years old. Will also sell a few pure-bred Jersey cows and heifers.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.

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When the fire is low and the room gets chilly put a match to your Perfection Heater. You'll be toasty warm in a jiffy.

A Perfection Heater is cheap in price but strong, light, good looking, simple to operate and *built to last*. Its flexible base allows it to set level on any ordinary floor and reduces any tendency to rock. It gives cheaper heat than any coal fire—even when coal is cheap. It can be carried anywhere.

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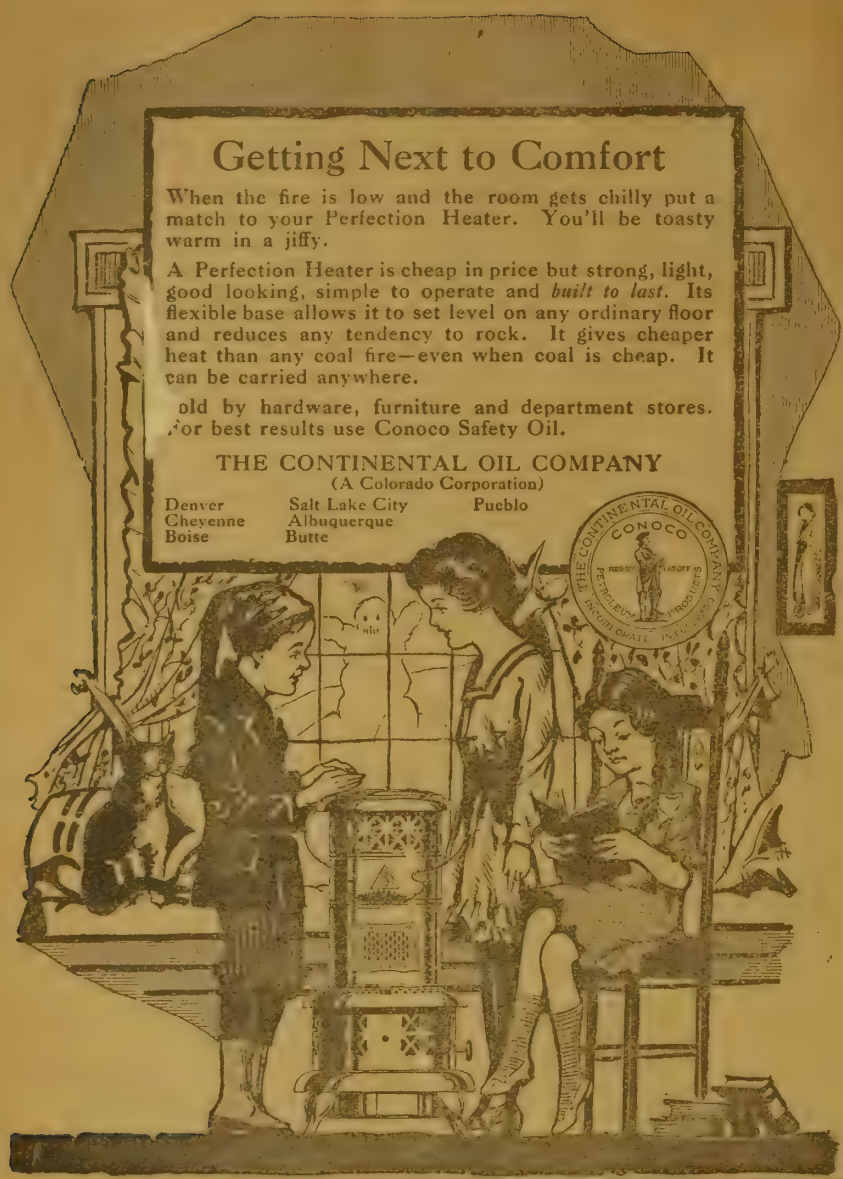

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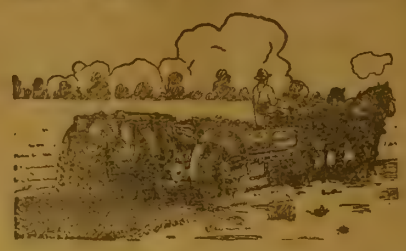

WHEN corn was selling for 50 cents a bushel, one of our dealers made this offer to a skeptical farmer: "Use this manure spreader to top-dress 20 acres of your 40-acre corn field, putting on eight loads to the acre. Leave the other 20 unmanured as you meant to do with the whole 40. I will take the difference in the yield between the two 20's for the spreader." The farmer agreed, thinking to get his spreader at a low price.

The 20 on which he used the machine produced 512 bushels more than the other 20. He paid the dealer $256.00 for the spreader—a great deal more than its present selling price. Today, higher prices would make that difference about three times $256.00!

You simply cannot afford to be without a spreader when it will pay for itself like that. Hand spreading is out of the question. You want the manure pulverized and spread evenly, not dumped out in big lumps unevenly.

Now that we have added the New No. 8 Spiral Wide Spreader to the Low Corn King and Low Cloverleaf lines, we are in a position to suit any farmer. The No. 8 machines are for the average small farm, very light draft, narrow boxes, spiral wide spread (regular). Our big No. 6 machines—Corn King, Cloverleaf and 20th Century—are "whales for work", easy handling and loading, steel construction, light draft. With the No. 6 spreaders you may have the efficient disk wide spread (regular) or the new spiral wide spread (special).

Here is a spreader for every farm. This year, of all years, you need one. Write us for full information.

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Without money—without the millions and billions of dollars necessary to equip with the tools of war and supply with clothing and shelter and food that vast army of American boys who are offering their all to protect the sanctity of OUR homes, the hardships they will endure, the agony they will suffer—the life blood many of them will give, will be given in vain.

Every American—every Utahn, rich and poor alike, must provide his share of that money. Utah's allotment of the Second Liberty Loan is $12,000,000. There are approximately 80,000 families in the state. If each family subscribes to one $50 bond, barely one-third of the state's portion will be covered. This means that each of us must AT LEAST buy one $50 bond—and those whose circumstances will permit must buy more.

Two Ways to Buy a $50 Liberty Bond

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For the same proportionate payments you can buy Liberty Bonds of larger denominations.
Your own bank, or any bank, will be glad to take care of your subscription.

Liberty Loan Bonds are a safe and profitable investment as well as a patriotic investment. Behind those bonds, which pay 4% interest, stands every resource of the United States Government.

Go to your bank at once. Set an example for your neighbors to follow—and show the brave boys who are offering their lives for the cause of humanity that you are backing them up with your whole heart and soul.

LIBERTY LOAN COMMITTEE OF UTAH

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 13 LEHI AND SALT LAKE CITY, UTAH OCTOBER 27, 1917

The home of a prosperous farmer

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SUGAR BEETS

SOME POINTS IN SUGAR BEET RAISING

By Clarence Austin, Garland, Utah.

As the sugar industry is rapidly becoming one of the greatest agricultural industries in the United States, it is beneficial for the beet raiser to be able to see and do such things, to become better acquainted with the industry and increase the proceeds of there labors. Beets being very sensitive to soil conditions and proper management, the greatest care should be taken in selection and preparation of soil where they are to be grown. Extremely heavy are very light soil should be avoided if possible, the farmer should try to select land that is of good texture, and having good water holding capacity, and high in organic matter and other avaliable plant foods, sandy loam are clay loam are most suitable for beet raising. Heavy soil if used should be well fertilized either by hauling barn yard manure or plowing under green crops such as alfalfa and rye. In some localities it is necessary to add lime or other substances that are lacking in the soil. These applications make better aeration and lighten up the soil, and help to avoid the water logging of land and balancing of the surface. Draining is also a beneficial factor. Very light soil can also be helped by these treatments.

Deep fall plowing is very essential to beet culture in most cases; the depth of plowing should be from ten to sixteen inches.

In the spring great care should be taken to get on to the ground at the proper time, and work it in the proper way. You should try to get the best possible seed bed with a mulch on top to prevent the escape of moisture by evaporation.

Planting is a very important factor, in getting a good stand of beets. The seed should not be put in until the ground is warm enough to cause quick germination. The ground should be examined as to moisture conditions and the depth of planting be determinded, usually being from one to three inches. from 8 to 15 pounds of seed per acre is enough under normal conditions.

As soon as the plants are up so the rows can be seen plainly, it is a good thing to roll the ground. The beets should then be cultivated with knives or discs to destroy the weeds and mulch the soil, then follows the very important factor of thinning which should be done very carefully to leave only one healthy plant in a place from 10 to 12 inches apart.

As soon as the plant straightens up and commences to grow you should cultivate as deep as possible without covering the plants. This should be repeated about every 10 days in order to keep the weeds down and keep the ground loose and moist, to give the plant good growth in the early stage, you should hoe the beets frequently to loosen the ground around the plants and get the weeds that are missed by the cultivator.

Weeds are very detrimental as they take the moisture from the land and help to spread fungis diseases that damage the crop.

In the latter part of June and the first part of July the beets should be watched very closely, when they commence to show a wilting stage they should be furrowed out and irrigated. Great care should be taken here to give the beets plenty of water and not to over irrigate as it is very dangerous both to the soil and the crop. You should have your ditches so arranged that you can spread the water as evenly as possible. Do not let water stand in ponds on the beets as it shuts off air from the soil and has very damaging effects to the beets. From 25 to 30 acre inches of water should be applied during the season, in from one to four applactions, according to water holding capacities in the soil.

When you are ordered to harvest, great care should be taken to properly handle the beets and deliver in a good marketable condition.

Tops and other substances should be fed on the farm or plowed under so as not to take off the plant food value they contain.

Not more than from three to four crops of beets should be grown on the land without changing to some other crop as it is very detrimental in spreading disease, and running down of the soil plant food.

FALL PLOWING

By I. D. O'Donnell.

The backward spring season of 1917 should serve as an object lesson for the farmer who has not heretofore made a practice of fall plowing. Last spring was certainly discouraging to the man who had to plow for all his 1917 crop, and the crop returns will be discouraging when compared with the returns from fall plowing.

Fall plowing has advantages which should not be overlooked these days of high prices and scarcity of labor.

Heavy soils for spring seeding should always be fall plowed. Such soil may be plowed more deeply in the fall than is safe in the spring; also it may be plowed when more wet or more dry than is permissible in the spring.

Trash turned under in the fall has time to rot during the winter; trash turned under in the spring may not rot and, if it does not, will seriously interfere with the movement of water in the soil and with the root development of the crop.

Soil turned up in the fall and left rough during the winter will catch and hold winter moisture. As a rule, fall plowing, through the holding of winter moisture, requires one irrigation less than does land which is spring plowed. This is an important item when labor is scarce and water is bought by the acrefoot.

Soil left rough in the fall will be firmed down during the winter and pulverized by frost action to the extent that much less work is required to put it into shape for seeding in the spring than in the case with spring plowing. Oftentimes a single harrowing will put fall plowing in shape for seeding; with spring plowing three to five operations are necessary. Winter weather on plowed soil will do from $2 to $5 worth of work per acre for the farmer.

Plowing and fitting soil is the hardest work farm horses have to do. Spring plowing comes at a time when the horses are soft from winter idleness and is responsible for many of the ills that horseflesh is heir to. Fall plowing comes at a time when the horses are hardened from the summer's work and when the work may be done more leisurely than in the springtime.

Seed will germinate more quickly and evenly on fall plowing than on spring plowing. It is particularly important on irrigated land that the seed germinate evenly and the entire seeding grow evenly; irrigations may then be timed to good advantage.

The one important disadvantage to fall plowing is that considerable roughage which might be used for stock feed may be turned under. If a farmer has livestock sufficient to utilize every item of roughage on his farm he may seriously debate turning under roughage early in the fall. In the main, however, the advantage in this connection lies with fall plowing, as the gain in production through fall plowing will more than offset the loss of the roughage plowed under.

Prepare now for next year's crops; do some fall plowing.

Forward looking farmers are making necessary repairs on their machinery before putting it away for the winter.

COURTESY—WARTIME NECESSITY

The Railway Age Gazette.

The railways at present are in a very difficult position, trying to reduce passenger service that they may better handle their more necessary wartime freight traffic, reducing portions in dining cars, getting after shippers to load their freight more heavily and to unload it more promptly, and at the same time doing their best to explain deliveries delayed becaues of congestion and lack of cars. Thus far, as a general thing, the public considers that it has been treated remarkably well, even under the adverse conditions. The public knows that the railways are up against a big proposition. The favorable attitude with which the man in the street has regarded the prompt measures taken to co-ordinate the railways through the Railroads' War board is a subject of comment. A satisfied public is an asset of great value, and the railways have a great deal to be thankful for in that they succeeded in encouraging the friendship of their "constituents" at a time like this. . . . . .

We know that if the public is treated right it will be more willing to understand that 100 per cent perfect service is not possible in time of war, and it will be more likely to believe that the railways are doing their level best to give the forces in the field and the public at home the best that is in them.

In other words, do not let the strain of war conditions allow us to forget the necessity for courtesy. Emphasize courtesy and fair dealing more than ever, so that the new employees—the women, for instance—who take the places of those who join the colors may understand that the good opinion of the public is the thing that counts. And prop up some of the weak points that still exist. Do not emphasize the value of courtesy to your patrons, and then let trainmen insult passengers and freight clerks ruffle the temper of consignees. Do not count on polite train crews alone, and then let a surly gateman shut a gate in a passenger's face, and cut off his nose almost and his friendship entirely in the same second.

USE AND CARE OF MACHINERY

Make hay while the sun shines—keep your machinery busy whenever weather conditions permit. Scarcity of labor and high prices for food products are incentives to follow out the old maxim.

Loss of time due to poorly repaired machinery frequently means loss of part of the crop. Repairing can be done at odd moments and on rainy days so that the machines will be ready to start work at any time. For example, if it is decided suddenly to cut hay, the farmer will not need to spend several hours in getting the mower, the rake, and other implements ready.

In ordering repairs it is best to give the number of the machine, the year purchased, the number of the part, and the exact address of the person to whom the repairs should be sent.

Many farmers are finding that it saves time to keep a few of the more important repairs on hand, such as sections and guards for the sickle for binders and mowers, shares for plows, and spark plugs for the tractors. These are not expensive and if one of these parts breaks a new one can be put on with little loss of time.

When through with any machines for the season, it is an excellent plan to tag all the parts that should be replaced before machines are used again. Then in the fall it is well to order all of these parts and have them put on in the winter. This makes it possible to have the machines ready for use long beforehand. It makes it possible also to get the repairs when ordered instead of waiting until spring when time is valuable.

The probable shortage of implements means that old machines should be kept in the best of repair and that new machines should be purchased some time before they will be used. With a labor scarcity, difficulty in obtaining steel, and congested freight it may be good business policy to buy all machines needed for the next 12 months or to make the necessary arrangements to buy each machine later

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

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VOLUME XIV. LEHI, UTAH, SATURDAY, OCTOBER 27, 1917 No. 13

Make the Forage Crops Go Further

E. J. Fjeldsted, Field Animal Husbandman.

This year's hay crop is already bringing unpreced nted prices. The shortage of hay in the United States is causing alarm and no little apprehension among cattle and sheep men. Farmers of southern Idaho have a better supply of hay than those of neighboring states, but the high prices that are likely to prevail till another crop is cut demand that the most rigid economy in feeding be practiced during this coming season.

In glancing about for a hay substitute the various straws are the first materials that usually come to mind. Straw was used extensively last winter but with little or no regard for economy. Animals were allowed to run to the stacks and the greater part of the straw was tramped into the ground. At present there is a movement in the state to follow some system of feeding straw this coming winter.

How to Feed Straw.

There are a few principles involved in feeding straw that must be observed if the best results are to be obtained. Instead of turning the animals loose to the stack, the straw should be fed in feed racks. Putting the straw through a feed chopper adds materially to its value as a food. All straw, being low in moisture content, addition of alfalfa hay or roots to the ration will correct this tendency. Straw should never be fed as the sole ration. A small amount of grain silage, roots, pulp or molasses in the combination will aid very materially, especially when fed to immature animals. Only bright straw, free from mold, and excessive dust, should ever be fed. This is especially true where breeding animals are concerned. A little attention in stacking at threshing time will prevent much loss from weathering.

Relative Value of the Straws.

Of the grain straws, oats come first, barley second, wheat third, rye fourth. It is doubtful if the latter should be used for anything but bedding. Alsike clover is the best of the clover straws, followed by red clover, with white clover straw last. Of the other legume straws, pea straw takes first rank, followed by alfalfa, and then bean straw.

Rations.

Straw and hay may be fed together or separately for dry stock. By adding 5 per cent of sugar beet molasses to chopped straw a good feed for carrying over stock is secured. Chopped straw fed in combination with chopped roots, or silage, also makes a good feed for this purpose.

Clover and other legume straws may be used with profit in feeding sheep, particularly if fed with silage or roots, and in this way a large amount of hay may be saved. Great care must be used, however, in feeding alsike straw to horses, since there are cases of fatal results because of alsike poisoning. Some alfalfa hay should be fed in combination with clover straws to really get the best results.

Properly cured pea straw ranks highest of all straws, approaching good alfalfa hay in value. However, it does tend to produce constipation, especially in horses, and for this reason should not be fed to horses as a sole roughage. By adding a small amount of alfalfa hay, this evil may be corrected. With other classes of livestock, pea straw may be used as

(Continued on page 7)

LIVESTOCK IS ONE OF THE MOST PROFITABLE INVESTMENTS ON ANY FARM.

The Utah Dry Farm--- New Era Develops

By Dr. F. S. Harris, Director of Utah Agricultural Experiment Station.

Dry farming during the last few years has become a very important industry in Utah, where it had its birth as far as the United States is concerned.

The early pioneers irrigated their crops, but in certain sections it was not many years before land above the ditch was plowed and planted. A few of these first attempts succeeded; many failed. It took time to develop methods of handling the soil so that crops could be raised regularly with the scant precipitation; but as years passed success became more certain, until, in many places with proper methods, dry farm crops are now almost as sure as irrigated ones.

The establishment of a number of dry farm experiment stations in the state did much to place dry farming on a more scientific basis, and to assist in discovering proper tillage methods, as well as introducing and developing crops better suited to arid climates than those previously grown. During the first years of these stations their energies were devoted largely to making practical demonstrations of what could be done in the various parts of the state, but now that the areas of successful dry farming are more definitely outlined expermients of a more fudamental character can be undertaken.

New Era Develops.

The passage of the enlarged homestead act by the United States Congress made possible a new era of dry farm development in Utah. Tracts, the settlement of which previously was impractical, became available and the area cultivated was greatly increased. New lands were thrown open to entry and the increased size of homesteads given by the government enabled farmers to acquire sufficient land to justify the use of modern machinery.

This very rapid growth in dry farming naturally brought into the industry many men who knew little or nothing about it, and, as a consequence, all did not succeed. Often poor judgment was exercised in the selection of farms which were located in areas having a low precipitation and on a soil not at all suited to the retention of moisture. These mistakes did much to retard the normal development of dry farming in Utah and other western states, since every failure, regardless of the cause, has a hindering effect.

Utah has millions of acres of land well adapted to dry farming; likewise in the state there is considerable land that can never be successfully farmed without the use of irrigation water. In dry farming, the soil must be of such a nature that the precipitation of one of two rainy seasons can be stored for the use of crops later. A soil, therefore, that is shallow, or low in waterholding capacity, cannot be used successfully in dry farming. Seams of gravel near the surface are particularly undesirable, since they prevent the return to crops of moisture that has passed to the lower parts of the soil.

Foundation Necessary.

A good dry farm soil is light enough to work easily and at the same time its texture is fine enough to retain a large amount of water. The texture should be uniform to a depth of at least eight or ten feet. If these precautions regarding texture are observed and care is taken to select a soil free from injurious alkali, in a

(Continued on page 11)

Profit In Feeding Sheep

Wm. Olsen.

In one of our Southern Utah towns last winter a young man made $1,500 feeding 274 head of sheep. This was a net profit for he allowed $15.00 per ton for the alfalfa he fed, and simular prices for all the grain he used. Many of his neighbors did as well or better.

This profit could be more on many farms because they have so much feed that will go to waste unless sheep or some other livestock use it.

I have in mind another man who did equally as well as this young man on a smaller investment because a great deal of the feed was pasture and really a net gain.

Taking into consideration the manure they make and the weeds they clean out, it can be considered net profit. Of course they were fed hay and grain to finish them, but the first few weeks was pasture.

Extreme care must be used in turning sheep onto an alfalfa pasture where the feed is extra food. Never turn them in while they are hungry or when heavy dew is on the green feed.

The good feeder will tell you to never let a sheep get hungry. The point is that so long as a sheep does not become hungry he will not gorge himself.

What the farmer of Utah wants to do is feed more sheep. Do not send them east until they are fat. Market your hay and grain on four feet instead of four wheels.

If the reports as given in the Utah Farmer are correct about siloing beet tops another good reason for having more sheep to feed. Thousands of tons of tops and crowns are the same as wasted, because they are not used as feed for some kind of livestock.

One sheep feeder told me that he grew 5 tons more of beets the following year on land that he fed his sheep on. This would come as an extra profit in the sheep feeding business.

Why not have two crops a year, one of beets, grain or alfalfa and the other in livestock. Make a profit on growing your crops, then another on feeding them.

More than the two crops, you will increase the fertility of your soil.

These are a few reasons why you should feed some sheep on your farm.

DAIRYING

PREPARING COWS FOR WINTER DAIRY

By H. H. Kildee.

The manner in which cows are fed and managed during the six to eight weeks' period prior to calving has much to do with their year's production. Improper feeding or failure to give proper rest between lactation periods usually results in a decreased production for the lactation period.

It is a good plan to have a small pasture, so that cows due to freshen in the summer or fall may have an abundance of grass and not be molested by other cows. In addition to this, a few pounds of ground oats, which is one of the best feeds for pregnant cows, and in some cases a small quantity of cracked corn and bran will be sufficient. For cows that are to freshen during the winter months, corn silage makes an excellent substitute for pasture grass, and in summer it should oftentimes be a supplement to pasture grass. In fact, it is impractical and unprofitable to attempt to run a dairy farm without corn silage. A ration made up of twenty to thirty pounds of corn silage, all the alfalfa or clover hay they desire, and a grain mixture of three parts ground oats, two parts bran and one part oil meal, will prove very satisfactory. The amount of grain per day should be governed by the individual animal.

A small quantity of corn may be given to animals thin in flesh, but they should not be crowded, but rather fleshed up slowly. Too large a quantity of corn is likely to have a bad effect on the system. Timothy hay and cottonseed meal are very undesirable, as they are rather constiptating, while laxative feeds are needed at this time. It is well to reduce the ration slightly just prior to calving, as by so doing the danger of milk fever and after calving troubles are decreased to some extent. It is best to put the cow in a clean, disinfected, well-bedded box stall a few days prior to calving. If her bowels are not moving freely, a dose of three-quarters to one pound of Epsom salts or one quart of raw linseed oil will prove very beneficial.

For a few days after calving the cows' drinking water should be lukewarm. In addition to alfalfa or clover hay and a small quantity of corn silage, she should be fed bran mashes or a small allowance of bran, oil meal and oats. After about three days she may then be placed on more solid food. At least thirty days should be taken in getting her up to full feed and care should be taken to increase bulky feeds that are laxative first and the heavy concentrated feeds later.

WHAT IS A COW WORTH?

Good dairy cows command a high price anywhere in the west. They average probably $25 a head higher than they were a year ago. With us first class cows readily bring from $125 to $150, although many of them are bought at $75 to $125 each. Such cows as a rule are unprofitable. Our high priced irrigated land and feed make a better grade of cows indispensable to profitable dairying. Under such conditions no man can succeed or long continue in the dairy business without the best cows. The only way to know the good cows from the boarders is to keep individual records of each animal. When economically studied from the standpoint of milk production in excess of feed cost, a cow's value increases in almost geometric ratio as her production increases. In our own experience we have formulated a working rule for estimating the value of cows based on a yearly production of fat, which we believe will be found safe and applicable to any case. Any cow not yielding the quantity of fat given herewith is worth only beef prices, at the ages named:

Age	Maximum fat per year	Maximum value for milk
2	150 lbs.	$50.00
3	185 lbs.	60.00
4	220 lbs.	70.00

Add $1.00 to the value of each cow for each pound of fat above those quantities producer in a year, by continuing her in milk only so long as she gives over one-half pound of fat a day. As a depreciation allowance for age, deduct 10 per cent of this total value for each year the cow's age exceeds six. Under this rule, as you will see, the value of a two-year-old heifer producing 100 pounds of fat in a year is $100; if producing 300 pounds the value is $200 and if producing 400 pounds of fat the value is $300. A five-year-old cow producing 200 pounds of fat in a year is worth less than $70, or only beef prices; if producing 300 pounds she is worth $150 and if producing 400 pounds she is worth $250. A ten-year-old cow producing 200 pounds is worth only $60; if producing 300 pounds she is worth $90 and if producing 400 pounds she is worth $150. No stabling is needed as a protection from the cold. A simply constructed open shed barn is needed, however, as shade from the sun and shelter from the winter storms. The open air life for the cows the year around means a more healthy herd, and our open milking sheds give us complete exemption from stable odors and ventilating troubles. Here as elsewhere abortion is a far more persistent and serious drawback to the dairy business than tuberculosis. The number of abortions annually in the herds receiving the best attention will average from 5 to 8 per cent. The production of milk on a large scale can be made a business success if business methods are employed. Efficiency and system are just as essential as in any other enterprise.—Field and Farm.

OAT AND PEA MIXTURE FOR COWS

By Prof. Thomas Shaw.

Those who are keeping cows and who have been accustomed to feeding them freely large supplies of meal should carefully ponder. He should try and grow food for his cows that will obviate the necessity to the greatest extent practicable of feeding meal that has to be purchased.

Among the substitutes in dry areas, two crops stand out prominently. One is corn grown for the silo or to be fed as forage without being husked. The other is a mixed crop of peas and oats fed a little under ripe. If the farmers can do both he is so much the better equipped for his work. Now is the time, however, for considering how such equipment may be provided.

In areas where the precipitation is light, there is probably no way, all things considered, in which the grain needed may be obtained more cheaply for cows than by growing a combined crop of peas and oats or one of beardless barley and oats. The writer obtained from two to three tons per acre from both the above mixtures when grown in combiation in certain parts where the rainfall was rather less than 15 inches for the year.

This combined crop may be sown on either fall or spring plowed land. Where no preparation has been made for the crop the previous year the plan is good that scatters the peas over the land and then harrows them before the land is plowed. Another way is to deposit the seed with the drill so that it will lie just below the surface of the ground. In both cases the object sought is to prevent the peas from rolling into the lines between the furrows as the land is being plowed. The furrows are so wide that if the peas were buried without some precaution to keep them in place the rows of the peas would be unnecessarily for apart. The ground should be plowed to the depth of not less than four inches. The peas should be well down, as then they will stand dry weather much better than if planted at a less depth. The ground should be harrowed as soon as plowed or what would be better, should be disked and then harrowed in order to farm it.

When the peas are say two inches short of the surface which should be in say about 12 days after planting in early May weather, the ground should be thoroughly harrowed. Such harrowing will kill any army of weeds. The oats should then be drilled in to the depth of about two inches. The oats will not thus overshadow the peas as they might if sown earlier, that is at the same time as the peas.

Another plan is to put the peas in with the drill, to the depth of three to four inches in fall plowed or spring plowed land, and to sow the oats later following the plan of harrowing, and sowing the oats as outlined above. Yet another plan is to mix the oats and peas before sowing and put both in with the drill at the same time burying the crop to the depth of say two and one-half or three inches. The last method will answer quite well where there is a fairly liberal supply of moisture. But the aim should be to sow peas and oats that will ripen about the same time.

The amounts of seed to sow will vary with the normal amounts of the precipitation, where the rainfall in the west is about 14 to 15 inches for the year, from three to four pecks of seed will be enough to sow of peas and from one to one and one-half pecks of oats. Just enough of oats are wanted to sustain the peas from falling down, and not enough to overshadow the peas in their growth. Where the rain is ample the tonnage will be increased by increasing the quantity of oats sown. As much as two bushels of the mixture have been sown in most areas, and in some instances it has been found quite feasible to sow as many

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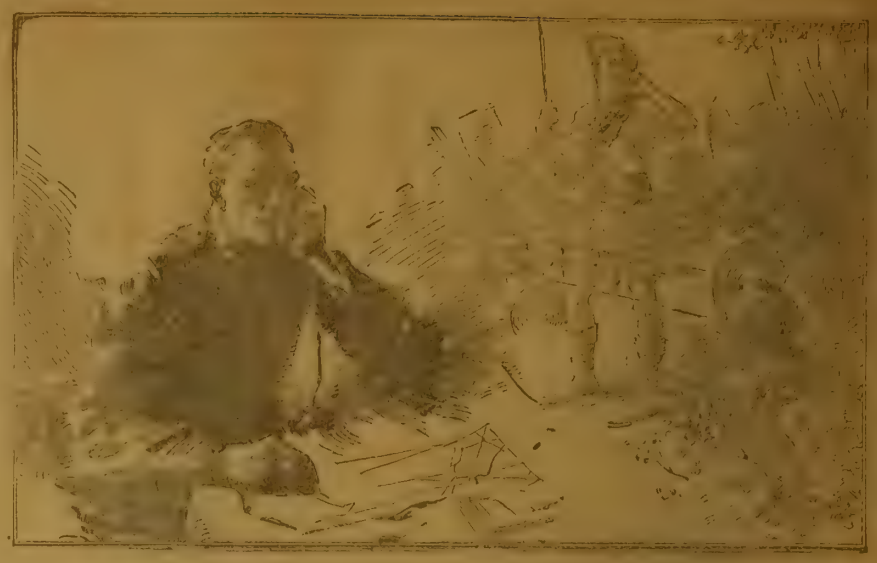

The Instant Summons

"Instant, through copse and heath, arose
Bonnets and spears and bended bows;
* * * * *
As if the yawning hill to heaven
A subterranean host had given."

The whistled summons of Roderick Dhu, the hero of Scott's "Lady of the Lake," caused his Highland warriors literally to spring from the earth. Ere the echo died away, from behind bush and rock emerged the loyal and ready clansmen. In armed silence they awaited their chieftain's bidding and typified his might.

Today the Commander-in-Chief of our nation's armed forces and the resources behind them, can, by lifting the telephone receiver, instantaneously set in motion all the vast machinery of warfare, munitions, transportation and food conservation.

Like the Scottish mountaineers, the American people must stand in loyal readiness to perform any service in furtherance of the nation's high aim. Such a spirit of co-operation and sacrificing of individual interests can alone make certain the accomplishment of the great task to which our country is committed.

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oats as peas. But, however, sown the aim should be to avoid using enough of oats in the seed to overshadow the peas. The pea crop is the more valuable element in the food.

For two or three weeks before maturing and in some instances for a longer period, this crop may be cut and fed in the green form to cows in milk. It will thus render good service when the pastures have become dry, which is sometime in August. After the peas and oats have matured corn will take the place of these, thus prolonging the season for feeding green food.

When the combined crop is used in winter, it is cut just a little under ripe. The peas will have become too hard for cutting, and yet they retain their green color, and the oats will have reached the dough stage. Unless the crop has been knocked down by storms, it may be harvested by the binder in the same way as other grain. It is fed directly from the sheaf. When such a ration is freely fed it would seem unnecessary to feed grain from any other source. The cost of threshing and grinding is thus obviated. That more attention is not given to growing this crop is not easily explained, especially when it is so easily feasible to produce it.

It is usually considered a good plan to feed grain to cows in milk in the winter season. In some instances large quantities are fed to high producing cows. A plan is to be commended, providing the grain does not cost too much. A breeder in New England mentioned in a letter to the writer not very long ago, that he was paying $40 a ton for mill feed. It would seem impossible for a dairyman to make any money from producing milk under such conditions. A dairyman in the west who is well supplied with good alfalfa, would assuredly make more money by feeding alfalfa only than by adding meal at that price. The milk obtained would be less but it would also be obtained at a much less cost. The feeding problem is governed in the main by rules that generally apply. But in some instances there are exceptions, and it is well to understand these.

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CARE OF THE SEPARATOR AND CREAM

To obtain a number one quality of milk and cream proper care must be taken during the milking hour. Also, with all the milk utensils with which the milk must come in contact, strict care and cleanliness must be the constant rule.

Pails, cans and separator must be washed every time they are used, sterilized every morning, and pails and can must be kept out in the open air during the day to keep them sweet and clean. Above all, keep the cream separator in a good clean room. Some keep their separators in the basement with their cows and horses, with the dust and odors of the stable. And, horrors! at evening time the milk is run through the separator, then left standing over night; the unwashed separator again being used in the morning, while the milk pails were rinsed out with cold water, then set away, to be used in the morning. No doubt harmful bacteria have taken up their abode in this cream, which is now sent to the creamery to be made into butter.

If a good milk house is considered too expensive it is better to place the separator in the kitchen, where it can receive proper care and attention.

As soon as the milk is drawn from the cows it should be removed from the stable and separated at once.

Cooling the cream is also important. Place cooling can in some cold water. If possible pack the cooling can with ice to insure cooling the cream rapidly. It should then be kept at about seventy degrees Fahrenheit. Never turn warm and cold cream together, but have it all at about the same temperature.

Never send cream to the creamery that you do not consider good enough for home use.

Here are a few good rules that if followed would insure a better quality of milk and cream:

Keep separator in a good, clean room.

Wash all milk utensils every time they are used.

Remove milk from barn as soon as possible after it is drawn from cows.

Separate milk and cool the cream as quickly as possible.

It is impossible to make good butter out of poor, stale cream.

When your cream is delivered at the creamery, you know that you have not only done your duty, but have contributed good, clean and healthful cream to be converted into sweet, wholesome butter for the market, free from all the harmful bacteria which are found in poor or stale milk or cream.—L. M. Davis.

USE BETTER SIRES AND SAVE MONEY

Good indifferent, and poor, there are over 20,000,000 dairy cows in the United States.

The good cows under most any conditions of environment return more or less profit to the owners; the indifferent cows return a profit or loss according to the conditions of their environment; while the poor cows, under like conditions, show only less or more of loss.

The key to the whole betterment problem is the education of the cow owner along dairy lines, coupled with the betterment of the dairy stock of the country.

As soon as any farmer-dairyman sees the need of better stock and begins to take pride in such stock as he has, he will also begin to give thought to the bettering of the environment; and, as his dairy education progresses, he will begin to give attention and support to intelligent efforts product, which means higher prices for milk and milk products.

The great bulk of the common stock of the country is mongrel. In calling it mongrel, I mean that it is so mixed in blood that nearly all desirable characteristics resulting from any infusion of improved blood have been either lost or neutralized.

If each of the [illegible] dairy cows in the United States could today wear a card showing her production during the year 1915, together with the cost of feed consumed, I have not the slightest doubt that one-fourth of these cows would be found wholly unprofitable.

There is but one practical way to better this mongrel stock situation, and that is by either replacing with purebred stock, or by grading up the herds through the use of purebred bulls of the established dairy breeds, at the same time eliminating the unprofitable cows from the herds.

Suppose for a moment that it were possible to cut out and save the care and feeding expenses on 5,000,000 unprofitable cows; the saving would be at least $100,000,000 per year. And again suppose it were possible to add 600 pounds of milk, worth at least $9 during the present year to the production of the remaining 15,000,000 cows in the country; in that case the yearly gain would amount to $135,000,000 more.

Such an immediate saving and gain is of course impossible, because improvement takes time; but it is not only a possible accomplishment for the future but may be far surpassed.

But one out of 200 of the purebred dairy bulls born in the herds of the country is needed for use within his breed, leaving 19 out of the 20 available for the use in the improvement of grade or common herds.

What is wanted is the bringing together of the one who needs and the one who breeds the surplus bull; and thanks to the progressive spirit abroad in the land, this is fast being accomplished.—M. H. Gardner.

CAUSE FOR SOFT BUTTER

It is a common belief that soft butter in spring is due to the large amount of water on the new grass. Some feeders have even gone so far as to cut down on the amount of water allowed in this season, thinking it would improve the product. The fact of the matter is the water has no effect on the condition of the butter, but the change is due to the butter fat itself.

Butter fat is composed of two kinds of fat known as volatile and non-volatile. Each of these in turn is made up of a number of substances called fatty acids, but which for convenience we will speak of as oils.

The non-volatile oils are six, and their relative amounts in the butter fat largely cause the variation in hardness and softness of the butter. The most important of these oils is olein, since it has been found to be present in the greatest proportion during spring when the cows are on grass. Olein has a much lower melting point than the other oils, and consequently an increase in its amount causes the butter to melt at a much lower temperature. We can readily see the cause for soft butter in the spring is not the water in the grass. In fall or winter when normal feeds are given the percentage of olein is less, the melting point is higher, and we have a firmer, harder product from the churn.

Cutting down on the cow's water supply because the grass is soft does not make the butter harder; it only cuts down on the amount of milk your herd can produce.—Successful Farming.

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Wind fall apples makes good sauce. Use plenty of them.

"If 'corn is king,' then the silo is the king's 'treasure tower.' For there can be no question that the way to get the most profit from the corn crop is to make it into silage."

Prepare your seed bed properly. Keep the harrows going till it is in perfect condition. An extra stroke of the harrows may mean many bushels more per acre.

Do you know the value of a ton of manure on your farm? What increase of production does it make? We know it helps but how much—enough so that we know it is worth using. Do not allow any manure to go to waste this fall or winter. See that every pound of it is put on your farm so that next year you can have bigger crops and receive more money for the work you are doing.

There seems to be some misunderstanding about the government requisitioning wheat from the farmers. The farmer has the right to store his wheat and any other kind of food stuff. It is the man who buys and sells that must have a license and make report to the government. There is no ruling of the government against the farmer or producer storing his wheat or any kind of food stuff.

PREPARE NOW FOR DRAINAGE

The rush of harvesting our big crops will soon be over and a little time should be given to the draining of our waterlogged acres.

In some districts there are several hundred acres in a single stretch of land that should be drained.

Fertile lands that have become non-productive can be redeemed and made to produce if they are properly drained. The cost is so low, about twelve to twenty dollars an acre, when the production is considered. This is more true today than ever with the high prices we are getting for farm products. The people of Millard County are [illegible] it on a large scale and will redeem enough land to employ thousands of farmers. Why don't other counties awake to this problem of drainage and increase their productive land? People would not have to go away then to buy farms. Now is the time to get busy on drainage.

FALL PLOWING

Increased production can be made if seed is planted at the right time upon thoroughly prepared seed beds. Best results will come when the land is plowed in the fall. Winter storms and freezing of fall plowed land helps to mellow and prepare it for early spring planting. When plowing is done in the fall it gives more time for spring work.

The price of wheat and beets for next year is already known and it will pay to spend a little extra time in making ready for next year's work. Plowing in the fall gives a better chance for any weeds or growth that might be on the land to decay and in this way help to increase the production.

Experiments have proven the value of plowing your land in the fall, do all the plowing you can before winter sets in, this will help you financially because of the better production. Will also help us feed the world.

SELECT YOUR BREEDING STOCK.

Where a number of livestock is produced on any farm, there is always a few choice animals that should be selected and kept for breeding purposes.

In each litter of pigs will be found one or more that shows signs of a better animal. Among the calves heifers will be found some well suited to repr duce dairy or beef quality, according to breed; and desirable individuals will be found in the poultry yard, the sheep pen, or among the colts. Do not let the high prices for stock induce you to part with what you raise of good breeding stock. The demand for livestock will not cease with this season.

Observe your young stock and select the particular type of animals you want to breed up. Give them a little extra care. The selection of your best animals is the best and cheapest way for you to get better livestock. New and strong blood of the kind you are developing may be secured through the purchase of males.

STRAW IS VALUABLE.

Every ounce of straw should be put to some use this year. Livestock will eat it.

One man last winter fed his livetsock on straw, sprinkling some beet molasses on it. Straw may be used in the feed ration for horses, sheep and cattle. A small amount of beet top silage or corn silage with a little grain should be used with the straw.

Liberal bedding with straw, if it is plentiful, also increases the amount of manure to be applied to the soil. Less of the fertiilty elements in liquid manure are lost and bedding with more costly material is made unnecessary. The stock are made more comfortable and hence more productive. The fertility value at normal prices of the fertilizer elements, amount to about $3 a ton for wheat straw and $4 a ton for oat straw.

Baled straw in many places finds a good market.

Many farmers are spreading the straw back on the land and plowing it under to help fertilize the soil.

Make good use of your straw, do not let any go to waste.

COUNTY AGENT WORK

The County Agent work in Utah is growing. A number of new agents have been appointed. These men represent the Agricultural College and the Federal Department of Agriculture, and in nearly every county, the farm bureaus. The Federal Department deals directly with the Agricultural College.

The keystone of the whole structure is the county agent, whose position, is essentially one of leadership. He must have mature judgment, symathy with farm problems, enthusiasm for farm life, knowledge of the farmer mind, clearness of thought and expression, tact, resourcefulness, farm experience, industry, good health, practical and scientific knowledge of agriculture. These requirements are high because it takes a highclass man to swing the job.

Women are also being appointed as home demonstrators and have simular duties, working with the housewives of their districts.

Much good can be accomplished, if there is a co-operative spirit among all concerned.

If you want help call on the county agent and he will do it, or get some expert that can solve your farm problems.

DRAINAGE DISTRICTS

One of the most important things connected with a drainage district is the selecting of capable men to manage and direct its work. Poor management may prevent the success of a good project. The men selected should have sound judgment and a capacity for the mangament of such work. So many duties are required of them, selling of bonds, securing rights of way, adjusting assessment to see that work is property done and many others. When many property owners are concerned, a very careful accurate record should be kept. It should be simple, but very complete. These few suggestions will help to emphasize the importance of selecting capable men to run the affairs of a drainage district.

PUSH

There is an element of farm life that spells success when put into action, and that is pushing things. Push means giving a lift to a neighbor in trouble; push means a lift for yourself out of the slough of despondency and shiftlessness; out of trouble, real and fancied.

Push never hurts anybody if made along the right lines. The harder the push the better, if it is given in the right direction. Always push uphill—it is easy enough to push downhill. Use your head in the game of pushing; the sinews and muscles as well. Both of these members of your make-up were made to work together. They were meant for service. In the game of push do not be afraid of what your neighbors and companions may say; do not be afraid of your conscience; for it will never reproach you for a good deed, but push with all your heart and might and soul. Whenever you find anyone faltering by the wayside that will be better for a good, long, strong, determined push, give it to them; lend encouragement.

Push! This is the magic word for the grand, clear morning of life; it is the word for the strong will and the brave heart; it is the word for a world that is full of work as this old world of ours.

LIVESTOCK AND THE FARM

If we want to increase the production of crops we must look to the fertility of our soil.

Each year valuable fertilizing material is taken from the land. Farming can not be done as a get-rich-quick scheme. If we take from the soil, in the way of crops, a certain amount of strength, it must be replaced or the land will "run-out" and poor crops fallow.

In some states enormous sums are spent to fertilize their farms. If grain is continually planted the crop will be less each year.

Livestock and barn yard manure will help solve this problem. Herein a fundamental principal in farming and one of the strongest arguments in favor of livestock husbandry. The feeding of farm animals not only means that 85 or 90 per cent of the fertilizing value of crops can be returned to the land in the form of manure, but that such forage crops as alfalfa, can be grown and used to a profitable advantage. Livestock provides a home market for the crops grown. Distributes labor throughout the year.

According to government reports the best "labor income," profits on the farm, is found where livestock is a part of the arming operations. It will be found that the best class of farmers are those engaged in livestock raising.

If this is true and livestock helps keep up the fertility of the soil why not have more livestock on our farms.

CLEANING YOUR CAR AT HOME

By Eva M. Furbush.

Do not pay from seventy-five cents to one dollar and twenty-five cents for having your car cleaned at a garage; do it yourself, and save the money for gasoline, thereby, also, giving the car a more thorough goingover than it would otherwise get, and giving it the necessary care before the mud has had time to "set" on the high finish. Who mentioned "fresh tar"? These two words alone are enough to make the owner who takes pride in his car want to clean it himself, for every minute that tar remains on a machine spells ruin to the glossy finish.

The first step in cleaning a machine is to gently soften up the dry, caked mud on the running gear with a sponge and lukewarm water. Do not rub the mud off, just soak it off slowly. A hose may be used, if preferred, but I do not like the cold water from the tap, nor the usual force. Leave the running gear awhile to let the mud soften up.

Brush the cloth top carefully, but never wash it. If you are unfortunate enough to get grease spots on it, clean them off with white soap and water. Always brush the top, inside and out, and fold carefully before putting it in the casing,—never when it is wet or dirty. Be sure the side curtains receive the same careful dusting and folding before being fastened into the cases for them. Do not try to jam anything into place; see why it does not go readily, and save many a bit of damage to nice fittings. Wipe over the casing for the top with a damp cloth, using no polish, chemical, or soap which may tend to destroy its rainproof qualities.

Next brush the slip covers thoroughly, and sweep out the two floors of the car, or if necessary, wipe over the leather where there are no slip covers. Spots on slip covers should be treated as one would those on one's best gown. Sometimes ether will remove them all right, or white soap and water, or a bit of French chalk; but in the majority of cases the color is quite apt to come out a little, so be sparing of your treatment whatever it may be. Wipe out the car pockets once in awhile; they are very much like a housekeeper's closets, and need a general housecleaning once or twice a year. Grease spots on the carpeted floor can be removed with gasoline, and turpentine will brighten up the color like a house rug. Wash the forward floor with a wet cloth, simply dusting the dash board and polishing the nickel fittings with silver polish. Clean the windshield with a damp chamois, then polish with a dry one until it shines.

With the inside of the car done, close all doors tightly, and softly sponge off the body part with a different sponge from the one used on the running gear. Rinse very often to shake out grit, and change water frequently, for you are handling a finish as delicate as that on the highest-priced piano. Wipe off superfluous water gently with soft clean cheesecloth.

Again start in on the running gear, and wash off all mud, rinsing with the hose if preferred, after each washing. A soft, narrow, long-bristled brush takes the mud from many places where the hand fails to work properly, also a long-handled window brush will reach the mud far under the car quite easily. If there is "fresh tar," gasoline will remove it, but it is just as essential to wash off the gasoline quickly, for it deadens the luster immediately. Never let tar stay on an hour longer than you can help, for one night will harden it like old paint, and you cann.t budge it! While touring we have had our car caked with mud and tar. But all that I attended to immediately left no blemish; but other spots which were neglected were dulled beyond restoration.

When the entire car is clean, it is time to begin the polishing process. I have used prepared wax, a local piano polish and other things, but at present am using cedar oil, which is excellent, and gives a polish to our car just as fine as if it had come direct from the factory.

My method of applying it is to moisten a chamois first with water, then a few drops of cedar oil, and wiping it off at once with a soft piece of cheesecloth. Rub until brilliant, using another dry cheesecloth if necessary. Do not put on much polish at one time, but repeat the entire operation until you have a fine luster, because it is not the quantity of polish you use, but the way you apply it, that gives results. I do not let this cedar oil polish dry on for any length of time, preferring to remove any kind of polish as soon as possible. Use separate set of polishing cloths for the running gear. This is one secret of a beautiful car. After five years of experience cleaning my own car, I have received many compliments on its richly-preserved luster.

It usually takes about four hours to clean a large car, but there is as much satisfaction in doing it yourself as there is in driving the car,—or should be, because like most of our valued possessions in life, an automobile will return to us doublefold the care and attention we bestow upon it. And then again, a garage force is too pressed for time to regard your car any more highly than it does forty-leven other styles and makes. You will get the most efficient and pleasing results in the long run, if you decide to give your own car all the professional cleaning it may happen to need,—right in your own back yard.

MAKE THE FORAGE CROPS GO FURTHER

(Continued from page 3)

the sole roughage; silage or roots should be added, however, whenever possible to get the best results. Alfalfa straw is very similar to the clover straws and should be fed similarly. Bean straw is used very generally and considered good feed, but it is less palatable.

Suggestive Straw Combination Rations for Sheep and Cattle for Winter Maintenance.

Ration No. 1: Oat straw 2, alfalfa hay 1, corn silage 5. Oat straw may be replaced by barley or wheat straw.

Ration No. 2: Clover 1, corn silage 2. Clover straw includes all the clovers and the alfalfa.

Ration No. 3: Pea straw 1, corn silage 1.

Ration No. 4: Bean straw 1, corn silage 1.

Ration No. 5: Winter maintenance of horses: Oat straw 2, alfalfa hay 1. The oat straw may be replaced by any of the straws except the rye which should not be fed.

Rations for growing sheep and cattle: Oat straw 4, alfalfa hay 4, corn silage 10, oats and bran equal parts.

WHAT WE'LL GET FROM THE WAR

Every traitor and every near traitor in the United States is inquiring "What are we going to get out of this war?"

Well, among other things, we are going to get a better grade of patriotism than we have been having.

We are going to put an end to building up foreign colonies in the United States as breeding places of treason.

We are going to quit making the foreigner believe he is the only creature on earth worth while.

We are going to love every foreigner who really becomes an American, and all others we are going to ship back home.

We are going to stop hiring men in banks and public offices simply because they speak foreign languages.

In this way, we expect to encourage the speaking of the English language. We are going to have consultations with the I. W. W.'s to ascertain whether or not they have a real grievance or any just cause for their treasonable mouthings and threats. If they have any just cause, we are going to remove it; then we are going to shut their mouths for good and all.

We are not going to let men come into the United States without some kind of a bond, guaranteeing that they are not going to engage in burning property or in carrying on secret work on behalf of the country they came from.

Out of this war, we are going to get a new United States. We are going to hate nobody, but we are going to be prepared to fight whenever necessary.

We are going to have the freest country in the world, but we are not going to allow any traitorous highbrows to set their own standards of freedom by which to convert freedom into treason.

There are a good many other things "we are going to get out of this war." When the soldier boys come home, we are going to have two millions of patriots who, having fought for the flag, will make good citizens and thorough patriots.

The people of the United States are going to get more out of this war than will be returned to any other country in the world.—Des Moines Capital.

Buy your next year's Implements Now!

In the last few months steel has doubled in cost. As a result a new scale of prices for all farm implements will soon go into effect. The new prices will be from 25% to 40% higher than present prices.

Our stock of Emerson plows and harrows and Hoosier drills is complete. We are still selling them at prices based on last year's cost of steel. Today $100 will go as far as $130 or $140 will go in two or three months.

Buy now the implements you are going to need next spring, and save money.

Buy here and get the benefit of our long experience as implement dealers and our unqualified guarantee.

Miller-Cahoon Co.

Murray Idaho Falls

PAINT AND PRESERVATION.

The value of paint in beautifying and preserving woodwork cannot be overestimated. It is to a large extent the visible index of a farmer's prosperity progressiveness and intelligence. Rightly or wrongly, the farmer is often judged by the appearance of his buildings and farm equipment Unpainted, ramshackle surroundings tell their own story. But the modern farm that deserves the name of up-to-date exposes very little lumber in an unpainted condition. The residence, barns, sheds, granaries and even the poultry houses, are painted. Decay is powerless to work much harm to the buildings belonging to such a farm.

Few expenditures that the farmer can make pay better than a judicious investment in paint, while the process of pointing itself is not complicated. If one takes note of the character of the woodwork the maximum in benefit may be obtained. The kind of wood should be carefully studied and the painting regulated accordingly. It should be determined whether the timber is hard-grain or very soft open-grain; soft and spongy, compact or solid, and also whether it is kiln or air-dried timber. If it is is kiln-dried, and the drying process has been carried on too rapidly, the wood may have become case hardened, leaving it brittle and lifeness. The timber having thus lost part of its vitality, the paint must be mixed to a consistency which will penetrate to a depth that will ensure satisfactory results. If the paint is of a heavy consistency and lies on the surface, the fibers of the wood will break away through contratcion and expansion, bringing the paint with it. This trouble is always laid to the paint, while the real cause is that the primary coat was not properly reduced to penetrate a sufficient depth to insure proper binding. Wood that has been air-seasoned has had little or no opportunity to lose any of its strength, and it will hold pain well.

A little comon sense reasoning will ensure good results with this farmer's friend. There was a time when wood was cheap and paint dear, and it was a rare sight to see a painted building in a rural district. But let us not forget that times have changed and wood is dear with paint cheap. We hope that advantage will be taken of this fact by an increasing number of farmers during this year.—I. B. Henderson.

Democracy requires for success universal knowledge, intelligence, and virtue of high degree, and must protect itself from weakness and corruption from within no less than from forceful invasion from without. Therefore, it is of the utmost importance that during the continuance of the war and through the years immediately following there shall be no lowering in the efficiency of our systems of education. Schools and other agencies of education must be maintained at whatever necessary cost and against all hurtful interference with their regular work except as may be necessary for the national defenese.—P. P. Cloxton.

HOME

THE USE OF CEREALS IN THE DIET OF THE ONE-YEAR-OLD

Mrs. Anna Steese Richardson.

"The correct preparation of cereals is essential to the baby's digestion. First, these should be given in variety. Many a child refuses part of his morning meal and develops a dislike for breakfast cereal because for years he has been given nothing but oatmeal.

In Summer, the most desirable cereals are rice, gluten, barley, rye, wheat, and white hominy. Buy in small quantities and keep carefully covered. In Winter add oatmeal, farina, and corn-meal, which is especially good for constipation. Do not depend entirely upon breakfast cereals served to grown-ups. Try some of the cereals and flours prepared especially for infant and delicate digestion, such as oat-flour, gluten flour which has been purified and cooked, crushed barley, which can be made into a plain porridge or mixed with gluten flour, half and half.

A safe rule for making porridge or gruel is to moisten finely ground flours with cold water, add boiling water and turn into a double boiler to cook for two hours. Coarser cereals, liked rolled oats, crushed wheat, or rice are placed in the upper vessel of a double boiler, the boiling water is poured over them and they are steamed in the double boiler for three hours.

Here are several recipes highly recommended by specialists in infant-feeding.

Barley Gruel.

Wash, dry, and grind barley in coffee-grinder. Place two tablespoonfuls of the barley flour, after grinding, into the upper vessel of a double boiler with one-fourth teaspoonful of salt and same of granulated sugar. Pour over this one cup of boiling water. Cook in double boiler for three hours. Strain through coarse sieve, add one cup of hot, whole milk bring to a boiling point, and serve.

Browned Flour Gruel.

Excellent when child shows tendency to "Summer complain." Frist, brown white flour which has been sifted. Use a clean cast-iron pan, into which turn one cup of the flour. Place on top of stove or in oven and when it is hot, stir constantly with a dry spoon, until it turns a rich chestnut-brown, but never let it burn or turn black. Keep this browned flour in a tightly covered jar in a cool place, and use as needed.

To make the gruel, rub one tablespoonful of the flour to a smooth paste with a little cold milk. Heat a pint of milk or of milk and cream mixed—two-thirds milk and one-third cream. Stir into this the browned flour which has been moistened in cold milk. Boil two or three minutes in an agate pan. Add a very little salt, also sugar if your doctor approves. The average specialist advises serving cereals unsweetened.

Both corn-meal and bran mush or porridge are excellent for the constipated baby. Sift the meal into boiling water, stirring constantly, then turn into a double boiler and cook for three hours.

During the first year, a child may tire of ordinary warm gruel or porridge, serving with milk. In this case, the mother can try cereals molded or as jelly.

A tasty dish for a child whose appetite [illegible] Bring one pint of water to a boil in the upper part of the double boiler, set directly over the fire. Add one-half teaspoonful of salt. When the water boils, stir in a small teacupful of rolled oats. Let this cook hard briskly [illegible] minutes. Then set the upper vessel into the lower part of the double boiler and steam for three hours. Strain the porridge through fine sound-proof to remove husks, and add one cupful of scalded milk and very little sugar. Cook four or five minutes, then turn into molds wet with cold water, and set in cold place to mold. Serve with top milk.

The same rule for variety holds good with bread. The ordinary baker's bread made of white flour palls on the child whose diet is limited. Throughout the first year, any bread should be dried or browned to a golden tint in the oven and served without butter. Zwieback can be served in the place of ordinary toast, for variety. It now comes in packages like crackers. Graham bread, bran bread, and corn-meal muffins can be toasted and served hot or cold. Graham and oatmeal crackers crisped and toasted in the oven may sometimes be substituted for bread. No fresh or warm bread, biscuits, or hot cakes of any sort should be given to a child of this age."

LOVE OF THE HOME

Henry W. Grady

The man who kindles the fire on the hearthstone of an honest and righteous home burns the best income to liberty. He does not love mankind less who loves his neighbor most. The germ of the best patriotism is in the love a man has for the home he inhabits, for the soil he toils, for the trees that give him shade, and the hills that stand in his pathway.

The love of home, deep-rooted and abiding; that blurs the eyes of the dying soldier with the vision of the old homestead amid green fields and clustering trees; that follows the busy man through the clamoring world, persistent to put cares aside, and at last draws his tired feet from the highway and leads him through the shady lanes and well-remembered paths, until, amid the scenes of his boyhood, he gathers up the broken threads of his life and owns the soil his conqueror—this—this lodged in the heart of the citizen is saving principle of our government.

CANADIAN WAR-CAKE

No recipe has been more popular than the one for Canadian War-cake. Many people like this plain cake better than the cakes that call for butter, eggs and milk.

2 cups of brown sugar.
2 cups of hot water.
4 tablespoons of lard.
1 teaspoon of salt.
1 teaspoon of ground cinnamon.
1 teaspoon of ground cloves.
1 cup of raisins.

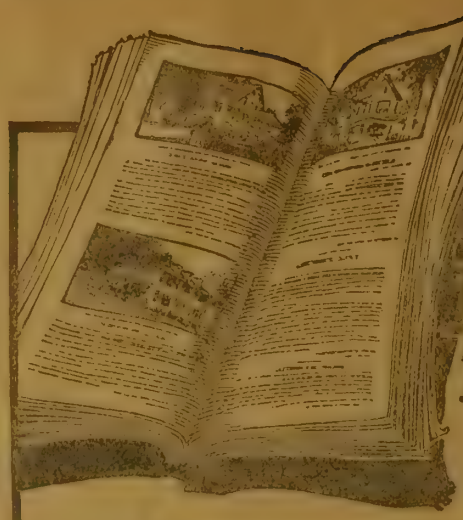
Boil all these ingredients for five minutes after they begin bubbling. When cold add 3 cups of flour, and 2 teaspons of soda dissolved in 1 teaspoon of hot water. Bake in two loaves in slow oven an hour and a quarter.

PIE WITHOUT CRUST

Lighten your labor by omitting the crust from the pie. Every woman running a farm kitchen has more work than she can do at this season of the year. Serve the fruit, fresh or stewed, and save the time spent on pastry, also the flour and shortening necessary to make it. If the American pie is sacrificed to the American spirit, American health will be improved.

It is a very simple matter to omit pastry in preparing for custard pies and convert the filling into a pudding. Custard, potato, or pumpkin filling will make just as good a dessert if prepared in the usual way, baked in a baking dish without crust, and served with just a suggestion of tart preserves or jelly.

Sometimes when you feel that you [illegible] pie, try this plan. Cook your fruit for filling and season [illegible] place in pie plate without bottom crust. Cover the top with thin [illegible] of bread, sprinkle with brown sugar, and set in a hot stove to toast and candy over. Serve hot. This is



Over a Thousand People Wrote This Book

It contains a rare story of winter discomfort succeeded by real comfort; of big fuel expenditures cut down from 35% to 50%; of unusual conveniences made possible in old or new houses, churches, halls and business blocks.

When you consider the question of heating your home this fall, you should have it before you. It's the simple stories of people who have solved that question to their complete satisfaction by installing the

PIPELESS CALORIC FURNACE TRADE MARK

The Original Patented Pipeless Furnace

They put in this furnace because of these remarkable guaranteed advantages:

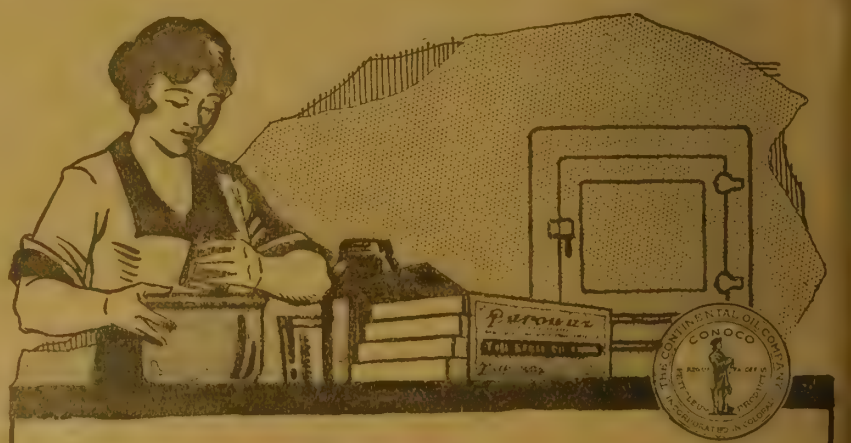
1. Only one register is needed; no pipes in walls or basement.
2. It will heat your house comfortably and evenly.
3. The cellar will be cool enough to store fruits and vegetables all winter.
4. It will save you 35% of your fuel bill--some say more.
5. The firepot is guaranteed for five years.
6. It will burn any fuel.
7. Its heating principle is both scientific and healthful.

MEETS ALL CONDITIONS

The Caloric Pipeless Furnace meets all these conditions fairly and squarely. It is guaranteed by the oldest and largest manufacturer of warm air heating systems in the United States.

We want you to see this book, together with our "Progress" booklet, which describes the principle of Caloric heating. Ask your dealer, or write to us direct, and we will send you a copy of both by return mail.

The Monitor Stove & Range Co.
3335 Gest St. Cincinnati, Ohio



Save The Fruit You Preserve

by double sealing the jars. After putting on the cap, just dip the whole top in Parowax. Then air can't get in to start fermentation.

Jellies cannot mould if Parowax is poured into the tops of the glasses.

Parowax is tasteless and odorless; guaranteed under the Pure Food and Drugs Act.

Sold by grocers and druggists everywhere in handy one pound packages.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Cheyenne Albuquerque Boise
Pueblo Salt Lake City Butte

Parowax

really delightful dessert and liked by grown-ups as well as children.

Omitting pie crust is one of the ways the Food Administration suggests for getting at that 25 per cent reduction in the consumption of wheat flour.

USING THE LEFTOVERS

Leftover Navy Beans

Cut up an onion and drop into some hot grease. When brown add a small dish of cold navy beans, fry a while, then add a can of tomatoes (or chopped fresh tomatoes), season to taste, cook steadily for 5 minutes, then serve.

Creamed Veal or Chicken

Take as much finely flaked cold veal or chicken as is desired. Mix it well with a very rich cream sauce. Put it into baked patty pan shells and set it into the oven till it heats through.

Sauce for above: Into a saucepan put 1 tablespoonful of flour mixed with a cupful of sweet cream; stir in 1 tablespoonful of butter and a little chopped parsley. Set the pan in a vessel of boiling water and, stirring well, cook. When taken from the fire add another tablespoonful of butter and pour over the meat.

Ham Loaf

Unjoint a ham-bone where the meat has been cut away in frying, and soak over night in water with 1 tablespoon of salt and 1 teaspoon soda. The fresh salt will draw the briny salt from the meat, and the soda helps clean and makes tender for cooking. Trim and rinse well. Boil until perfectly tender, remove meat from bone and grind in meat-chopper. Season well with any preferred meat seasoning; red pepper, sage, mustard and vinegar may be used. Grind the second time and mold in cake. Slice for use.

Stuffed Peppers.

Choose large sweet peppers, take out the seed and inner part; soak some cold bread in a little water until soft and chop fine your cold leftover meat. Make a stuffing of the meat and bread, and add a little cold rice and 2 or 3 large tomatoes, chopped fine. Season with salt and pepper. Fill the peppers with stuffing and bake a half an hour. Add butter before putting in oven, and enough water for a gravy.

Meat Croquettes

Two cups cold mashed white potatoes, 1 cup chopped meat, 1 well-beaten egg, 1 teaspoonful flour, a dash of sage, salt and pepper to taste. Shape, roll in cracker crumbs and brown nicely in hot fat.

Baked Hash

Try this way of utilizing the leftover meat from a roast or stew: Line a buttered baking dish with mashed potatoes. Season the chopped cold meat and salt and pepper, add butter, a little chopped onion and also the leftover gravy. Pour in the baking dish and cover over with more of the mashed potatoes. Bake until lightly browned.

Salad From Leftover Vegetables.

Many cold vegetables can be used for salad. If not enough of one kind, several may be mixed together; a little chopped onion adds greatly to the flavor. Serve on lettuce leaves with either French or mayonnaise dressing. Any that have had a cream or white sauce can be put under the cold water faucet, thoroughly rinsed and put in icebox to chill first before using. Peas, string beans, beets, cauliflower, asparagus can all be used separately or together.

Meat and Vegetable Salad.

Wash and dry a head of lettuce, rejecting the outer leaves, put in a salad bowl and dress with French dressing, add a cup and a half of cold boiled potatoes cut in dice, 1 large sweet apple, chopped, 2 stalks of celery, 2 tomatoes, an onion, a cup of cold meat cut in small pieces, and any left-over vegetable; over the whole pour mayonnaise and mix thoroughly.

Mince Meat.

Bits of meat from a soup-bone, cold roast and steak, etc., may be ground together for mince meat. 2 cups chopped meat, 1 cup suet, 2 cups apples (dried or fresh), 1 cup each raisins and currants, 1½ cups sugar, 1 cup molasses, 1 cup vinegar; salt to taste. Mix all the ingredients and cook slowly till well done. Seal in small jars and put away to use as needed.

Scraps of Pie Crust.

To make good use of the scraps from trimming the last pie, roll it out into a flat strip about 4 inches long and ¼ inch thick and as long as dough will allow. Spread this generously with butter, sugar and a little cinnamon or nutmeg. Begin at one end and roll; pinch it down at each end and bake. This makes a very satisfactory reply to the hungry schoolboy who comes bounding in with "Got anything to eat?"

Sour Milk Pan Cakes.

For a family of four soak 4 or 5 cold biscuits over night with a cup of water; in the morning add a cup of sour milk, 1 egg, a pinch of soda and salt, 1 teaspoonful of baking powder and 1 cup of flour, or just enough to make a good batter. Stale light bread or leftover cereal may be used instead of biscuits.

Chocolate Bread Pudding.

Use 2 cupfuls bread crumbs, 4 cupfuls scalded milk, 2-3 cupful sugar, 2 eggs, 2 squares of chocolate, ¼ teaspoonful of salt, 1 teaspoonful of vanilla. Soak the crumbs in the milk for half an hour. Mix the chocolate in a saucepan placed over hot water. Add to the chocolate half of the sugar and enough milk taken from the bread and milk to make of a consistency to pour. Add to the bread and milk, the chocolate, the remaining sugar, salt, vanilla and the eggs, slightly beaten. Turn into a buttered pudding dish. Stand the dish in a pan containing hot water and cook for 1 hour in a moderate oven, or until firm. Serve with any preferred sauce.

Cereal Cups

Pour the oatmeal, rice, or any breakfast cereal left over, into cups to mold. For the dessert that evening hollow out the centers of the cereal molds and fill with preserves, jelly, stewed fruit, fresh fruit, raisins, figs or dates and nuts or whipped cream, and pour a sweet sauce or plain cream over all.

Soup.

The bones of a roast turkey or chicken can be made into an excellent soup. Boil them in plenty of water till the meat falls off. Then pick out the bones, season the liquor with salt and pepper and chopped celery. Thicken with a little flour and water and let simmer till it is well done.

Potato Balls.

Season cold mashed potatoes with pepper, salt and nutmeg. Beat until creamy with a teaspoonful of melted butter or cream. To every cupful of potatoes, bind together with 2 well-beaten eggs, add a little minced parsley, if liked, roll into balls, dip in beaten egg, then in bread crumbs, and fry in hot lard; pile in a pyramid on a flat dish and serve.

THE SLACKER ACRE

H. W. Davis.

I am the idle acre.
You will find me on every farm.
For a long time no one has paid any attention to me.
And I am getting tired of being overlooked.
Besides, I hear that I am needed—BADLY.
They say that many folks across the sea and in the cities will go hungry unless each acre does his bit.
And here I am, loafing.
The busy acres are sneering at me.
I can hear them whisper, "Slacker."
They say I am not willing to do my share.
But I am willing.
If somebody will take me and treat me right, I will furnish
Thirty bushel of wheat, or
Seventy-five bushels of corn, or
Sixteen tons of tomatoes, or
LOTS of other good things.
I'm not the slacker.
It's the man who neglects me—
HE IS THE SLACKER.

Fly a flag on the farm and teach children what it stands for.

The Unexpected Guest

is always welcome in this home because this housewife is prepared for emergencies. She's mighty proud of her delicious bottled fruit and of her jellies, jams and preserves.

She always uses

EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE

because of its unsurpassed quality and sweetness. Comes in clean white cotton bags weighing 10, 25, 50 and 100 pounds.

"Buy it by the Bag."

Made by

Utah-Idaho Sugar Company

maximum Nutrition minimum cost

That's the cry of the world today. The food that qualifies is the food for every home.

Drink a cup of Ghirardelli's Ground Chocolate every day in place of more expensive foods. Ghirardelli's Ground Chocolate is made of pure cocoa and sugar, the two great nutrimental foods, and blended in the right proportions to insure its distinctive taste-appeal, its easy assimilation and unusual nourishment. A tablespoonful, 1c. worth, with milk added, makes a cup—a true conservation food beverage.

Ghirardelli's
Ground Chocolate

Comes in ½-lb., 1-lb. and 3-lb. cans.

D. GHIRARDELLI COMPANY

Since 1852 San Francisco

FARMERS
ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking **Account with this Bank.** Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

Utah Savings & Trust Co.

255 So. Main, Salt Lake

W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
F. M. Michelsen, Cashier.

Here and There On The Farm

ESTABLISHMENT OF POTATO GRADES—RESULT OF POTATO CONFERENCE

Growers, shippers and distributors of potatoes met in Washington recently to discuss this year's potato crop and to determine the course of action to be pursued in the growing and distribution of next year's crop. In the opinion of this group of men, the regular channels of trade should be interrupted as little as possible, unless some unusual contingency should arise. In such event, they believe that the U. S. Food Administration is undoubtedly in position to take such action as will best serve the interests of all, and that such action would receive their hearty support and co-operation.

It was requested that due consideration be given to the increased cost of production by reason of higher labor and seed cost. Recommendations were also made that effort be directed to move the present potato crop at such prices as will encourage the grower, not only to continue his efforts for the production of future large crops but crops of such improved quality that an increased consumption may be expected.

One of the features of the meeting was the recommendation that definite grades of potatoes be adopted. This was deemed advisable because of the tremendous economic waste due to improper grading; and also because the shipping of ungraded potatoes means cost of transportation, waste of railway equipment and labor in handling potatoes which, while worthless at destination, would have had some value as stock feed on the grower's farm.

Following this meeting the Department of Agriculture and the Food Administration jointly recommended and urged the adoption of the following grades, which in their opinion will meet the needs of the Federal Reserve Board—which has authorized the making of loans for warehouse receipts on properly graded potatoes—as well as the needs of growers, dealers and consumers:

U. S. Grade No. 1.

This grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth cuts, scab, blight, dry rot, and damage caused by disease, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths (1⅞) inches, and of potatoes of the long varieties one and three fourts (1¾) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, three per centum by weight of any such lot may be below the remaining requirements of this grade.

U. S. Grade No. 2.

This grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects, or mechanical means. The minimum diameter shall be one and one-half (1½) inches. In order to allow for variations incident to commercial grading and handling, five per centum by weight of any lot may be under the prescribed size, and, in addition, five per centum by weight of any such lot may be below the remaining requirements of this grade.

MANURE SHOULD BE PROTECTED FROM LEACHING

F. L. Duley

Manure is one of the perishable farm products, and under ordinary conditions it is impossible to return all of this material to the land. In fact the average farmer returns only about half the fertility contained in manure, and many men fall far short of this. The decrease in the value of manure in the farmyard is due to several causes, but the leaching away of the soluble material during rains is one of the most common sources of loss. Experiments carried on at various experiment stations show that where manure is exposed to the weather for a period of five or six months no less than 50 per cent of the fertility is lost. The average farm animal uses only a small portion of the mineral elements consumed in the feed and on the average about 80 per cent of the nitrogen, 70 per cent of the phosphorus and 75 per cent of the potassium is avoided in the manure. These elements, especially the potassium and nitrogen are in very soluble form and are readily leached away by rain water. The phosphorus is slightly more stable and a smaller per cent of it is lost, however its loss is not so important because it is present in much smaller quantities and its selling price per pound is far below either of the other two elements.

The greatest loss from leaching will occur where animals are fed in open lot. Here a very large per cent of the manure is directly exposed to the rainfall and the loss may be even greater if the lots are located on hillsides where much of the material may be carried away by erosion. This greatly impoverishes the manure and lessens its ability to produce crops. A three years' test at the New Jersey Station showed that fresh manure gave 40 per cent greater increase in the yield of crops than did leached manure.

Fully one-half of the plant food value of manure is contained in the liquid portion. Since this is entirely soluble in water it is the most readily leached away. Much greater care is therefore necessary in conserving this material than is required with the solid portion. An ample supply of bedding of some sort should always be used to absorb the liquid before it has time to drain away or ferment. Where large quantities are produced a cistern for its storage may be advisable.

The leaching of manure may be largely prevented by hauling it direct to the field, or by proper methods of storage. When possible it is better to haul the manure direct to the land as soon as it is produced. Then the leachings are largely carried into the soil by the rain water rather than lost in the drainage from the feed lot. The manure from hogs and sheep should if possible be allowed to drop in the field for these manures are the most difficult to haul back to the land and the loss through leaching may be even greater than with the manure from other animals.

If it is impractical to haul the manure direct to the field as soon as it is produced, it should be stored in such way as to reduce the loss from leaching as much as possible. This is best accomplished by keeping the manure under cover, that is, by leaving it in stalls or sheds where it is well trampled down, or by piling it in a shed built for the purpose. When manure is piled in a shed it should be packed down well and kept moist to prevent "fire-fanging."

If no shed is available the best method of storing it in the open is by piling it in a compact pile with nearly perpendicular sides. The pile should be left flat on top so that it will absorb the rain water rather than allow it to run off. This not only lessens the amount of leaching, but helps keep the manure moist and thus reduces the fermentation. Where it is necessary to store large quantities of manure in the open it will often be found profitable to construct a concrete manure pit or floor having raised sides where all the leachings from the manure pile can be saved.

SAVAGERY OF THE WEED

'A weed," says the Rural New Yorker, "is a wild plant and trained to struggle and fight for its existence." It then states:

"A cultivated plant has had much of the fight taken out of it through long years of selecting and training it for useful ends. Nothing can remain a wild fighter and at the same time excel in useful qualities. One quality must give way as the other advances. The original dog and wolf are probably much alike in character. The modern house-dog, dwarfed in size and trained in gentle habits, must be protected from the wolf, or the latter would eat him up. In like manner, corn or wheat or potatoes or root crops can never hold their own against quack grass, ragweed, or redroot. Left to themselves in such a struggle, the useful or "cultivated' plants are always swamped. The cultivated grasses, in a sour, neglected lawn or pasture give way to the weeds and poor grass, but put on lime and nitrogen and phosphorus, and the better grasses come back and occupy the land. This same thing runs all through life, for as plants or animals are improved and made more useful through selection and care, they must have higher culture, better feeding, and more careful protection. They are no longer fighters, but things to be defended and fought for as the price of their improvement."

SMUT IN GRAIN

Utah Farmer:

Gentlemen:—What is the cause of smut in grain? Can the mills make good flour from wheat with smut in it? Is smutty grain injurious to live stock, such as hogs, etc.

Please answer through the columns of your paper and oblige.

Yours truly,
S. J. Foster.

Answered by George R. Hill, Jr., Plant Pathologist.

Smut in grain is caused by a fungus which grows on the inside of the stalks and leaves and then grows up into the head to produce its spores. These spores are produced on the inside of the kernel as black sooty masses. If there is not too much smut in the grain it may be used to make an inferior grade of flour, but for the best grades smut-free wheat should be used. More than 1 per cent of smutty kernels will give an offensive odor to the flour. Smutty grain may be fed to hogs—so far as is known—without injurious results.

There is no excuse for having smutty grain in Utah. Smut can be controlled completely if the grain is properly cleaned and treated before planting.

DOES THE FARMER READ?

J. C. Mohler.

There is no doubt that the farmer has largely overcome his old time prejudice against agricultural literature. It is equally true that he is a discriminating reader and by no means accepts as gospel everything that bears the label of farm literature. The power of farm literature depends on the character of that literature. Ably written and edited; dealing with facts, not fiction; with concrete experiences, not glittering generalities, the printed page is a mighty factor for better farming, better homes, greater comforts, and for procuring that broader culture of life which humanity craves.

Among the more progressive farmers the reading habit is rapidly developing. It is no exaggerration to say that demands on the board of agriculture for information about farming and rural improvement have increased 50 per cent in the past five years. Plainly, the reason farmers are taking more interest in farm literature is that they are finding it valuable in their operations.

Boundless Chances For Service

"The amount of good that may come through the dissemination of high-class literature adapted to the needs of the husbandmen is unlimited, and in this field there are boundless opportunities for real, genuine service, worthy of the most cultured minds and of broadest intellects.

Farmers realize that life is too short

Every Drop Counts

Don't trust to luck for the correct lubrication of your Ford car. Know that the oil is reaching every moving part of your motor by keeping your crank case filled with—

SIMPLEX FORD Motor Oil

This efficient Ford lubricant cuts the most of gasoline—it reduces the load of your engine. "More miles to the gallon."

Utah Oil Refining Co.
SALT LAKE CITY

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

Better anticipate your requirments now.

Cotton Seed Cake—Corn Sunripe Stock Food—Hay
BROWN BROKERAGE CO.
Ogden, Utah.

When you answer an advertisement always mention the Utah Farmer.

to learn everything by first hand experience, and they are looking to every available source of information for ideas and suggestions that will help them in their business. Several forces are at work to meet this need. The experiment stations are circulating much valuable literature in the form of bulletins. Helpful publications are issued by national and state agricultural departments, and by commercial printing plants. The agricultural press has greatly widened its sphere of usefulness.

Wants Others' Experiences

The printed page is perhaps the greatest single agency for the diffusion of agricultural knowledge. It is highly important, therefore, that what is thus conveyed be absolutely reliable. Not only that, but it must be written in a plain, understandable way, avoiding technical language and the temptation to "fine writing."

The farmer places great store in the experience of others who have made conspicuous successes. As a general thing he scouts "theory"; he wants literature that tells how it was done, rather than literature telling how it should be done. In other words, he wants accounts of experiences and practices rather than preachments that tell of his shortcoming and faults.

Writers should be careful not to underestimate the intellect of the farmer. They should realize that the men on the farm are the kin of our modern captains of industry, and as a class are of the same mold and have mental powers just as great as the dwellers of the city. It is an offense to the intelligence of the farmer to write 'down' to him. He is an equal and possibly in some ways a superior. To succeed in the field of agricultural literature, be accurate, be sure of your facts, be sincere , be truthful, and do not overdraw.

HORSE MUST WORK WELL IF FARMER GETS PROFIT

W. E. Grimes.

The modern farm depends as much upon the efficiency of of the horse as upon human labor. Horse labor is the heavy item of expense in the production of a crop.

The cost of keeping a horse for a year varies from $75 to $125. About two-thirds of this cost is for feed, the remaining one-third consisting of the interest on the investment, depreciation, cost of shelter, insurance, and taxes.

The cost varies to a certain extent with the conditions under which the horse is kept. The more a horse works the cheaper the cost of one hour's labor. On a well managed farm the horse seldom works more than 50 per cent of the time it could work, and on a poorly organized farm the horse often only works 10 to 20 per cent of the maximum time.

On a well managed farm a horse averages 1,672 hours of labor for the year, as a cost of 7.2 cents an hour. On a poorly managed farm the same size where more horses are carried than are required, each horse averages only 804 hours of labor for the year at a cost of 15 cents an hour.

Reduction of the cost of horse labor may be brought about by the use of more brood mares. This cost may also be reduced by distributing the horse labor as nearly as possible throughout the year.

Economic methods of management of horse labor cannot be so determined as to apply to every special problem, which may arise on farms under various conditions. The farmer must work out details to fit his special case.

Prophecy

Applicant—"Is there an opening here for a live-wire, hustling college man?"

Office Boy—"Naw, but there's goin' to be if I don't git me salary raised by er-morrow night."—Life.

"Eat less candy. The Allies need the sugar," says the Food Administration. "All right," our potriotic farm boys and girls are saying, "Nuts and popcorn are better anyway."

THE UTAH DRY FARM— NEW ERA DEVELOPS

(Continued from page 3)

region having at least twelve inches of rainfall during the year, the foundation of a successful dry farm may be laid.

Up to the present time fall wheat has been by far the most important dry farm crop in Utah. Since the greater part of the precipitation comes during the winter months, crops planted in the fall are able to use this moisture more effectively than those planted in the spring after the soil has in part dried out. Barley, oats and rye have all been raised with fair success. In certain sections corn and potatoes have done well, while in some of the warmer parts of the state the sorghums have found favor. In a number of the more favorable localities alfalfa has produced a very satisfactory. amount of forage in addition to a crop of seed.

The planting of alfalfa in rows for the production of seed is a practice that bids fair to be very successful. Alfalfa seed commands a high price, and where the yield is good the returns per acre of land are very satisfactory. A crop that promises well for the future is beans. This crop gives excellent yields and it is a good crop with which to rotate the small grains.

Lack of Care Deplored.

Probably the greatest cause of failure in dry farming is the lack of care in tilling the land. Farmers practice short-cut methods, thinking that greater care is not necessary, and as a result they fail completely. It is rare that the farmer who practices the approved methods carefully year after year has a failure. The man who expects a full crop when he does only half the proper amount of work is the one who is disappointed. In breaking up new land a period of time should elapse between plowing and seeding in order to allow the soil to accumulate sufficient moisture to carry the crop to maturity. Deep plowing should be practiced to form a proper seed bed to assist the soil in taking up moisture and to promote the liberation of plant food. Since one year's precipitation is not usually sufficient to produce a crop, it is a good practice to have the land fallowed each alternate year and during the fallow season it is necessary to keep weeds and vegetation of every kind from growing and using the stored moisture.

Since dry farming is necessarily done under difficulties, it is very important that great caution be exercised in the selection of a farm and in methods of handling it.

Greatest Attention Necessary.

On the irrigated farm fair crops may often be raised even where slovenly methods are practiced, but on the dry farm the greatest attention must be given to every detail or failure is sure to result. Persons who are unfamiliar with agriculture of arid regions should take the trouble to inform themselves thoroughly on the subject before making heavy investments in dry farming property.

Special methods are necessary to cope with drought, and a knowledge of these methods must be obtained before success can be expected. The most careful study should be made of the precipitation records of an area before attempting to dry farm on it.

Utah has immense areas of fertile soil well adapted to the raising of dry farm crops, and the experience of more than forty years has demonstrated that the rainfall in many parts of the state is adequate, when properly conserved, to meet the needs of ordinary farm crops. The exact area that will be brought under cultivation by this method of farming is not known, but it is probable that it will be many times as large as the area that can be irrigated.

That success will follow the use of proper dry farm methods in Utah is just as certain in the minds of those who have investigated the question as that disaster will follow ignorance and carelessness.

GET OUT OF THE RUT

Did you ever notice how easily it is to make ruts on a soft road? First comes a light team, leaving but slight trace of its progress. But slight as it is the heavily laden wagon that follows it will generally take the same track. It leaves a rut. A few other wagons cause the rut to sink deeper. First thing we know there is a rut there which we cannot get out of, no matter how we try. If we get trying too hard we are liable to break a wheel. It is only by watching and seizing our opportunity that we can get out at all.

And did you ever figure that not all the ruts we encounter and get into are visible on the county roads? Did you ever stop to think of the ruts in the highway of life, the ruts we encounter in our everyday existence? There are ruts in every profession, farming as well as the rest. Sometimes we get into them so deep that we cannot see out. And when that is the case we want to stop and look around. We have to size up the situation. If we pull ahead blindly there can be no change. If we pull off too short we are liable to come to grief.

There are too many farmers in this and other states farming in a rut. They do things because their fathers did them, because their neighbors are doing them. They don't get out and see what the other fellows are doing, they do not look ahead for chances to get out of the rut. The science of farming, and it can be truly called a science these days, is making progress. Old methods have in many cases been replaced by better ones. New ones are being perfected all the time. Now no one with sense is apt to advocate the adoption of every new-fangled contraption or scheme that comes along. That is not the idea. But look them all over and see if you cannot pick up some hunches that will help you. Read your agricultural paper, go to market with your livestock and talk to the other stockmen you meet there, go to the extension meetings and farmers' gatherings. It is your own fault if you do not derive some benefit from them. Visit that old neighbor of yours in the other part of the state. Do anything to get away where you can size things up and see over the rut that envelopes you. Montana has long had the name of being a progressive state—it cannot maintain it unless everyone of us helps. And we benefit too.

Take A Vacation This Winter

Who more than the farmer has earned a vacation? Yet how rarely does he take one! Of what real good to you—or to your wife—is the eternal grind in the torrid heat of summer and the frigid cold of winter?

See and Enjoy

THE GREAT PACIFIC NORTHWEST

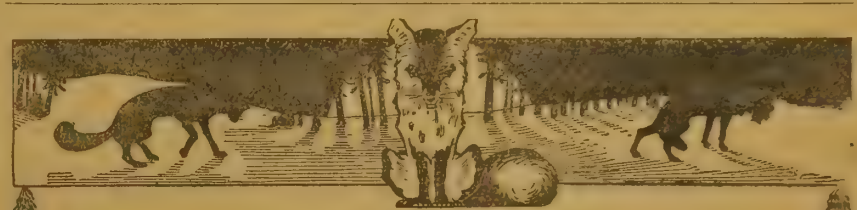
WASHINGTON OREGON BRITISH COLUMBIA

A vacation this winter will be the best investment you ever made. There is no better way in which you can spend your money. It will give you more vigor and vitality for the work that is to come. It will renew your health. It will lengthen your life.

The change in altitude from the high levels of your home to the sea level, from the hard, keen, intense cold to the temperate climate on the Pacific Coast, warmed by the Japan Current, with flowers blooming the winter through and the residents enjoying automobiling and boat travel every month in the year, will be a lively delight.

Write to us for any information.
Pacific Northwest Tourist Assn.
Dept. F. L. C. Smith Building,
Seattle

The Pacific Northwest has the finest all-the-year-'round climate in the World.



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LIVE STOCK

RAISING YOUNG PIGS

Alfred Jones.

Considerable care should be given young pigs. Much will depend upon a good start. Even the little weakly pigs by the right kind of care may become thrifty and develop into large porkers.

The sow should be noticed very closely after she farrows. She will not need food for at least 10 or 12 hours after she farrows. Her first food may be skimmed milk, slop, etc. Then she may be fed more and richer feed. Equal parts of ground oats and shorts, which may be allowed to soak, makes a good ration. A little green food will also be beneficial. Finally the sow will need an abundance of rich nitrogenous feed in ord·r that she may nourish the pigs.

Pigs will son begin tc eat if left with their mother at feeding time. Usually by the time they are three weeks old they will be eating feed. A good plan is to give them access to another pen or if the sow is in the pasture leave a gap for the pigs in another pen. But this is not necessary, as many prefer to feed the pigs with the sow.

A good ration for the pigs at first is skimmed milk, with a little shorts stirred into it. They will soon relish soaked whole corn or slop in which corn meal, ground barley has been stirred.

Exercise is very important for young pigs. If confined in a small pen some may get too fat, others may not get enough food. The best way to raise pigs is to have pasture for them and their dams. However, if the sow is given too wide a range at first she may ramble more than is good for the pigs. But they will soon be strong enough for this and it will benefit them.

The age at which pigs should be weaned is not easily told. Some prefer leaving the pigs with the sows for 10 to 12 weeks. In this case the sow generally weans her own pigs. Farmers want two litters a year, hence they are anxious to teach the pigs how to eat as early as possible so they can wean early. If the pigs have been taught to eat and are fed properly they should be ready to wean in six weeks. But care must be used so they will not be stunted. Pigs weaned this early should have skimmed milk. If this is not possible it will be best to wait about two weeks longer.

Weaning may be done simply by putting the pigs in a pen away from the sow. They should be fed about four times a day for best results. Skimmed milk and shorts mixed is a most excellent feed. They will soon need some grain such as soaked corn, chops, ground barley, ground oats, etc. But they are growing and will need bone and muscle-forming food, hence a rich protein ration will be desirable. Some succulent food will soon be needed and they will thrive best if turned into a pasture as soon as weaned.

To raise cheap pork it will be necessary to give the pigs every possible advantage. They should grow as fast as possible and reach the age of porkers as early as feds and care will permit. To do this the feeder must give close attention and have an abundance of feed ,with pasture.

Pigs can always harvest the crops cheaper than the feeder can for them. To utlize their help in harvesting while they are getting exercise, plant crops and turn the pigs into the fields. This will save labor and reduce cost of pork production.

—o—

OUR LIVESTOCK SHOULD BE INCREASED

The Department of Agriculture and the Food Administration desire to bring to the attention of stock men and farmers the following general position as to the American and the world situation in food animals.

One of the incidents of the European war has been the slaughter of large numbers of animals, and it is estimated that already the herds of Europe have been diminished by 28,000,000 cattle, 54,000,000 sheep and 32,000,000 hogs. An accelerated increase in this diminution of meat animals must take place in Europe from month to month as long as the war lasts.

We have two problems in meat supplies: The first is the task of supplying our own soldiers and citizens and helping feed the soldiers and citizens of our Allies during the war; and to do this we must furnish larger supplies and must find these supplies for the present largely by reduction in our own consumption and waste.

The second problem is th one which we desire to bring particularly to the attention of the American producer, and that is: After the war, Europe, with diminished animals, and therefore diminished annual production of animal food, will require larger imports of meats during the years of recuperation, and will probably require the actual import of breeding animals. Therefore, in a broad way, the outlook to the American producer from now on and after the war will be, (a) a large demand for animal products, (b) a continuing necessity for meat and dairy animals to convert forage and grains not needed for human consumption into meats and dairy products.

The herds and flocks of the country can only be increased over a period of years, and the foundation for such an increase should be laid at once. Such increase is a national interest, and it must be made to the interest of the American producer.

Some sections of our country are stocked to capacity with mother ewes, from which lambs are marketed at from 70 to 80 pounds weight. This is the most economic method of producing mutton, just as "baby beef" is the most economic method of producing beef, and the quality of both these meats is of the best.

What we need is more cows and more ewes producing the 700 pound calf and the 70 pound lamb. We wish to restore the confidence of the farmer in his industry by convincing him that he will get a fair share of a fair price paid by the consumer and extending to him credit on a reasonable basis so he may be able to equip his farm for handling sheep, hogs and cattle successfully. Only by adopting the foregoing methods and principles can production be stimulated and the consumer protected.

It is essential for the future welfare of our nation that the supply of all meat animals be increased. This, not only from the standpoint of directly increasing the food supply of the country, but more livestock on the farm means more fertility in the farm; more fertility means larger grain crops produced at a less cost per bushel; more cheaply produced grain should mean cheaper bread to the consumer as well as more net profit to the farmer. Especially should the energies of the farmer be directed to increasing the sheep stock of the country. Clothing comes next to food as a necessity. Not only does the sheep meet the demand from a food and fertility standpoint, but for its wool for clothing, there is no substitute. Every interest that can mak: itself felt should advocate and encourage the establishing of flocks of sheep in proportion to size of farms in every section of our country. Every farmer should carry to its yearling from every heifer calf of both dairy and beef breeds and every ewe lamb that promises to have an economic future.

Every effort should be made to bring to maturity every heifer calf or ewe lamb whose breeding will give some assurance that it will convert its feed into either profitable meat or profitable dairy products.

State authorities should take immediate action to control the dogs whose depredations have made sheep raising on the farm so difficult a task.

It is equally desirable to increase hog production in this country by every means possible. The increase in demand for pork products is no less than for cattle and sheep products. In this matter the expansion of existing herds is essential, and a redistribution of hogs from centers of less feed supplies to those of greater resources is necessary. Furthermore the raising of pigs by suburban populations and the utilization of hom garbage and perishable not otherwis useful is of double advantage to th nation.

The law that we are now operatin under as to food control is conceive and administered in a desire to main tain remunerative and stimulative re turns to the producer and to enabl these products to reach the consume with only a reasonable profit allowe for services rendered. Therefore, i is the object of the Administration t eliminate unnecessary cost betwee producer and consumer.

—o—

FARMERS SHOULD BREED DRAFT HORSES

By Waynes Dinsmore, Secretary Per cheron Society of America.

The danger of overproduction o horses is remote. It costs more t produce them than any other clas of livestock. For that reason many farmers sit back and proclaim tha it doesn't pay to raise horses; tha there never was a time when th horse market was so dull as now; that the motor truck and tractor have killed the horse business and the horse is a thing of the past. Some people believe all of this, even though the truth of the matter is the opposite. Those who have allowe such thoughts to direct their operations for the past five to ten years will soon see the error of their ways. It takes time to make much head

Roads Good 365 Days

a year mean more to the farmer now than ever

Barberton-Greenwood Road, 1½ mile west of Lodi, Ohio, in Medina County. Built by Elyria Construction Co., Elyria, Ohio.

FARMERS living on concrete paved roads have no fear that bumper crops will fail to bring them prosperity. They can market every day of the year in all kinds of weather. Concrete roads are 365-day-a-year-roads. The difference between mud roads and concrete roads is the difference between crops rotting on the farm and crops on the way to the world's markets when prices and demand are best.

Railroads have more than they can do now.

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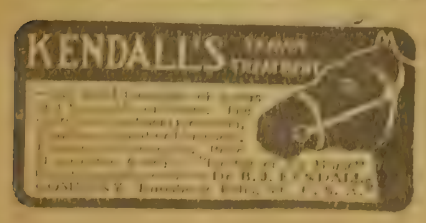
CONCRETE FOR PERMANENCE



why in the horse business. Five years are needed to grow a horse. At best one should not expect more than two colts from three mares as an average per year. Moreover, not more than 15 per cent of our farmers are raising colts. Not long hence the American farmer will wake up only to learn that a great opportunity has passed. The next ten years is bound to see the greatest demand for horseflesh the world has ever known. It can't be met on short notice.

The man who is breeding every mare old enough to be bred to a stallion available and is taking proper care of the offspring is the man who is sure to be rewarded. There are plenty of men who have bought and paid for farms within the past ten years by their purebred draft mares. In the same community there are farmers who are no better off financially than they were a decade ago because they failed to foresee the profits from using the right kind of horses in their farm work. The men who have made money and who are going to reap the fruits of their efforts in the future are those who early saw the ultimate need for heavy draft horses for farm work; who bred that kind and who will continue to do so without a halt.

Why is there a general tendency among farmers to buy their horses rather than to raise them? Farmers say, "I don't want to be bothered with a colt. When I get ready to plant corn or cut wheat I want horses ready to work; I don't want to have to pay $250.00 for a little scrub colt and then have all the bother to raise it, besides." Men with such ideas hate to buy a horse or two nearly every spring at a cost of $150.00 to $200 a head. Instead of having a horse or two to buy, better have some to sell. There is no unusual training necessary. Any farmer can raise good horses if he will only use common sense. He can even succeed with purebred drafters if he will select good breeding stock, take reasonably good care of it and develop the offspring rightly. There in lies the secret of success.

Million Head Exported.

Careful consideration of the situation should tend to convince us that there is no danger of an over-production of heavy-draft horses for our farms and city uses. Almost a million horses and mules have been exported from this country in the last 27 months for use in war. These figures show almost one horse or mule taken for every twenty-five left. Even after the war is over, exports will not cease, for thousands of horses will be needed to start European agriculture anew.

It follows, as a necessary consequence, that the demand for purebred draft horses for breeding purposes will continue to be good. Importations have been, to all practical purposes, cut off. We are producing only twelve or thirteen thousand purebred draft horses eligible to registry. This means, in substance, that we are producing only five or six thousand stallions fit for service per year, when we need at least seven or eight thousand. An excess of demand over supply always makes good prices.

The farmer who uses heavy draft mares does better farm work, and raises bigger crops, than he who relies on small horses. Furthermore, he has horses to sell each spring, at a profit.

———o———

SAVE SOWS FOR BREEDING

A brood sow is a good investment. This is true even in these strenuous times of high prices of food concentrates. The quotations on these feeds are controlled to a considerable extent by the price at which meat animals sell. Hence concentrates usually command a high figure when hogs on the hoof at large packing centers sell at more than 16 cents per pound. However, record prices for swine as well as feed concentrates have been a great incentive to farmers to "cash in" all the hogs available. That many sows have been included is evident from the fact that on April 1 the correspondents of the Bureau of Crop Estimates of the Federal Department of Agriculture reported approximately 3 per cent fewer sows on farms in the United States than a year before. Further, this is the first year that the supply has not increased since 1913.

At this time the marketing of a sow that can be or has been bred is fairly comparable to "killing the goose that laid the golden egg." Although the fecundity of swine is well appreciated by farmers, at times sows are scarificed when a little forethough would cause them to be retained. Breeding sows multiply five or six times as rapidly as other meat animals. They have an average litter of five or six pigs and may be bred twice a year, although three times in two years accords more with current farm practice. The litters increase in size, on the average, until sows are five or six years old. However, a large proportion of the sows are sold after producing one or two litters and before they have reached the period of greatest usefulness. Occasionally sows become unsuitable for breeding because of their clumsiness, "high" condition, inactivity or barrenness, and these, of course, go to market when the proper weight, but the total sows of this class is a mere bagatelle.

In these days when labor is high and also scarce on many farms, the hog may afford "a way out." Hogs utilize refuse and waste grains, damaged grains, and garbage; garnering grain behind cattle or shattered grain in harvest fields; and utilizing slaughter-house by-products and dairy products. They are also largely self-feeders. The modern farm "cafeteria" gives a pig a chance to make a hog of himself more quickly than he can by the hand-fed route, and it has the added merit of being the cheapest way of producing pork. A sow when she is not developing a litter or nursing pigs, can in summer time to placed in a pasture and given very little grain. In winter, possibly the cheapest maintenance ration is a combination of grain and hay, such as corn, wheat, rye, or barley, and alfalfa. The grain should be limited to one or two pounds per hundred pounds live weight per day. Sows should be given all the alfalfa hay or other legume they will clean up. Sows which show exceptionally run-down condition from suckling their pigs should be separated from the herd and fed grain until they regain breeding condition. Where pastures are very luxuriant, it is possible to carry breeding sows on pasture alone, but the most palatable hay will not keep sows in breeding condition if fed alone.

Breeding sows are at a premium and the demand for young stock is unprecedented. The hog buyers state in their reports that they are compelled to take anything that looks like a hog. The fluctuation in the number of hogs in the United States is subject largely to the fluctuations in the financial condition of the country. The high prices paid for hogs are a big inducement to farmers to market their hogs, and as stated before, the high prices of corn caused them to cut loose during the latter part of the year. The high prices paid for hogs and an increasing export trade are the two main factors which make the hog business especially attractive at the present time. Millions of farmers would purchase sows to farrow this coming spring if they could, but this is almost an impossibility. Those farmers who are fortunate enough to have retained their breeding sows will play an important role in placing spring pigs on the market. The spring gilts from these litters should not be sent to market for meat purposes, but should be retained or sold only for breeding purposes in order to augment the pig crop next year.

———o———

DON'T WORRY

If you have a habit of worrying occassionally about one thing or another, do not fail to read the following philosophy evolved by a Gallic soldier that will stand as a classic for all time to come:

"Of two things, one is certain: Either you're mobilized or you're not mobilized.

"If you're not mobilized there's no need to worry; if you're mobilized, one of two things is certain: Either you're behind the line or you're in front.

"If you're behind the line there is no need to worry; if you're on the front, of two things one is certain: Either you're resting in a safe place or you're exposed to danger.

"If you're resting in a safe place there is no need to worry; if you're exposed to danger, of two things one is certain: Either you're wounded or you're not wounded.

"If you're not wounded there is no need to worry; if you are wounded, of two things one is certain: Either you're wounded seriously or you're wounded slightly.

"If you're wounded slightly there is no need to worry; if you're wounded seriously, of two things one is certain: Either you recover or you die.

If you recover there is no need to worry; if you die you can't worry."

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MAKE SOME PERMANENT WALKS

Farmers today are beginning to learn the value of permanent walks on the farm—concrete walks—starting at the front gate and extending to and beyond the farm house, to orchard, truck garden, barn and outlying buildings, to which trips afoot are necessarily frequent.

While the desirability of these walks cannot always be argued successfully, perhaps, from the time-saving and therefore cash-saving standpoint, the need of such construction can be argued conclusively from the standpoint of cleanliness of the home and comfort of the family, and also from the standpoint of permanence since a walk once built of concrete requires no further expense.

The concrete walk is the modern substitue for the old plank walk, or cinder path which first extended from the front gate to the front porch and after sneaking arounding the side of the house vanished into a single strip of board laid on the ground or a series of stepping stones over which you managed to pick your way in wet weather and stumble over in dry weather. The old walk scarcely ever went as far as the barn and if it did it stopped at the barn lot gate. As a conveyor of mud and barnyard filth to the back door of the house and inside of it, the old walk was an unqualified success. A revoluting bucket and chain from the manure pit could not have been more efficient in this particular, especially in wet weather. On this condemnation of the old plank, cinder or slippery stone walk we are willing to rest our case with the testimony of any journeyman housewife, so to speak. Few brides or farmwife apprentices, even of June date, could view it with any degree of complacency whatever without first arming themselves with brooms before opening the back door of their homes.

Such was the low estate in which the concrete construction era found the farm walk. It had never experienced a high estate and was a fit companion for the mudnole road which ran by the front gate. Its construction on the modern farm is warranted from the standpoint of cleanliness and comfort and as a further means of making farm life more pleasant. It undoubtedly saves work in the farm home,creating as it does more cleanly surroundings and provides a clean avenue to the garden and barnyard alike, regardless of the weather.

Concrete for walks where the work is one-course construction, should be a 1:2:3: mixture although if care is used to select well graded sand and pebbles, a 1:2:4 mixture will accomplish the purpose; but for the greatest degree of sanitation, the surface must be nonabsorbent and this means a watertight concrete which the home worker will be more certain to secure by using a 1:2:3 than a 1:2:4 mixture. Sand should range from fine ¼ inch with the coarser particles perdominating, while pebbles should range from ¼ to 1 or 1¼ inches. Both sand and pebbles should be clean and free from clay or other foreign matter. (A 1:2:3 mixture means 1 sack of Portland cement, to 2 cubic feet of sand and 3 cubic feet of pebbles or broken stone.)

Many persons have the impression that when definite proportions of sand and pebbles are specified the same results can be secured by substituting for them an equal bulk of bank-run material, that is, sand and pebbles as found combined in the ordinary gravel pit. This is incorrect since the volume of air spaces (voids) in bank-run material requires more cement for filling than would be used with a properly proportioned mixture of cement, sand and pebbles. Bank-run gravel should never be used for concrete work until screened, so that the fine and coarse materials (sand and pebbles) can be correctly reproportioned.

Consideration must be given to the character of the soil upon which the walk is to be laid and sometimes a subbase or special foundation is necessary. So far as possible, a concrete walk should be built where drainage will be good, but if this cannot be done, a subbase must be built by compacting clean gravel or cinders, then side drains should be laid to lead wate away from this subbase.

When there is not much heaving of soil because of the fact that it is loose and well drained, slabs for farm walks need not be thicker than 4 inches, but 5 inches is better. In no case should individual slabs exceed 5 feet in any one dimension. Forms in which to place the concrete should be provided, the course of the walk being first marked with strings stretched from stakes. Then the sod is removed, loose soil dug out and the foundation compacted. Usually 2 by 4's well staked in position will serve as forms. One-inch lumber is sometimes but, unless well staked, the placing of concrete will often make such light forms bulge out of line, thus affecting the appearance of the finished walk. If the walk is to be 5 inches thick, then 2 by 5's should be used for forms so that the concrete will be placed to the required thickness.

For most if not all farm walks one-course construction will be found best. This can be floated readily with a wood hand float to the desired surface finish, if pebbles no larger than ¾ to 1 inch are used when proportioning the concrete mixture.

TOLERANCE

Dr. J. T. Willard.

We are living in a time of most portentous import. No generation of men has been subject to a strain of adjustment that compares at all in intensity with that which tests our own powers of adaptation. The changes in modes of production, in the products of industry, in means of transportation, and in means of communication, have made the earth such as would be scarcely recognizable by Napoleon Bonaparte or Benjamin Franklin. All of these changes impinge upon mankind in the physical, mental, and moral nature of the individual, and in the organized relations of his social, religious, economic, commercial, and governmental life. The changes have come with overwhelming speed. They are due to the discoveries of modern science, in which more has been accomplished since 1776 than in all preceding time. The individual nations in their internal life are but partly adjusted, and fortunate will be that people which is so wisely conducted that it reaches adjustment without bloody civil strift. The conflict between labor and capital is irrepressible; the issues between the landed and the landless will become more poignant, the ralation of debtor and creditor more preplexing, and the clashing of races and classes more evident. Economic justice is the only way to salvation, and what constitutes such justice? That can never be attained save by tolerance for all by all. As tolerance is an attitude of mind and soul it can be manifested in the highest degree by none but the most developed individuals and peoples, and, without doubt, in preservation of themselves and others, they will be obliged to repress the aggressions of the intolerant and the savage.

Tractors are the busy Berthas of agriculture.

To Buy FARMS To Sell

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A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

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604 Dooly Building,
Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

RELIABLE FARM BARGAINS

WE WILL ACCEPT LIBERTY BONDS ON THESE FARMS.

In Cache valley we have one of the best ranches in that part of the state, containing 244 acres. This ranch is under high state of cultivation and has been farmed for sixty years. There is a good house, containing six rooms; large barn that will hold ten head of stock, cows sheds, granary, chicken houses, hog pens; in fact, all buildings necessary on a farm and ranch. There is a first-class spring of water piped into the house and barn. All kinds of plows, harrows, grain drills, disc harrows, threshing machine, hay derricks, and other tools too numerous to mention; twenty-five head of cows, twelve head of first-class horses. This property is on the main county road and right near one of the best towns in Cache valley, and has an independent water right—maintenance absolutely free. This farm is planted to grain, alfalfa, timothy and clover, two acres of orchard, about one-eighth of an acre in small fruit. The farm is particularly adapted for stock raising, dairying and farming. There is a lot of first-class sugar beet land on this farm. We are offering it at the ridiculously low price of $85.50 per acre. In addition to the 240 acres there are joining that will be thrown in with eighty acres of pasture land adthis sale free of cost to the purchaser.

40 acres in northern Cache valley, all in alfalfa; raised a first-class crop this year; right near the railroad station, good town; $150 per acre, 10 per cent down, ten years on the balance. This property is close to a good town, good school, churches and social conditions. The water for domestic purposes is first class.

In the Bear River valley we have a first-class farm, containing 185 acres. This farm is on the main county road and right near the town of Tremonton. It is under a high state of cultivation; has a first-class modern house, eight rooms, hot-water heat; good barns, granaries and other outbuildings; two acres planted to orchard; fenced with a wovenwire fence; large shade trees and lawn around the place; water piped to the house and barn; in fact, every modern convenience necessary on a farm. This property has been under a high state of cultivation for a good many years and can be had for $150 per acre, on terms. Will consider Salt Lake City property in part of exchange.

$115 per acre will purchase a forty-acre tract right near the town of Tremonton. This farm has been under cultivation for a good many years and at the present time, one of the best buys that we have ever offered in that valley. This land is situated in the heart of the best farming district and is under a high state of cultivation. This property can be had at one-fourth down and ten years on the balance, 6 per cent interest.

$800 will buy one acre of fine garden land on old 14th South, with a new house on it. This is an extra snap and should go quick. $400 down and the balance on easy terms.

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480 acres, all can be irrigated, two running streams across property, adjoins open range, eight miles from railroad station and two miles from school. All fenced and produces 200 tons of hay. Includes 150 cattle, 15 horses and all necessary machinery. Price $17,500, terms.

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POULTRY

THE CARE OF LAYING HENS

F. S. Smith.

Most of us who keep hens would like to have them lay throughout the winter, especially if eggs are bringing four and five cents each. But are we anxious enough to keep them laying to provide such comforts as an egg producing hen must have in this cold country? She does not require fancy buildings either, externally or internally. Any old building that is wind, cold and rain proof and absolutely dry throughout will answer the purpose if properly taken care of. Dryness is one very important thing in housing poultry. It happens that some have to build hen houses on quite damp ground, if they built at all. In such a case I would dig out two or three feet of soil, then fill in with coarse stone at the bottom, then with gravel, finishing on top with cement. If the ground is quite wet I would have the house from one and one-half feet to two feet above the level. Bank up the outside, especially of old houses, making a drain clear around the house, this has a tendency to keep the inside dry. For a ventilator I find nothing better than windows. These I have so constructed that I can open them during the day, with wire netting on the outside to keep the hens from flying out and muslin screens for the inside to keep the wind and storm from driving in. Most poultry houses have double sash windows of the ordinary size. In this case I would remove eihter the top or bottom sash and replace it with white muslin. For instance, drop the top sash down even with the bottom one, thereby making double windows, then put in cloth window in its place above. The cloth can be tacked on a frame so as to go in place of the sash. In severely cold weather and during very heavy winds remove the cloth and raise the glass sash in place and then drop a curtain down over the whole window at night to keep frost out. The cloth windows admit a good, healthy circulation of air and at the same time if good heavy cloth, admits no draft to speak of, a thing which fowls can not endure. We have noticed on windy days how the hens will bunch up together on the leeward side of some wind break. Even in warm weather poultry avoid drafts as much as possible; in a cold climate it is impossible to have free ventilation without admitting some cold. I have never found any ventilator that would overcome this. In fact, an opening of any kind that will not do this is no ventilator at all, so to avoid having the hens get cold during the nights I plan the roosts in the opposite part of the room and drop a curtain in front of them. Give each fowl from five to six square feet of floor space. If special care is given them less floor space may answer. A great many hens are kept with an allowance of not more than three square feet of floor space and do finely, but they are carefully attended to, as to food and cleanliness. Arrange the roots and nests boxes so as to allow them all the floor space possible for scratching room. In the north hens are confined to the houses the greater part of the time from November till April, and to do well they must have plenty of room to exercise and work in. Twenty-five head together in a house 10x15 feet should do well, keep a good quantity of dry litter on the floor for them to work in. I prefer to have this about six inches deep then the hens can work down through it to the floor and get all the grain, while if it is of greater depth they may not get what they require. As soon as this becomes packed down and soggy and damp at all remove it at once and put in fresh dry straw, chaff or leaves. Hens will not work nor will they do well when there is a bed of damp litter on the floor. This is an important thing to look after, but a chore which I find is often neglected. On a cement floor it is better to have two or three inches of sand or dry dirt

Do not overlook keeping the water dishes clean, empty them out at night and fill with clean fresh water right after feeding in the morning, and if the weather is cold have the water luke warm. Often the hens will drink in the morning if the water is handy by, before eating any food. At any rate they should have it early in the day. Ice cold water chills them and is bad, but do not give them hot or very warm water at any time. Arrange the drinking dishes so that the hens will not get dirt and litter into them. This can be easily done by placing them up from the floor a little or by having some slats nailed around the dishes. Having the nests open and down on the floor where the hens can jump on them is wrong. The place for these is in a secluded part of the room and up from the floor and closed on top, I would not have them under the roosts as some arrange them. Low, open nests leads to egg eating. Have the perches so fixed that they can easily be taken down and cleaned, and do not neglect placing a platform under the perches to catch the droppings. This is very essential and issures keeping the floor clean under the roosts. The arrangement of the roosts is an important thing in the hen house. Only a short time ago I noticed in a large and new hen house the roosts placed in the coldest corner of the building and with no dropping platform underneath them. By having this platform just that much more floor space is allowed the hens, for no hens will work under the roosts when there is a quantity of manure on the floor.

I usually feed dry grain for morning and evening, and I do not give as much mash food as a good many advocate doing, at any time, although it is all right for a change two or three times a week, then some vegetable food and clover can be mixed in, which is beneficial and makes a cheaper ration. In severe cold weather a light, warm mash feed is good in the morning, but to give a full ration of soft feed for the first meal every morning has not given me as good results with laying or breeding hens as when given a limited amount at or about the noon hour. I prefer mixed grain, corn, wheat, barley, oats, buckwheat, etc., rather than one kind alone at a time. As to the proper amount of feed a hen, I find that for laying stock of the Leghorn class, one ounce of food for each pound weight of the hen daily, that is for Leghorns that weigh three and a half to four pounds (this being about the laying weight) give three and a half to four ounces of food, either mash or whole grain, and for the American class three-quarters of an ounce to the pound or six and one half ounces daily for Plymouth Rocks. I figure the laying weights of this fowl about one pound less than the standard weight. Give all the green food in winter that the hens will eat freely and provide for them grit and charcoal all the time, and see that they are kept as free as possible from the mites and lice.

I think I have laid down no rules but what can be followed by almost any one keeping poultry. This system has proved a success for me and I know of no reason why it should not with others.

CHEAP GAINS ON POULTRY FROM HIGH-PRICED FEEDS

Missouri College of Agriculture.

It is just as important to fatten chickens sent to the market as it is to fatten hogs or beef cattle. In fact, when the chicken comes from the range it is in the proper condition to put on economical gains. In recent tests chickens gained about 23 per cent in 12 to 14 days' feeding. That this gain is economical was shown by the fact that the grain required to put on a pound of gain was approximately 3½ pounds.

The total cost of a pound of gain with corn meal at $2.25, bran at $1.50, middlings at $1.75, and sour milk at 20 cents a hundred pounds, was 8 cents. Even at the present high price of feeds, economical gains can be made.

The ration consisted of corn meal, 7 pounds; shorts, 3 pounds; and bran, 1 pound. To every pound of this mixture, two pounds of sour milk was added. This wet mash was fed twice daily. The length of the feeding period, which was ten minutes the first day, was incr ased a minute a day as the period advanced. The chickens were confined in coops 2 by 2½ feet square, each coop having a wire bottom. Slats were placed up and down, 1½ inches apart, permitting them to reach the food which was placed in a trough outside. The close confinement not only discourages exercise, thus promoting gain, but the inactivity causes the tendons to soften. The fat is distributed through the muscles by the fattening process and the result is a luscious flesh which comes only in a finished product, put on cheaply.

PREPARING FOR WINTER.

There is such a thing as harping too much on the same subject, yet again it is said that constant washing will wear away the hardest stone. Be that as it may, now comes up the annual recurrence of getting everything ready for winter. There are so many little things that can be done about the place these warm October days, things little in themselves yet great in the aggregate, which make so much for winter convenience and comfort. It takes but a few minutes now, when the weather is good, to fix the roof on the barn. It will be an entirely different matter to get up there and shovel off the snow and ice two months hence, and work with frosted fingers and a slippery footing. The gate which today requires merely a few screws in the hinges, will, once the wind wrenches it off the post, need new lumber and reswinging. So it goes, instance after instance of the little things about the farm that need fixing before cold weather sets in. There is the farm machinery. Every day it is left outside when it might be sheltered takes off that much of its value. It is not the wear while it is in use that causes machinery to break down, it is the eating of rust, the wearing of the elements. The livestock can stand this weather all right, even though it gets chilly when the fall rain beats down, but unless they have some sort of protection when it is 20 below zero you will have to feed an awful pile of hay. And how about the winter supply of wood, the coal that can be hauled now when the roads are good the —— Oh, there are so many things it is useless to name them all. Look around on your farm. The odd jobs that cry for doing are not hard to find. Get at them before cold weather makes the work trebly difficult.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE

AND

SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

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Virginia, Idaho.

"Home of the Champion Durocs"

CHOICE REGISTERED DUROC JERSEY PIGS

Now ready FOR SALE. From Richards' "Pathfinder" and "Defender," and prize-winning sows. My junior yearling boar, from "Defender," won 2nd pride at recent fairs at Boise and Salt Lake. Prices very reasonable.

V. R. FISHER

Oxford Idaho

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.

Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make you acquaintance. See these animals before buying elsewhere.

20 INTERESTING MAGAZINES. Latest issues. Value $3.00. Yours for 25c prepaid. Eastern Bureau, New Bayt, N. J.

PURE BRED, LARGE TYPE POLAND CHINA HOGS FOR SALE. Write A. C. Anderson, Box 1, Ephraim, Utah.

HORSES AND COWS FOR SALE

On account of using a motor truck and trailors, the State Mental Hospital, Provo, Utah, will sell four horses from 1300 lbs. to 1500 lbs. and five well-bred colts, one to three years old. Will also sell a few pure-bred Jersey cows and heifers.

THE HURST SAGE BRUSH GRUBBER

The best implement known for clearing land of sage brush, for the money, will be exhibited on the State Fair Grounds Conference week. Will be pleased to explain its merits to any one wishing the information.

THE HURST GRUBBER CO.

Fairview Utah

FOR SALE

Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.

H. E. WALKER

Box 964, Salt Lake City, Utah.

Notice—Men Out of Work

THREE HUNDRED MEN WANTED

Rock men $3.50. Carpenter's helper $3.50. Concrete Men $3.50. Teamsters $3.15. Carpenters $4.50. Nine hour day. Board 90 cents day. Hospital fee $1.00 a month. Bunk rent $1.00 a month. Men furnish own blankets. We furnish electric light and bunk houses, shower baths. The board is first class.

This work is at Olmstead, six miles from Provo, for the Phoenix Construction Company, and will last three months.

Apply at 149 South West Temple, Salt Lake, for transportation, which will be advanced, and no charge made if not stay 30 days.

The Tractor Upkeep

D. McDonald, Jr.

Figuring upkeep on any piece of machinery is a matter of listing all items of maintenance, depreciation and possible repairs that may occur between the time the machine is built and the time it is eventually consigned to the scrap heap.

Depreciation is, of course, apportioned according to the number of years the machine will probably last. If the manufacturer figures that the machine will perform its duties for ten consecutive years, then the yearly depreciation charge will be ten per cent. If the machine will last only five years, then the yearly depreciation charge will be twenty per cent.

The percentage to be allowed for repairs on any machine must, of course, be learned by experience with that particular type of outfit, under the peculiar conditions with which it must contend.

As a general proposition, taxes and insurance are charged in the upkeep figures on any piece of machinery. These are, however, generally excluded from the upkeep on all farming equipment, and need not be mentioned in connection with a tractor.

It is interesting to note the difference between the manufacturer's statement of actual yearly charges against a tractor and the farmer's statement as to the maintenance cost of an equivalent number of draft animals. The manufacturer figures in his expense account on the tractor, based on the tillage of 500 acres a year, the following:

First cost	$1,000.00	
Interest, 6%		$ 60.00
Depreciation, 10%		100.00
Insurance, 2%		20.00
Total fixed charges	$180.00	

Figuring that fuel will cost thirty cents an acre, on ten cent an acre, repairs ten cents an acre, the operator thirty-three and a third cents an acre—his wage being two dollars a day and the machine plowing six acres a day—the total is eighty-three and a third cents an acre, or $416.66 2-3 for a year's work. Adding this to the fixed charges of $180, the manufacturer's theoretical yearly charge would be $596.66.

These figures are practically accurate. They do not only show the facts in the matter, but they indicate a decided financial advantage in favor of the tractor, when accurate costs are taken on other agricultural methods. Still the manufacturer does not care to make these figures public. Let us see why. Let us see what sort of figures he must compete with if he does publish his tractor facts.

If the average farmer is asked what he would consider the upkeep on six horses he will say: "Oh, well, I feed them at a cost of about thirty cents a day when they are working and I turn them out to pasture when they are not. Figuring up a whole year, I should say they cost me an average of twenty cents a day a head. That is $73 each a year, or $438 for the six for the entire year."

If the manufacturer goes to the farmer with the statement that it will cost $600 a year to operate his tractor it may readily be seen that he will not stand a very good chance of selling a machine to the farmer who imagines that his horses cost him only $438 a year, doing the same amount of work and a considerable number of other chores. However, were the manufacturer to figure, according to his own methods, the yearly cost of a team of six horses plowing 500 acres, his results would be very much as follows:

First cost	$1,200.00	
Interest, 6%		$ 72.00
Depreciation, 10%		120.00
Insurance, 2%		24.00
Feed, $1.20 day, farmer's own figures		438.00
Harness, upkeep, veterinary expense, blacksmithing, etc.		100.00
Total	$754.00	

These figures also are practically accurate. It will cost the farmer approximately $800 a year to plow or to work with six $200 horses if he figures into his upkeep and operating expenses charges that no business man can fail to enter as regular operating costs.

As a matter of actual fact it will be seen that figured accurately the tractor has nearly $200 a year the best of it. Generally it will be found that the tractor is a money saving proposition, and that there can be no comparison between the efficiency of tractor plowing and the old-style horse plowing.

There are many places, however, where it would be foolish for a farmer to attempt tractor farming. Take the case of a farmer who is raising a crop that can be plowed by two horses in the spring and cultivated by the same two horses all during the summer, harvested by the same two horses in the early fall and hauled to market by the same horses. This man has no use for a tractor. He would do better to keep his horses and to let them continue in the work that they are successfully accomplishing.

It is difficult, if not impossible, to cultivate with the average tractor. Horses are generally essential for this kind of work, and for light hauling it is fatal economy to use a tractor. The only three operations in which the two-horse farmer could make good use of a tractor would be plowing and harvesting his crop and operating stationary machinery, such as the corn sheller and the silage cutter.

Take, on the other hand, the man with ten times as much land. He must use ten times as many horses for his plowing, but he will not require the same number of horses for his cultivating, as cultivating is lighter, quicker work, and may spread over a longer time than plowing. For the plowing season, which is short, he must have twenty horses; for the cultivating season, and, in fact, for all the other seasons, he can get along perfectly well with only ten.

In brief, he must feed and keep for twelve months in a year ten horses that he can use only twelve weeks. It would be economy for him if he retained ten horses for his hauling and cultivating, sold ten, bought a tractor with part of the proceeds and put the balance in his pocket. Each year his economy in tractor plowing as against horse plowing will be added to the amount he has saved on his original investment.

The farmer who buys a tractor must figure in advance just what the economy in his purchase will be. If accurate figures of the first cost, upkeep and depreciation do not show a balance in favor of the tractor, he should stick to horses.

HOW HO MAKE AND PRESERVE CIDER

In addition to the jams, jellies, etc., that are made up of overripe apples, a superior grade of cider can be made and put up and kept sweet fo ran indefinite period. Of course, the unfermented apple juice is that in which no changes caused by the yeast plant, have taken place. On all fruits the yeast plant is found very generally distributed and belongs to the same low order of plants as the yeast used in bread-making. It grows quickly in fruit juices, changing the juice into alcohol. In other words, fermentation begins. One of the most important features then in making sweet cider is to kill these organisms so as to prevent fermentation.

This can be done in two ways: first, by the use of chemicals; and, second, by the application of sufficient heat to destroy the organisms. The first-named method cannot be recommended, for then the liquid is adulterated, is inferior in quality and unfit for human consumption. The later-named method is the one to follow."—Farm and Fireside.

To the Farmers of Utah:--

Your Part in the Second Liberty Loan

The farmers of America are supplying the world with food, and the farmers of Utah are doing their full share. Without this food, success in the War would be impossible. The patriotism of the service you are now rendering cannot be over-estimated **but food alone will not win the war.** Our government must be provided with money. Huge armies must be clothed and armed and supplied with the tools of war, and transported to the other side of the world.

You must help financially, too

In a world made free by the blood—the suffering—the tears of millions upon millions of his fellow men, no American, and surely no Utahn, will feel that he has done his duty until he has **DONE ALL THAT HE CAN.**

To the full extent of your ability YOU must carry on YOUR shoulders some of the financial burden of this war for humanity.

In making your subscription to the second Liberty Loan, think of the Utah boys who are offering their lives, if need be, that civilization shall not perish. Among those boys are your own sons and your neighbors' sons. Remember that we are not only fighting for humanity—we are fighting for the safety of our own homes—for the safety of our own wives and children. **Our armies are fighting in Europe so that it will not be necessary for them to fight in America.**

With these thoughts in mind, make your subscription.

Make it to include money you need. Make it to include money you CANNOT POSSIBLY GET ALONG WITHOUT. And the feeling that will spring up in your heart will be patriotism—and more. It will be your part in the universal sacrifice—"That the world may be made safe for Democracy."

Don't Wait

Go to your bank NOW and buy the bonds that will send your dollars over there to give a FAIR CHANCE to the boys who are offering their lives for the world's liberty.

Liberty Loan Committee of Utah

UT Ag. Sem.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 14 LEHI AND SALT LAKE CITY, UTAH NOVEMBER 3, 1917

Why Fall-Plowing Pays---Saves Time and Moisture

By George Stewart, Assistant Professor of Agronomy, Utah Agricultural College.

Fall plowing has won a big place in r farm practice. This would scarce- be the case if there was no funda- ental reason. But we need not worry this respect; there are several rea- ns, certain of which is so extreme- important as to be vital.

Fall-plowing Saves Time.

By all odds the most important rea- n for fall plowing is that it saves ne. Now it so happens that time is e most important asset of the farm- —or any man, for that matter. He s just fifty-two weeks in which to at least twice that many tasks, h of which would be better for a k of labor than for a day. Herein one of the farmer's difficulties. ides this, however, work tends to up. Instead of two jobs for each k, there are seasons when a dozen more come at once. More things d doing in the spring than at any r time. Among these things, the t essential, and usually the largest, is plowing land not prepared the ious fall.

all plowing saves time in two s. First, it is unnecessary to plow that is already plowed. But this nly half. The other half is that lbeds can usually be prepared much earlier on fall-plowed ground. Because plowing is a deep operation, it must wait until the soil has dried out several inches in depth. Since the surface dries most rapidly, harrows, weeders, and seeds can be used on the land long before plowing is possible. This is particularly true on heavy soils, that is, on clays and clay loams. Coarse sands may permit plowing almost as soon as frost leaves the ground. There are, however, but relatively small areas of such soil in Utah.

This earlier preparation of seedbeds is vital for such crops as sugar-beets, spring wheat, oats, barley, and spring-planted alfalfa or clover. In most localities, these crops do best when planted early. In addition to this, the more compact seedbed which results from allowing the soil to settle all winter is likely to give better stands.

The plowing season is also much longer in autumn than in spring. Plowing may be done from early August or late July until well into October, or occasionally even into December. Some sections plow nearly all winter. Set against this is a season two or three weeks long in spring. Though fall plowing is somewhat heavier of draft, it is done when labor is cheap because of being done in a slack season. This last may not be true where sugar-beets or other late crops form a major part of the cultivated crop. Autumn is, however, usually less busy than spring even where beets are grown

Moisture Also Saved.

No matter what crop is to be grown, moisture is always the most important element in its success. Fall-plowing permits the saving of water in four ways.

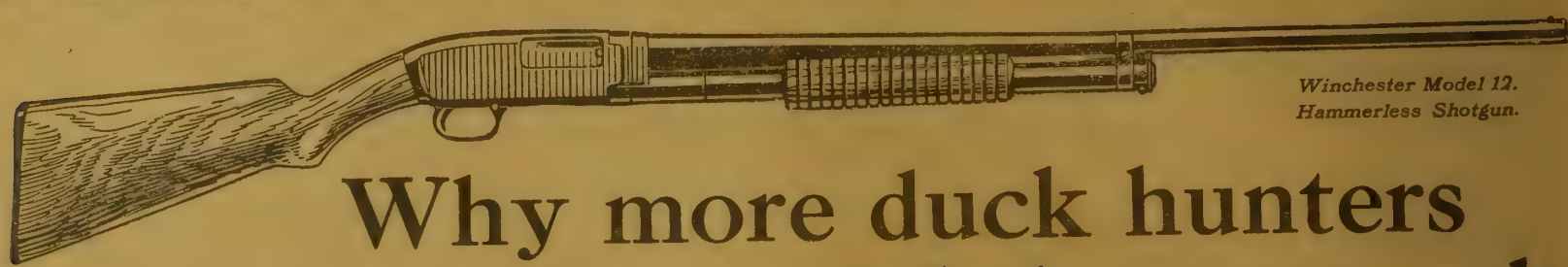
1. It enables the early-planted crops to use much surface water that is lost in later planting. This is no small quantity, for evaporation is especially active from the saturated surface in early s ring.

2. Because harrowing may take place earlier than plowing, the soil is given a mulch just that much sooner. The sooner the mulch begins to serve, the more water it can conserve for plant growth. On the other hand, spring plowing leaves the land unmulched until the soil is dry enough for plowing. When the land is plowed, it is loosened, thereby permitting the loss of much of that water which sonably compact. In such a condition double loss: (a) evaporation from the surface during the several days after harrowing can be done until plowing is possible, and (b) the almost complete drying out of moist of the soil loosened in plowing.

3. Any weeds, manure, stubble, or straw on the land is turned under and may prevent the soils settling. In this case a soil dries so rapidly that decay is unlikely, whereas fall-plowing, which turned under this organic matter two or three months previously, has permitted the soil to become rea- decomposition rapidly reduces coarse material to humus. Instead of causing the soil to dry out rapidly as it does under spring plowing, this humus greatly increases not only the water-holding power of the soil but also the ease with which a mulch is made. Thus, it is evident that where considerable coarse refuse is to be turned under, fall is the only safe time to do it. Spring-plowing is risky also in that drying may take place so rapidly after plowing that germination is imperfect. Fall-plowing decreases this risk.

4. A similar, but not identical con-

(Continued on page 9)



Winchester Model 12.
Hammerless Shotgun.

Why more duck hunters choose this model than any other

If there's ever a place where you need a gun that's a hundred per cent reliable, it's when you're down in the damp salt marshes after duck.

Whatever gun you may start with, if you keep on long enough, you will come around to the Winchester No. 12 Repeater. It is the favorite in the long run with old duck shooters.

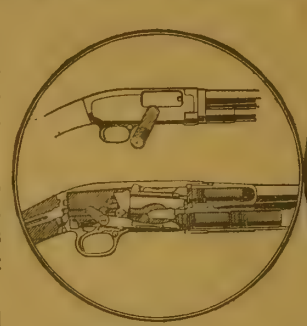
In the damp salt air of the seashore and swamps this gun never "gums." Under the most severe conditions it is a sure-fire, sure-to-work Repeater. It will not jam, catch, or fail to extract the empty shell. It "feels" right, "comes up" right, and *is* right. It works smoothly in whatever position it is held.

At the distance at which you get most chances at ducks, this gun shoots an effective uniform pattern of great game-getting penetration.

The pattern that brings down the game

The remarkable game-getting pattern of the Winchester Model 12 (or the Model 97 for those who prefer a hammer gun) shooting its own standard ammunition, is the result of infinite care taken in boring the barrel.

The right amount of choke for different loads has been worked out after exhaustive experiment. Result: a pattern that spreads out evenly — neither too scattered nor too bunched—and lands with lots of steam behind it



Quick feeder, sure ejector. Throws empty shell to the side, out of your way.

Even spread, maximum penetration, Winchester shot pattern brings down the game.

The barrel *is* the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard of quality of the barrel on the highest and lowest priced Winchester guns. With Winchester the barrel *is* the gun and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel.

The Winchester barrel

The barrel of the Winchester Model 12 has been bored to micrometer measurements for the pattern it is meant to make. The degree of choke exactly offsets the tendency of the shot to spread. Until its pattern proves up to Winchester standard, the gun cannot leave the factory. The Nickel Steel construction preserves the original accuracy forever. The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that, with proper care, will last a lifetime.

For those who prefer a hammer action shotgun, we have made the Model 97. It is built on similar lines to the Model 12, but with hammer action.

What (TW) means

This mark on the barrel means *Viewed and Proved Winchester.* This stamp stands for Winchester's guarantee of quality, with fifty years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times for smooth action and accuracy, and has been fired with excess loads for strength.

At every stage of Winchester manufacture, machine production is supplemented by human craftsmanship. It is a *test and adjustment process.*

It is this care in manufacturing that has produced in the Model 12 and Model 97 guns of unsurpassed game-getting qualities that have won the name of "The Perfect Repeaters" among duck hunters.

Write for details of Winchester shotguns, rifles and ammunition

The Winchester catalog is an encyclopedia on shotguns, rifles and ammunition. Every hunter should have one. It gives detailed specifications of the Model 12 and Model 97, and describes at length the principles on which every one of the world famous Winchester shotguns and rifles is built. Write today. We will mail you a copy free, postpaid.

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HOME DEFENSE LEAGUES!

We have a Winchester for Country and Home Defense Leagues which is meeting with universal approval. Many Home Defense Leagues throughout the United States have already been equipped with this gun.

Winchester Model 97 Hammer Shotgun

Take-down Repeating Shotgun. Made in 12 gauge, weight about 7¼ lbs.; in 16 gauge, weight about 7⅛ lbs. The favorite with shooters who prefer a slide forearm repeating shotgun with a hammer.

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World Standard Guns and Ammunition

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VOLUME XIV. LEHI, UTAH, SATURDAY, NOVEMBER 3, 1917 No. 14

Protecting Farm Implements

Dr. W. E. Taylor.

Implements wear out and rust out. Fully one-half of the life of farm implements is lost because of abuse and neglect. Millions of dollars' worth of implements left under the blue canopy in direct contact with rains and broiling sun and ever-changing weather, rust, wrap and decay.

A binder should give from fifteen to twenty years of good service if properly cared for while idle. If, however, it is left in the field where last used, as is too often the case, or is hauled to the barnyard, where it is left for eleven months exposed to the mercy of the elements, it is worn out and cast into the scrap pile at the end of seven or eight years. The same is true of pratcically every tool used on the farm.

The value of farm implements in the United States amounts to approximately one and a half billion dollars—a vast sum. It certainly seems a shame to permit implements to become prematurely useless, as too many farmers do. As a rule, farm implements are made of good material and substantially constructed, and if they were housed when not in use, if all bolts were tightened, the woodwork painted, and the wearing parts greased, they would give double the service they do.

I know of one farmer who used a sulky plow for seventeen years, and spent but 35 cents for repairs on it in all that time. This man's neighbor has the same kind of a plow, farmed the same number of acres, and was obliged to buy a new one every six or seven years. The first farmer had an implement shed where he stored his implementhe when not in use. He saw that all bolts were tightened, that the implements were given a fresh coat of paint occasionally, and that all wearing parts were thoroughly greased to prevent rust. The other farmer left his implements standing in the yard almost hidden by weeds, where they were exposed to all weather conditions and often utilized by the hens for a roost.

A storehouse for implements can be built at small cost. It is not necessary to have a foundation except for the posts, nor will it require lining or a wooden floor. The floor should be of dirt or cinders, slightly raised. A drain around the outside of the building will prevent water from getting in during heavy rains or snows, and is a necessary precaution. For the average farmer, a building 24 to 40 will be sufficiently large to house all of the tillage implements, wagons, hay loader, small tractor, etc. It has been demonstrated that such a building will pay for itself in the saving of implements in five years.

Many farmers have found it very profitable to install a small repair shop in the implement building. A lever forage with fan, together with a drill, vise, stock and dies, tongs, wrench, hammer, file, cold chisel, and a few other necessary tools can be purchased at a price ranging from $17 to $25. A very complete and large outfit with a large assortment of tools can be bought for $50. Such an outfit in the hands of a handy farmer will more than save its cost during the year in money that would be expended for small repairs at the blacksmith shop. In addition, much valuable time will be saved.

The implement building should be constructed with rolling doors along the entire side, one door sliding past the other, each opening being wide enough to admit any tool. The additional cost of having both sides of the building equipped with rolling doors is very little and affords the farmer an opportunity to drive in one side with the implement, unhitch and drive out on the other side. In a building so arranged, there is no jumble of implements as there necessarily is where there is but one large door.

Farmers, think the matter over. Figure the cost, and on the other side of the ledger credit the saving, convenience, etc., and you will not hesitate to construct an up-to-date implement shed at once.

Two scenes showing the harvesting and siloing of our corn crop. Utah this year has doubled her number of silos.

Filling The Silo

S. T. Simpson.

Distributing and packing silage in the silo is frequently neglected. Unless the blower has a distributor attachment there is a tendency for the cut corn to fall in one place in the silo. If the silo is filled in this way, the finer and lighter portions of the stalks are frequently blown to the outside and the heavier parts, ears and butts of stalks, are deposited in the center, thus causing an uneven distribution of grain and stalk and a consequent uneven quality of silage. Uneven distribution is frequently the cause of soft places and air pocekts, which later result in spoiled silage. When the lighter portions are blown to the outside they do not pack well and the silage spoils near the wall. Such spoilage, which really results from careless filling, is often attributed to the silo.

Packing the silage is equally as important as distribution. Thorough packing requires plenty of men and persistent work. Good silage can be had only by uniform packing and uniform distribution of the corn. The entire surface, especially the outer edge, should be packed firmly. The best help obtainable should be stationed in the silo. That is where the silage is ultimately made, and success or failure depends on the ability of the men to distribute and pack the corn.

The larger cutter with the corresponding large capacity frequently saves money in filling the silo, but it may result in a waste of the storage capacity of the silo. If the silo is filled rapidly the corn has little time to settle. Slow filling allows the corn to settle as it is stored, with the result that more corn can be placed in a given space. To overcome this disadvantage of rapid filling woven wire may be extended above the top of the silo, thus increasing its capacity until it can settle. Patent roots are made which serve the same purpose. Refilling in two or three days will accomplish the same end.

Corn cut at the proper stage should require no additional water. When the crop has become too dry, water will add to the keeping qualities and palatability of the silage. Water may be run into the blower or directly into the silo. In the latter case it must be well distributed. Silage made from fodder requires large quantities of water.

More or less silage will decay at the top unless the silo is sealed over or unless feeding is begun soon after filling. To prevent much of this loss, some farmers seal the silo with three or four loads of green corn from which the ears have been removed, some use other sorts of heavy green crops, while still others use saw dust satisfactorily. In every case it is advisable to soak this covering thoroughly with water and tramp it regularly for several days after it has been placed in the silo.

About The Wheat Situation

Written for the Utah Farmer.

When the government took over the control of wheat they assumed a big task which the officials now in charge realize.

A hundred or more cities wanted their place made a grain terminal, this was not practical and could not be done. Utah wanted one of these terminal and many of our citizens worked hard to secure it but they have not succeded so far. The United States has been divided into 14 zones. Utah is a member of the 5th zone with headquarters at Kansas City Missouri, in the New England Life Building. These divisions are known as grain zones.

The milling divisions are eight in number and Utah belonging to the Southwestern Division with headquarters at the same place and in the same building as grain officials.

Some farmers seem to think that the price of wheat may advance, this is not true, because there will be no change until the law passed by Congress goes into effect next year when the price of wheat will be $2.00 per bushel minimum.

There will be no advance in price over those now in effect because all the wheat is under government control and it will not be changed.

The price of wheat is the basis price at wheat terminals less the freight with a reasonable charge for handling same. For No. 1 hard wheat the best price for most of our Utah shipping points is at Chicago, because of the freight rate. Southern Utah will have a little advantage in the Los Angeles market because of a lower freight rate.

The same price for wheat as given at Cache Junction will apply to common points in Box Elder, Weber, Davis, Salt Lake and Utah Counties f. o. b. cars.

Outline of Price Bases For Wheat at Points in Utah and Idaho Under Regulations of Food Administration Grain Corporation.

Chicago	Los Angeles
Price at Thistle, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .60	.45
Rate per bushel .36	.27
Net price 1.84	1.83
Price at Marysvale, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .65	.525
Rate per bushel .39	.315
Net price 1.81	1,785
Price at Milford, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .625	.30
Rate per bushel .375	.18
Net price 1,825	1.92
Price at Nephi, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .65	.30
Rate per bushel .39	.18
Net price 1.81	1.92
Price at Ephraim, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .65	.475
Rate per bushel .39	.285
Net price 1.81	1.815
Price at Cache Junction, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .50	
Rate per bushel .30	
Net price 1.90	
Price at Price, Utah.	
Base price 2.20	2.10
Rate per 100 lbs. .60	
Rate per bushel .36	
Net price 1.84	

(Continued on page 14)

DAIRYING

THE HIRED HELP PROBLEM.

C. P. Goodrich.

I have found as I traveled about the country in the interest of the dairy business, that many dairymen complain bitterly about the trouble they have in hiring and keeping good, reliable help. One man said, "They take no interest in my business, don't care whether they accomplish anything or not, and slip off to town the minute they have a chance."

Then I have talked with many of the young men who have been hired help on dairy farms. They don't like it, that is most of them don't. They say the hours are too long, the work too hard and disagreeable. As one young man said, "This working in and around a great, big, stinking, old style barn full of cows with none of the up-to-date conveniences in it, is awful drudgery. If you don't believe it, try it once. Clean out the stable by wheeling manure for two hours at a time, part of the time going up a steep grade to get it on the pile, and maybe the plank is wet and slippery. Then after that, it's all got to be pitched on the wagon.

"If anybody can get any fun out of that, he can do better than I can."

Now I think much of this trouble can be cured by the dairyman himself. I don't wonder that the help dislike such work. I know how it is. I have been there myself. If the farmer will have his barn fitted out with all the modern equipments, have it well ventilated and lighted, it will pay him immensely.

Objection of Hired Help.

I have taken considerable pains to investigate this subject, talking with both the farmers and the hired men and also those who had been hired help on dairy farms and had quit the job.

The thing that the hired men dislike the most is the cleaning out of the cow stables and handling the manure. If a hired man hates his job, he will hate his employer and his employer will hate him. When there is such a feeling on both sides you can be sure that the hired man is not going to do the best he can for the interest of his employer.

I have spent of late considerable time investigating this hired help problem on dairy farms, talking with both dairymen and the hired man. Every hired man I have talked with says the same thing, "I hate this manure business." But where they have litter carriers, feed carriers or trucks, the hired men feel much better satisfied, provided they are used in all other respects as men ought to be used. Only yesterday I visited a farm where the barn was fitted out last fall with litter carrier and track with a swinging crane outside.

The New Way.

I happened to be there just as the hired man commenced to clean out the stable. He said, "This is something like it. Oh! how I used to hate the old wheelbarrow way. Now I can do it in half the time and it is so much easier work; let down the tub close to the floor, don't have to lift the manure but a little way and move the tub right along so it is handy and easily filled, then away it goes and is dumped into the wagon. I have done it in half the time I used to take, and besides it is in the wagon. Then I hicth on the horses and haul it to the field and bring back the wagon, set it in place and it is ready to be filled the next morning. We have just one load each day. The horses can stand in their stalls till the stable is cleaned out. There is just one more thing we want for this manure business," he said with emphasis, "and that is a manure spreader." And do you know I believe that farmer will get a manure spreader, if for no other reason than because the hired man wants it. This farmer has learned that it pays to have a hired man that is interested and will use his brains as well as his muscles. He should be treated as a partner in the business, and if there is any manhood about him he will stay and be a good partner.

I have dwelt to quite an extent on this litter carrier question because I really think it will do more good toward solving this hired help problem than any other one thing. There are other things that will do a great deal, also. A feed carrier or truck to convey silage or ground feed to the cows is a long way ahead of carrying it a basketful at a time, and it is much easier. This will pay the farmer because it saves time, which is money, and besides, it will please the hired man, which last fact will pay the farmer every time.

THE CONSERVATION AND DEVELOPMENT OF THE DAIRY COW

E. W. Prichard.

War prices and a light forage crop has brought about a pronounced shortage in dairy products. Dairy cattle throughout the country are being hurried to the butcher's block so that the owners may realize a temporary profit from the high price of meat.

Pea and oat hay and alfalfa selling at present prices seem too good to feed the dairy cow, when she too can be put on the market at a premium. But the daiyrman should not forget that the wholesale price of milk, butter, and cheese, is without a precedent, and as these products are not likely to be "Hooverized," the prices will, undoubtedly, be much higher in a few months.

The selling of good dairy stock at this time is to be regretted. Why not keep the economical producer while her product is selling at an unprecedented price and ship her to the packer when her work is finished? The progney of this cow will be more efficient than she has been if a good herd sire is used. Then we will have not only the proceeds from the sale of the cow herself and her products for several years, but a number of good heifers to replace her in the herd as well. Of course, the "slacker" at the milk pail, the same now as in the past, should be eliminated from the herd, the milk scale and Babcock test being allowed to exercise their duty as judges in this case.

The dairyman who has followed this method and spent time and money in building up an efficient herd, then markets his stock at beef prices, employs logic bordering on that used by the machinist who sends a good piece of machinery to the junk pile because scrap iron is high. The value of a dairy cow is not to be judged by the stuff she is made of, but her capacity from producing from cheap, coarse feeds, a high priced product which has no substitute as a food for the human family.

TESTING DAIRY COWS

Increases of from $10 to $15 and in some cases much higher in the annual profits from each dairy cow have universally resulted from the organization of co-operative cow-testing associations in different parts of the United States. The expense of membership in these associations, on the other hand, has been only about $1.50 per cow per year. The organizations therefore have been very profitable.

Because of the great and obvious economic advantages arising from the associations the organizations are one of the most important factors for the upbuilding and development of the dairy industry in this country. Such an organization consists generally of 26 farmers, living within a radius of a few miles, who co-operate to hire an expert tester to keep accurate accounts of the amounts and cost of feed consumed by each cow in the association, the quantity of milk produced by each and its richness in butter fat. These statistics usually reveal the fact that some cows are not producing enough to pay for their keep, while others are highly profitable. Acting on this information the owner of the cows disposes of the least desirable of his animals and makes up his herd exclusively of those that produce a considerable profit.

The membership of the association is placed at 26 so that the tester can make a complete round each month, devoting one work day to each member, and that he may keep his records on a monthly basis. It has been found by careful experiments that the averages based on monthly tests do not vary more than 2 per cent from the production, as shown by daily observations. Since the tester is an expert and can make the necessary tests and computations rapidly, and since he can be depended on to make his observations independently of pressure of work on the individual farm, the owners of dairy cows find it cheaper and more satisfactory in many cases to have their testing done through the association than to undertake to do it themselves.

There are now nearly 350 cow-testing associations in the United States, 135 having been added during the last year. These associations have an aggregate membership of 8,000 farmers, owning approximately 150,000 cows. The cow-testing association originated in Denmark in 1895 and the first of the organizations in this country was fromed in Michigan in 1906. Because of the value of the associations to the dairy industry of the country the United States Department of Agriculture is stimulating interest in them and is assisting farmers in their organization.

Another and somewhat similar line of co-operative work which is being encouraged by the department for the improvement of dairying and cattle raising is the formation of bull associations. The function of these organizations is to make available, at slight expense, the services of purebred bulls for the herds of the associated farmers. It has been found that often the total value of the scrub bulls owned by farmers is sufficient to supply through a bull association purebred bulls for the herds of all. A number of "blocks" of the association members are formed and a pure-bred bull placed in each. The bulls are shifted every two years to prevent inbreeding.

A considerable proportion of the nearly 22 million cows in the United States are too inferior to produce profitably. Where the bull associations have been formed the grade of the stock has been raised appreciably.

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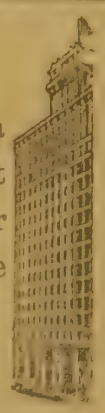

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SALT LAKE CITY

Choosing Varieties of Tomatoes and Potatoes

PROGRAM FOR HOME ECONOMIC ASSOCIATION

Utah Agricultural College.

What varieties shall I choose is a question every grower should carefully consider. Too many of us give it no thought at all. We plant anything we happen to buy or get hold of irrespective of its merits as a variety or its adaptability to our conditions. By so doing we run the risk of having the crop fail entirely or else prove very disappointing. What we must learn to do consistently year after year is to choose the varieties best adapted to our conditions and then see to it that we plant them. Of course we should always be on the lookout for something better than we already have and then utilize it when its superiority has been proved. In the work of improving the quality and productiveness of plants the standard seed companies have rendered excellent service. By means of selection and breeding of desirable strains our present high standard of horticultural products have been attained.

As we approach the close of this remarkable season the U. S. Department of Agriculture is now urging the home gardeners to save their own vegetable seed for next year's planting. This will afford us the opportunity of carefully choosing the seeds of those varieties that are best adapted to our local conditions. In order to serve as a suggestive guide in our choice of varieties the following list gives a few of the standard varieties of tomatoes and potatoes that are adapted to the average climatic conditions of Utah. If the growing season is short in any particular county or locality it is necessary to choose the early maturing varieties. This applies particularly to tomatoes, which are very susceptible to frost. Potatoes likewise should have a sufficiently long season to enable the tubers to reach full size before frost kills the vines.

Tomatoes.

Early: Earliana, Chalk's Early Jewel, Atlantic Prize.

Medium: Matchless, Stone, Trucker's Favorite.

Late: Ponderosa.

Potatoes.

Early: Early Eureka, Early Rose, Irish Cobbler.

Medium Late: Peoples, Mercer (Meshanock), Freeman, Pearl.

Late: Idaho Rural, Netted Gem, (Russet Burbank), Majestic, Maggie Murphy, Blue Victor.

Potatoes.

The potato is the most important vegetable in the American diet. It is valuable for its starch and mineral content, the latter being extremely important in preserving the alkalinity of the blood. It contains but a small percentage of protein, the new potato containing more than the mature, and the protein coagulating when the new potato is cooked which is the cause of its waxiness. No other vegetable can be eaten as steadily without tiring of it, as the potato. Because of its high percentage of starch and mineral when used with a food of high protein content, it forms a most nourishing food. The potato is easily and completely digested.

When buying potatoes select mature, medium sized, smooth skinned ones. There is less waste, the medium sized is more apt to be firm and cooks more easily than a large one. Avoid the strong potato. This condition is due to the potato growing too near the surface, and consequently being exposed to light or may also be caused by sprouting, or unripeness. The result is the development of a poisonous alkloid which is apt to lead to digestive disturbances. If cooked in an open kettle this alkloid will volatilize but the potatoes never have so pleasant a flavor.

Storage Potatoes.

Potatoes kept in their best condition should not be stored until the skins are so firm they will not slip. Even the mature should be handled with care so as not to break the skin for each breakage means an opening for infection. Potatoes keep best when stored between 30 degrees and 45 degrees F. Excessive moisture will cause decay, while too dry an atmosphere will cause wilt.

Preparation for the Table.

Potatoes are best boiled with their jackets on, steamed or baked. Prepared thus there is no nourishment lost and the flavor is best. When potatoes are to be baked, the skins should be thoroughly cleaned with a vegetable brush so that the skins may be eaten as they are rich in mineral. Baked potatoes are the most easily digested because the starch has undergone a stage of digestion in the baking. If potatoes are to be pared, a very thin layer should be removed as much of the mineral and protein content is directly beneath the skin and is lost in deep paring. Pared potatoes exposed to air turn dark, due to the action of ferments in the plant which become active in the presence of oxygen. This may be prevented by covering the potato with water to exclude the air, but potatoes left to soak in cold water lose much of their starch and minerals. In cooking if plunged into boiling water the outside of the potato is slightly toughened and the loss of nutriments is decreased. Therefore, potatoes in order that they may retain the most nourishment possible, and may keep their form best, should be put into boiling salted water to cook. But even with the utmost care some material is dissolved into the water, so the water should not be wasted. It may be used for soups, gravies, or moisture for other foods. When boiled potatoes are cooked, pour the water off and leave the kettle partly uncovered so the steam can escape, or they will become soggy. Baked potatoes, when cooked, should be pricked with a fork or broken, to allow the steam to escape or they also will be soggy.

Potatoes cooked in fat are not easily digested, because the fat coated over the starch prevents the action of the digestive juices on the starch until late in the process of digestion. Only persons working in the open air at hard work can properly digest fried potatoes. Potatoes may be served with a protein dish or mixed with food high in protein, or may be used as the main dish of a meal. They may be made into milk or stock soup or salad.

Potatoes should take even a more important place in the diet than they ever have as they are an excellent substitute for wheat flour when used with other nourishing foods as dairy products. They are cheap and nourishing. Eat more potatoes and conserve wheat.

Baked Potatoes.

Wash skins with vegetable brush. Use smooth skinned, medium, uniform sized potatoes. Bake in a moderate oven. If cooked very slow, are soggy, if cooked in a hot oven, a thick layer is formed over the potato. The contents may be removed and mixed with cubed meat, sauces, hard cooked egg, cheese, fish, etc., then replaced and heated, or just eaten with sauces, or fat as dripping, butter, etc.

Potato Border.

Place a buttered mould on platter, build around it a wall of hot mashed potatoes. Remove mould and fill with creamed meat or fish and reheat in oven before serving.

Escallouped Potatoes.

Wash, pare, and cut potatoes in one-fourth inch slices. Put a layer in buttered baking dish, sprinkle with salt, dredge with flour and dot over with fat; repeat, add hot milk until it may be seen through top layer, bake 1¼ hours until potato is soft.

Potatoes and Onions.

Potatoes	Fat
Onions	Salt

Partly cook onions in a small amount of salted boiling water. Place in a baking dish without draining the water, add potatoes and fat and cook until vegetables are soft.

Variation in Mashed Potatoes.

To mashed potatoes add milk to moisten, beat vigorously and add chopped water cress, and chopped mint leaves to taste or chopped green or red peppers, meat, cheese with crumbs mixed with fat. If the latter materials are used, reheat.

Nuts and Potatoes.

2 cups hot mashed potatoes.
1-3 cup chopped nuts.
Heat together.

Potatoes in Stock.

Cut potatoes into small cubes or slice. Cover with stock from chicken or meat. Add a small piece of butter or fat from stock, 1 teaspoonful lemon juice, and ½ teaspoon parsley cut fine. Cook 3 minutes, serve.

Duchess Potatoes.

To two cups hot rice or mashed potatoes add 2 tablespoons of fat, ½ teaspoon salt, and yolks of two or three eggs slightly beaten. Shape into cone or cylinder shape, etc. Brush over with beaten white of egg diluted with water, and brown in a hot oven. Serve with tomato sauce, etc.

Warmed-over Potatoes.

Reheat cold boiled potatoes, cut in dice in white sauce or milk, cheese, parsley, pieces of diced meat, pimento, hard cooked egg, diced vegetables, etc., may be added having a layer of potatoes, then sprinkled with the cheese, or meat, etc., cover with white sauce or small amount of milk and sprinkle with drippings, brown in oven.

Cooked potatoes when cubed can be used in salad, stew, when mashed, in soup.

HAVE A SANE THANGSGIVING.

Find something bigger and better to do on Thanksgiving Day than to eat excessively which always results in stupid dullness, headaches, etc. Let your Thanksgiving Day be a stimulus to better work and not a day of over loading the body and causing auto intoxication, or mild poisoning, the effects of which it takes days to work off.

Think of the waste it will mean if each family serves even as elaborately as usual. Let us not even for one day forget our duty to our nation in food conservation. If Thanksgiving Day ever meant anything to America, and particularly to the people of Utah, it ought to this year. Consider the wealth of harvests we are reaping, compare our situations with those of the majority of the people of the world. Make your Thanksgiving a sensible one. Do something worth while. Read a good book. Attend a good play. Do a service for some one who is less fortunate than yourself, and bring joy to those you meet by your happy cheerful countenance. Make your Thanksgiving dinner a representative dinner for conservation. Have it nourishing, appetizing, daintily served, but economical. Let your service be as much as possible of what you have produced at your home. There will be a pleasure for the housewife in preparing it and a pride and joy to the family in realizing it was home produced and prepared.

Suggestive Menus.

I.

Clear Tomato Soup
Roast Turkey Potatoes Mashed
Cold Slaw Brown Gravy Apple Jelly
Rye Bread Creamed Onions
Squash Pie

II.

Fruit Cocktail Chicken Pie
Baked Potatoes Green Peas
Squash Celery Salad
Crackers Hard Sauce
Carrot Pudding

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Clean up around the home, barn and stock yards before the fall rains and winter storms come.

In the dairy business there are two important factors—the man and the cow—the workman and the machine. Both must work for each other.

USE MORE MILK.

Under present conditions milk is one of our cheapest foods and its production and use should be encouraged. A quart of milk will furnish as much food as four-fifth of a pound of beef or as much as eight eggs.

Because of its food value no milk should be wasted. Young and growing children should be provided with all they need.

We need to encourage a greater production of milk and it will help to conserve other foods that we can ship to our Allies.

WILL NOT LOWER HOG PRICES

Some one sent out the report that a cut of ten dollars a hundred was to be made in the price of hogs by the Food Administration, this they deny. Mr. Hoover has this to say about helping livestock producers.

"Chicago advices are absolutely untrue and do not represent opinion or proposed action of food administration, which will take no steps to jeopardize livestock producers' interests. All of our powers will be used to keep prices at which allied and governmental purchases are made on a plan that gives assured return of cost and profit to producers of meat animals. In our opinion, best market obtainable for the present corn crop of country will be through livestock.

"We need increased production of beef and pork. The only way to secure this interest will be by a profit on production."

OUR HAY CROP

Utah and Southern Idaho have produced a wonderful crop of alfalfa and other kinds of hay this year. The greatest care should be taken of it for the hay in many of the other states is very short and buyers are already in the market for our surplus.

Use to the very best advantage the hay and all kind of feed you have so that you can have some to sell and help feed the livestock that will need the surplus we have. Use what we call waste feed such as pastureing of fields where crops has been taken off. Silo some of your beet tops, use any feed that will help you to save good alfalfa for shipment. We have plenty of hay, but there is a shortage in other states.

ELIMINATE POOR COWS.

With the high cost of feed and help, it is necessary to eliminate the poor cows, the cows that do not produce enough milk to pay for their feed and care. You may know the best producing cows, but do you know the poorest cows? Efficiency is as much a necessity on the farm as in the factory.

The day of guessing is past. Modern methods permit us to know. A cow that will not make you a profit should be fattened and sold. The farmer can not afford to run his business without keeping records—knowing the cost and profit.

Keep a record of your cows, weight the milk, test it, and eliminate the poor unprofitable cow.

IT PAYS TO BE CLEAN.

Begin early to teach the child cleanliness. It is an attitude of mind that soon becomes second nature.

Deal with him gently. Each child must be treated in accordance with his own nature. In his mind there are just two classes of sensations —pleasant and unpleasant.

The master passion in children is imitation. Set them the right example in the right way and they will be eager to follow it.

Self-defense is the first law of life. Do not frighten the child. He loves to act, but hates to be acted upon. Suggestion is far better than coercion.

Cleanliness must be a growth, not a revolution. Self-respect comes with it. A child basks in appreciation; compliment him on his efforts.

The rational, consistent care of health is a fundamental duty, and a clean body is the first step in that direction.

KEEP THE TRACTOR GOING

The scarcity of labor and farm help is only another reason why the tractor should be kept busy this fall.

Every man who owns a tractor should keep it busy after he has done his own fall plowing, your neighbor will be glad to pay you a fair price to do his work.

It is a patriotic duty to help increase production by helping your neighbor farmer do his work if you have the equipment with which to do it. One man, who was enthusiastic over this matter, said the tractors should be kept going day and night. This may not be practical, but we should at least keep them going this fall, to do as much plowing as possible.

Another thing you have an investment of money that should bring you some returns. The way to do this is keep it going—make it earn money for you and help your neighbor, and, at the same time, do a patriotic service by helping to increase the food supply.

SUCCESS OF FARM BUREAUS

Whether the local farm bureaus are to succeed or not depends in a large measure upon the officers selected. The duties of these officers are public and they must understand the needs of the community in which they live. They must know how to enthuse others, how to interest all factions and ages, how to be leaders without "bossing." They must be able to make every member of the bureau active and make each and every farmer believe that upon them rests the future success of the organization. They should know how to divide the responsibility and work so that every member takes part.

A wise selection of officers not alone the president and secretary but each one is essential to the bureau. Farmers should choose their officers and committee men because of their fitness for the task of leadership. New organizations are being formed all the time and we offer these suggestions with the hope of making the farm bureaus permanent and successful.

MAY SURPRISE YOU.

If you would keep a strict account of your farm labor you might be surprised at the returns some of your crops bring you.

The reports of a farmer who kept a careful accrute account of where and how his labor was spent, showed that some crop and livestock gave a good profit, while others showed a loss. His farm as a whole showed a profit but it cost too much to produce some crops on his farm.

Carefully recorded facts in farm bookkeeping or records may upset some of our opinions in regard to cost of crop production. Too many farmers base their farming operations on "what we think we know." It is far better to be sure of what we know, and then govern our management accordingly. This cannot be accomplished by mere guesswork. It requires facts and accurate figures.

More and careful records should be kept and it would surprise you as to the cost of each farm crop. Such information would help you to select the more profitable crops for your farm and help to increase your bank account.

HOW TO INCREASE YOUR PRODUCTION.

There is nothing of greater importance in connection with the production of crops than the use of good seed and yet this is one phase of the program that is most apt to be slighted. Most farmers exhibit a tendency to practice false economy when it comes to the matter of seed selection. If the seeds planted are faulty or of poor variety the yield will be unsatisfactory, no matter how well the soil is prepared or the crop is cultivated. It costs just as much to cultivate a field planted to a poor variety as to a good one. Even though you may have a perfect stand of a poor variety, your yield will be according to the kind of seed you planted. A poor variety of wheat may yield 15 to 20 bushels per acre, while a good variety 50 to 75 bushels. And the same is true of other crops.

Every farmer who has investigated the subject knows that it pays to get the best seed available even if he has to give a premium for it. The use of better seed and of varieties suited to the conditions where they are to be used would do much to increase crop yields.

FOR THE MANY

It would be true, even though the Scriptures had not said it, that "no man liveth unto himself." And if there is any difference of degree the saying is more generally true now than when first written nearly 20 centuries ago.

Strip our lives of the part others have in them and there would be little left. The age is infinitely complex and the activities of the individual infinitely diverse. So intermingled are the activities of people that no man can put his finger on a portion of the world's doings and say, "This is my life, mine alone," and on other portions and say, "This is yours," and "This yours." "This is yours," and "This yours."

We live partly the lives of others, and they, of course, live a part of our lives. Of necessity, if we do anything, others enjoy it partly; and a portion of all the good others do is ours. Our modern social and economic interwoven fabric makes this a principle of life.

But we can enlarge on the principle. By adopting it as a basis of living we can somewhat overcome the canker of selfishness and yet more effectively serve every reasonably selfish end. The enlarged principle displaces the motive "For me" with the broader motive "For the many," and a condition that was merely incidental before is now an active force.

This leads to co-operation. People can co-operate only when they are willing for others to enjoy some of the fruits of their labor. But they must be more than passively willing. They must do, knowing that others will profit, even anxious that others may profit. For when the whole community is living for the many, how great must be the benefit of the individual.

After all, he serves self best who serves others most.

The College at the Fair

By M. C. Merrill, U. A. C.

Filled to the ceiling and overflowing at the doors and windows the Utah Agricultural College building on the State Fair grounds bore striking evidence that the College was at the Fair, and was there abundantly. And she was there with a message too, which was the impressive part about it. Not for pure advertisement in order to attract attention unto herself and to fill her halls with students was she there but she went because she had an important message to deliver to the people, and like Joan of Arc the force prompting her activities was irresistible. This fact was apparent from the first moment the building came into view with its neat and attractive placard "Production and Conservation Exhibits" until the whole exhibit had been surveyed and studied in every detail. While the building was filled to capacity yet the exhibits were so artistically arranged and grouped that there were no symptons of stuffiness or disorder in any quarter.

On approaching the open door one's attention was so invitingly drawn to the attractive display of grains and grasses, charts and pictures, labor saving devices, flowers, fruits, vegetables, and neatly made dresses and furniture that the desire to enter was immediately put into action. And there the wonderful story of this remarkable year unfolded itself. To produce more, to waste nothing, and to utilize the articles of food and clothing hitherto discarded were emphasized on every hand.

The interior of the building was very artistically decorated with flags and bunting, grains and grasses and aspargus tops with their red berries, all of which made an excellent setting for the pictorial story of the message. One of the first objects inviting study was a pyramid display of charts and illustrations on food values. It showed in an attractive fashion the waste involved in ordering groceries by phone. The food required for people of different ages and in different occupations was also given. Around the base of the pyramid portions of food of various kinds in one hundred calorie amounts were displayed in order to show in a concrete form the energy values of the food we eat. The Home Economics workers had an elegant display of the products of mother earth from different counties which had been carefully bottled by approved methods. This work had been under the direction of the home demonstrators in the several counties. There was a kitchen booth adjoining in which lectures and demonstrations were given hourly by specialists throughout the week to the throngs of interested listeners.

Along one whole side of one of the rooms were exhibited various types of dryers, trays, mechanical devices for preparing fruit for drying, paper bags, boxes, and bags suitable as containers for dried products, and a home-made sulfuring cabinet with directions for its use. An especially interesting feature was the display of dried fruits and vegetables which had been treated and cured by different methods at the Utah Experiment Station, showing results of a striking nature.

In the larger of the two rooms there were splendidly shown different types of cellars and methods of storing vegetables that attracted a great deal of attention. The fact that vegetables might be stored in sand evoked much comment. A considerable number of containers for eggs suitable for shipping by parcel post and the best methods of packing were worthy of study. A model silo and the method of constructing it emphasized the importance of this work, especially in view of the fact that over one hundred silos were constructed in the state last year.

An elegant assortment of high class furniture made by the students of the U. A. C. occupied the space in one corner and end of the room which was banked with palms, ferns, and flowering plants so effectively as to make a very pleasant and inviting cozy corner where the tired visitors could sit and chat and enjoy themselves in a social way.

In the center of the large room were two square stands artistically decorated with charts, maps, photos, placards, and plants, on one of which the various phases of crop production and conservation were shown and the other was used to emphasize the need of animal production.

The partition wall contained a large map showing very graphically the entire scheme of organization of the College and the relation of the numerous departments to each other and to the general plan. Underneath this was a patriotic demonstration bordered by the national colors showing the armies of the Utah Agricultural College. It was graphically shown that during her 27 years, the U. A. C. has trained an army of 25,211 men and women in the arts of peace and has given military training to an army of 5,000 men who are thus prepared for service in the defense of the rights of our country.

The livest exhibit in the building was the cackling hens. Every boy and girl was especially interested in the coops where life and animation were in evidence. Of the two coops shown, one contained mongrel chickens of low degree which are "kept" on so many farms, while the other showed pure breds of high degree which eat no more than common chickens yet which produce many fold more eggs. Hence these chickens help to keep the owner instead of having the owner keep them at a loss.

The women folks were keenly interested in the extensive display of dresses, coats, hats, boys' clothes, and other useful articles of clothing that had been made over by the girls of the Domestic Arts department. Most of these articles looked as good as new and one would hardly suspect that the material had ever been used before. This is one of the war-time economies that appeals directly and powerfully to the heads of families with their increased financial burdens.

Set up in one corner of the room was an ingenious illustrati n of a drainage system in operation. In this connection attention was forcefully called to the importance of draining our water-logged lands in order to increase the areas of profitable crop production.

Not for a moment should one forget the boys and girls clubwork carried on under the direction of the Agricultural College. A large space in one end of the Horticultural building was used for the exhibits by the boys and girls of the State. And wonderful exhibits they were, too. You should have seen the products raised and the articles made by those boys and girls and then you would have understood the proud look upon their faces. About 50 club boys and 30 club girls had the time of thier lives camping on the State Fair grounds during the week. They were comfortably housed in large tents under the supervision of their leaders who looked after their welfare.

After it is all over for another year, we can now take time to reflect at leisure upon the message so effectively delivered by the College to the people of Utah, and let us hope that message will find a hearty response in our methods and practices for the coming year, when we must make even greater efforts to produce and conserve than ever before.

NO HELP THERE

The school teacher had punished Tommy so often for talking during school, and the punishments had been apparently without effect, that, as a last resort, she decided to notify Tommy's father of his son's fault. So, following the deportment mark on his next report were these words:

"Tommy talks a great deal."

In due time the report was returned with his father's signature, and under it was written:

"You ought to hear his mother."

Buy your next year's Implements Now!

In the last few months steel has doubled in cost. As a result a new scale of prices for all farm implements will soon go into effect. The new prices will be from 25% to 40% higher than present prices.

Our stock of Emerson plows and harrows and Hoosier drills is complete. We are still selling them at prices based on last year's cost of steel. Today $100 will go as far as $130 or $140 will go in two or three months.

Buy now the implements you are going to need next spring, and save money.

Buy here and get the benefit of our long experience as implement dealers and our unqualified guarantee.

Miller-Cahoon Co.

Murray Idaho Falls

MOBILIZING FOR THE WAR

Your Uncle Sam is getting ready to fight.

All over the country, hundreds of thousands of artisans are busy with war preparations. Great warships are sliding off the ways; navy yards and arsenals are working night and day; great mobilization camps are springing up as if by magic; everywhere the vast resources of the Nation are being gathered together for war.

All over the Bell telephone system, thousands of employes are busily engaged in all branches of telephone activity, to keep pace with the extraordinary telephone needs of the Nation. Everywhere poles are being set and wires strung, central office equipment increased, new long distance lines constructed between important points and telephone facilities increased.

The greater and more varied the Government's war activies become, the greater will be the demands upon the Bell system for service. With the increased Government requirements, there will be greater demands for commercial service.

The scarcity of material and labor have set definite limits to the amount of new construction, and the needs of the individual must be subordinated to those of the Nation.

It is going to be harder to supply new telephones, extension telephones and to put up wire to new telephone stations, because of the vast amount of telephone equipment devoted to the service of the Government, and because the Bell organization has contributed heavily to the draft, and many of our technically trained men have voluntarily joined the colors.

When you use the telephone, we ask you to remember the patriotic service we are rendering the Government, the extraordinary conditions we are facing, and to help us maintain good service by a conservative use of your telephone and equipment.

MOUNTAIN STATES TELEPHONE and TELEGRAPH COMPANY

SAME SOUND

"Are you fond of grand opera?"

"Yes," replied Mr. Cumrox. 'Next to the cheering at a ball game the noise a good chorus can make is about the most inspiring thing I know of."

HOME

APPLES FOR HEALTH

There is no one portable piece of refreshment, liquid or solid, that is quite as widely appreciated as an apple. Of but trifling value as a solid food, that is, as a heat and energy maker, as a digestive agent it is invaluable. It is more liquid than solid, being almost 85 per cent water. In planning our daily intake of water this fact should not be overlooked.

Although probably not one apple in one thousand is eaten with ceremony and convention, this single one may be part of some refined combination that is as good in a great dinner as the apple "au naturel" is in a humble snack at the lunch counter.

Our sour apple is used more and more in the winter fruit salads because it is crisp and fresh to taste, and every salad needs these qualities, though made in part of preserved fruits, which are soft and sweet. And, besides this, if we wish to be a miser with our oil, the apple in the salad may make unnecessary the vinegar or lemon juice of the dressing, as in the following:

Fruit Salad Recipe.

Pare quarter, and core one Jonathan apple, or one of equally good flavor. Cut each quarter into many thin slices without letting them fall apart, until the whole is cut, by using knife horizontally. Then cut across these, making many small flakes. Sprinkle the apple lightly with powdered sugar and cut up with it two preserved pears. For each cup of fruit allow a small teaspoon of olive oil, mixing thoroughly. Serve on a lettuce leaf, and garnish with bits of ripe olive. Instead of the oil, whipped cream may be used for a daintier meal without meat. Or the mixture may be served, without any addition, as a fruit ambrosia.

Scalloped Apples.

One stale loaf of bread, one quart of apples sliced thin, one-fourth of a cup of butter, one-half cup of sugar, one teaspoonful of cinnamon. Crumb the bread, melt the butter, and put in the bread. Butter a bake pan or dish, put in a layer of the bread crumbs, then half of the apples, mix sugar and cinnamon, and sprinkle over apples. Put another layer of crumbs and the other half of apples, put crumbs on top. Bake in moderate oven for forty minutes. Cover during first part of baking.

Apple Cake.

Into one quart of flour put two teaspoonfuls of baking powder, one tablesponful of sugar, a little salt, and sift. Add one tablespoonful of lard or butter and enough milk or cold water to make a dough that can be handled without sticking.

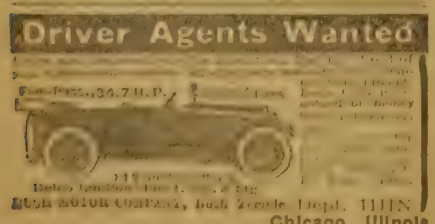
Roll out one-half incn thick. Peel, core, and cut apples in eighths and stick in the dough closely together. Sprinkle with cinnamon and sugar, and bake until apples are soft.

If preferred a custard made with one egg and tablespoonful of sugar and one cup of milk may be poured over it just before putting in the oven.

Apple Dumplings.

Biscuit dough, apples, sugar, flour. Make a fairly rich biscuit dough. Pare and slice some rather tart apples. Roll the dough to the thickness of half an inch. Cover with the sliced apples and roll up like a jelly cake. Cut off in slices about ¾ inch thick and place in a baking pan. (Not too close together.)

Mix in a saucepan one cup sugar and one large tablespoon flour. To this add gradually one pint boiling water and cook until clear stirring constantly. Dip this sauce flavored to taste over the dumpling and place in oven or steam cooker and cook rather more than half an hour. If cooked in a steam cooker place in oven to brown slightly.



GRAPE JELLY AND JUICE

If you are fortunate enough to get grapes just before they are ripe, you will have them at their best for jelly-making. Sometimes half-ripe grapes are brought to the markets and sold for that purpose at 10 cents a quart. Even at that price the jelly need not be so expensive because one may combine with the grapes apple parings and two or three small apples. In this way more jelly may be made without spoiling the grape flavor. Wild grapes are especially fine as they have a "tang" that makes the jelly very nice to serve with sliced cold meats, particularly lamb or veal.

Grape juice is such a delicious beverage when properly made that every housewife would do well to make it one of the essential articles for her fruit closet; for it is both a tonic and a food, and may be served plain, hot or cold, or diluted with one-third water Concord grapes are usually cheap and plentiful. They are juicy, too, and for that reason are valuable. The following recipe for the making of grape juice has been proved good:

Wash grapes in colander and pick from stems. Put fruit in granite or porcelain-lined kettle and add one cup of water to each quart of grapes. Heat slowly, mash fruit lightly and cook gently for 20 or 30 minutes. Drain through a double cheesecloth laid over a colander on a large bowl or crock. Twist cheescloth lightly to get all the juice. Put juice in the preserving kettle and let come to the boiling point; then draw kettle from the fire to skim. Do this twice, then add sugar in the proportions of one-half cup to each quart of juice. When the sugar has dissolved, which will take about five minutes, skim carefully and pour into hot sterilized jars or bottles and seal.

The finest grape juice that I ever had was made from a grape called Ives Seedling.

I used one cup of water to four quarts of grapes. Just enough to get the grapes started cooking. Then I proceeded as above, except that no sugar was added. The grape juice was sealed in bottles with rubber fasteners and was just sweet enough for a mildly acid drink. It had a delightful flavor.

GRANDMOTHER'S HERB GARDEN

Many of us can remember the dainty little sachet bags, sweet-smelling rose jars, medical herbs for the sick room and savory herbs for soups and use in the kitchen that grandma used in her time.

Next spring you should grow some of these in your garden and the following suggestions are offered:

Herbs delight in a light, rich, mellow soil. The ground should be prepared carefully. First, incorporate some manure with the soil. Then, above all else, see that it is friable. Sow the seed as early in the spring as possible. Plant in shallow rows about one foot apart and carefully label each variety. Do not cover these seeds too deeply. They will not germinate unless exposed to the influence of moisture, air, light and heat.

After sowing the seed keep the bed damp, but not too wet. When you water use a very fine sprinkler in the watering can. A coarse or heavy sprinkler will wash the life out of delicate little seedlings. After these young sprouts begin to show above the surface be careful not to water them too often; just enough to keep them moderately damp and no more. The first leaves are generally the supporters of the life of the young plant until it has formed roots, and if these are injured the young plants will die. When they have attained the height of a few inches they will require to be thinned out. This is necessary to make room for individual development.

The lavender flower is such an old friend it requires description. How we enjoy opening a linen drawer in which a tiny bag of this dried blossom has been placed. It retains its odor almost indefinitely. This little plant is a perennial, but in this latitude must have some winter protection.

Coriander is also an attractive plant, having aromatic seeds.

Sweet basil is especially good in the preparation of soups. We are all familiar with the caraway plant, the seeds of which are used so much in bread and cake baking.

Chive is a very useful herb. In taste it resembles the onion, and is an indefatigable grower. No matter how often we cut the tops, in a few days it sends up more shoots. Sweet fennel is another herb used for flavoring sauces.

No matter what else our grandmother had in her garden, she never was without a generous supply of horehound, which is just as useful in making homemade cough syrups now as it was one hundred years ago.

Peppermint is another useful plant.

Rosemary is a quaint little plant well worthy of a prominent place in any herb garden, and suggestive of the past.

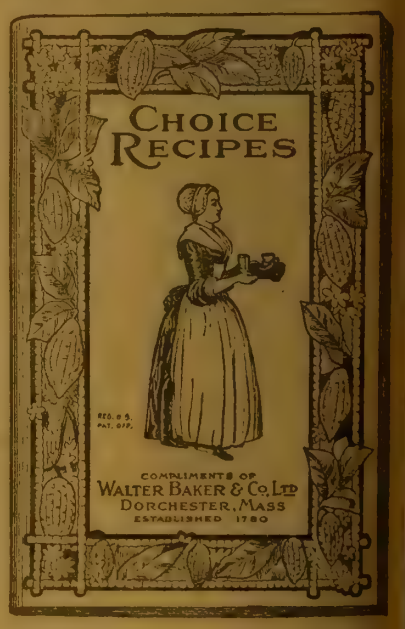
Sage is also a most useful herb in the kitchen. The texture and color of its foliage are beautiful.

Sweet majoram is useful the entire year. In summer we use the fresh leaves and in winter the dried ones.

Thyme is a welcome addition to our garden. It is very attractive to bees and is, of course, used in many ways in the kitchen.

All these herbs require to be cut at just the right time. Not one day before or one day after. This time, according to our grandmothers' direction, was "on a dry day just before they come into full bloom." Then to follow out her directions, on which we cannot improve, they must be tied in bunches and hung up, or spread thinly on a floor on clean pieces o

SENT FREE



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white paper, where they will soon dry. Once they are dried they are ready for use.

Such a garden will surely prove a treasure trove to its owner.

THE GARBAGE MENACE.

M. M. Carrick.

The pig-pen is, no doubt, a valuable institution in some parts of the country, as it is considered the only means for garbage disposal. But some of us who have an especial liking for ham and bacon have an aversion to the idea of swine being used as garbage receptacles, though we are compelled to admit that hogs do have a knack of converting all manner of unsavory things into excellent pork.

It does seem, however, that even in the country a system of garbage disposal could be easily devised which would eliminate the pig-pen idea, and at the same time prevent the throwing of waste food on the ground in the neighborhood of the house. From a sanitary standpoint nothing could be worse than this careless habit. Garbage is not only unsightly, but it soon decays in the open air, causing unpleasant odors that attract flies. These insects in turn transmit infection to the household.

As an example of this, a typhoid fever patient was invited to spend her convalescence with a friend in a beautiful country spot. As the invalid rode from the station through the pine forest leading to the farm, she began to inhale long whiffs of pure mountain air, and as she expressed it, "to take on a new lease of life."

When she caught a glimpse of the quaint old farmhouse on the edge of a lake encircled by pines she exclaimed that she felt as near to Paradise as she ever hoped to get.

It was not many days, however, before the patient had a relapse, and she was in such a serious condition that a city physician was summoned without further delay. Meantime, the entire family marveled at the strange case, for how could there be a recurrence of the illness in such ideal surroundings?

When the doctor arrived, he took one look at the patient and shook his head. He then walked straight through the house and out of the back door, the family wondering what was going to happen. On the back porch he paused. His nostrils dilated. Sure enough, the ground was fairly putrid with the waste water from the kitchen sink—dish water, laundry tub water and slops of all sorts that found their way out of the trough behind the sink. Not more than 50 feet away was the well, and half way between the house and the well was a pile of decaying garbage that made the otherwise pure air foul, and which was the trysting place of millions of flies that were buzzing around and gorging themselves in preparation for their deadly work.

Of course this was not your place, Mr. Farmer.

But—why not keep wet garbage and waste food in separate retainers? Ashes should be kept by themselves. Water-tight cans are the best receptacles for all refuse. Ashes, of course are not seriously objectionable, as they can be used for walks and roadways.

Any farm community should be able to afford a rock pile crematory. This is constructed so liquids filter down between the stones, while solids are retained on the surface. The contents are easily burned.

Combustible trash about the farm can at least be burned, and wet garbage carried off and dumped remote from the dwelling. Anything short of this is criminal negligence.

POTATO STORAGE CELLARS

Pleasant, Grove.

Utah Farmer:

The majority of farmers in this neighborhood at least, have been storing diseased potatoes in their cellars. Is it advisable to fumigate or spray our potato cellars, and if so, please tell us how to do it?

Respectfully,
Joseph Larsen.

Answered by Dr. Geo. R. Hill, Jr.

Cellars in which potatoes are to be stored should be cleaned out every year. There is usually some dry-rot fungus in potato cellars and the spores from the organism causing this disease live over on the sides of the cellar and in the dirt at the bottom and they increase the chances very greatly of the potatoes rotting, if the cellar is not thoroughly cleaned and sterilized. After the cellar is cleaned, it can be sprayed with either a solution of formalin in water at the rate of one pint to 30 gallons ,or with corrosive sublimate at the rate of one part to 1,000 parts of water or 4 ounces in 30 gallons of water. It usually pays to clean and disinfect cellars in which potatoes and other vegetables are to be stored.

WHY FALL PLOWING PAYS—SAVES TIME AND MOISTURE

(Continued from page 1)

dition may result on soils that bake as they dry. Certain soils are nearly "bone-dry" for two or three inches and nearly as compact as brick by the time the soil in the seventh and eighth inches is dry enough to plow. This crust does not readily dampen and become compact against the bottom of the plow furrow. Often considerable disking is necessary to make a seedbed on such soils. Fortunately, there are but relatively small areas of such soils.

Other Advantages.

Cloddy soils are mellowed by frost action if left rough throughout the winter. Fall-plowing exposes these clods to the weather. Accompanying this mellowing comes also the liberation of plant food not only from the mineral particles but also from the organic matter of the soil. Alternate freezing and thawing, crumbles the clods and renders soluble a part of the mineral in soil particles.

By no means unimportant are the effects of aeration. Soils need ventilation. Air is needed by the helpful bacteria and oxygen is brought in contact with the soil particles. No other element exercises so great a solvent action on substances than does oxygen.

Finally—and perhaps of even greater value in infested soils—insects and plant diseases are exposed to frost by plowing before winter sets in. Most insects are injured, and some controlled, by fall-plowing. None are aided. Plant diseases are probably likewise killed by exposure to frost.

Drawbacks to Fall-plowing.

There are two drawbacks to plowing in autumn. (1) Weeds may get started before seed time. The disk or the springtooth harrow will account for these unless they are allowed to get large. (2) The other drawback lies in that much of our land is rather dry in the fall, because of which it is difficult to plow. Disking as soon as the crop is removed greatly lessens this trouble by mulching the surface. This maintains a loose soil, damp enough to plow readily at any time before frost sets in.

Summary.

Fall-plowing first of all saves time by permitting earlier seeding and by utilizing cheaper labor. It also preserves moisture in several ways, thereby increasing the chances for a good crop stand and for a better development in early growth. Decomposition of plant refuse, which is encouraged by fall-plowing, is vital in saving water and in keeping the soil in a moderately loose condition. Besides these two major advantages of fall-plowing, cloddy soils are mellowed, plant food is rendered available, and insects and plant diseases exposed to frost action. Set against these advantages are greater draft in plowing and the likelihood of more weeds. Wide-awake farmers easily avoid these drawbacks by timely disking.

AFTER GASOLINE

Walking Motorist—"Why in thunder do they put their blinkety blank milestones so far apart?"

The Best Family Dessert

is fresh bottled fruit, served from mother's abundant supply. It is nourishing and appetizing. Preserved with pure beet sugar, it supplies the energy food so necessary for growing children and fatigued workers.

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EXTRA FINE
Table and Preserving Sugar
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because of its uniform quality and sweetness. For convenience and economy, she always buys it by the bag.

At all dealers in 10, 25, 50 and 100 pound bags.

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Buy Good Rubber Footwear for Your Growing Boys

They are anxious to do a man's work. Give their feet the comfort and protection a worker's feet ought to have.

Get them "Ball-Band" Rubber Footwear. Vacuum cured, practically one solid piece. It keeps their feet warm and dry and gives the greatest number of days wear at the lowest cost per days wear.

Worn by nine and one-half million people. Sold by 55,000 dealers. These are big figures, but they are true. Quality made this possible. Look for the Red Ball Trade Mark and be sure you are getting the genuine "Ball-Band."

Write for Free Booklet, "More Days Wear"

It describes the different kinds of "Ball-Band" Rubber Footwear and shows pictures of it.

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Safest lamp in the world—Absolutely no danger of fire or explosion. Fuel can't spill—no danger if tipped over. No wicks to trim—No globes to wash. No dirt, grease, smoke or soot.

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Success invites imitations. Be careful, therefore to get the genuine Coleman Quick-Lite Lamps and Lanterns. If your dealer can't supply you write direct to nearest office for Catalog No. 70

COLEMAN LAMP CO.
WICHITA, ST. PAUL, TOLEDO, DALLAS, CHICAGO.

Government Wants Farmers To Grow More Sugar Beets

The Food Administration feel very kindly to our farmers for the spirit of co-opreation they are showing. When the State Farm Bureau was in session a few weeks ago at Salt Lake City, State Food Administrator W. W. Armstrong, telegraphed to Washington as follows:

"Ten thousand farmers, represented by the State Farm Bureau of Utah, promise to supply beet-sugar factories to the limit of their capacity next year.

"All differences between sugar refiners and farmers have been forgotten, and a contract on a profit-sharing basis agreed upon."

Mr. Hoover telegraphed in answer to this as follows:

"Splendid action of farmers of Utah is very much appreciated. Such action is particularly gratifying and greatly fortifies me in the work I am undertaking."

For some time a warning has been given out in regard to what might be a serious sugar shortage.

This shortage is now very acute in the Eastern and North Eastern States.

The seriousness of the sugar situation the last few days has again brought the subject to the front, and in a recent telegram received by the food administration of Utah, from Herbert Hoover, our farmers are again urged to come to the aid of the country by increasing the acreage of sugar beets.

Mr. Hoover's telegram to the local administration agents is as follows:

"One of the most vital problems confronting this nation is that of procuring sufficient sugar to meet the requirements of our people and of the allied nations fighting our common battle. The production of cane sugar in this hemisphere can and will be increased to a limited degree, but we must rely upon the farmers in sugar-beet producing sections of the country for a part of the needed supply.

"Therefore, earnestly appeal to every farmer so situated to come to this country's aid in this hour of need. Without the co-operation of the American beet grower, our task will be very difficult and our ability to respond to the calls to be made upon us for this very essential commodity will be curtailed. It is at least the duty of every beet grower to maintain in 1918 his normal acreage of sugar beets.

"It is his privilege to increase that acreage to the extent that a well balanced production of crops will permit and in this matter effectively demonstrate his patriotism."

France is asking for double the amount of sugar we are able to send her.

They have been existing on the most meager supply, and for patriotic reasons the food administration diverted to the greater need of an ally the Cuban crop from our own shores, despite the need here. The loss fell on the Atlantic states principally. The sacrifice was cheerfully made, and hope was transferred to the beet sugar crop. Here came disappaintment, too, for adverse weather held back the crop three or four weeks and brought about the present critical situation.

We are very fortunate in Utah for the reason we have so many sugar factories, otherwise we might be like our eastern friends only able to buy a pound, or two pounds at the most, at a time.

Under present conditions if the price of sugar was not under government control it would be double what it is being sold for today.

To help relieve this world shortage of sugar our farmers are asked to increase the production of sugar beets. This is one way we can do our "bit" in the fight for liberty and democracy.

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SELECT YOUR BEAN SEED THIS FALL

There are two serious bean diseases which attack bean pods and which are carried over from one year to the next within the bean seeds themselves.

One of these is "bean anthracnose," causes sunken brown spots which vary up to one-half inch in diameter. In these spots, slimy masses of pinkish spores appear if weather conditions are favorable for their development. Beneath these spots the threads of the fungus may penetrate the seeds. When such seeds germinate and the beans are lifted above the soil, the fungus begins to grow again, thus forming sources of infection which may endanger the new crop.

The other disease is known as bacterial blight. When on the pods, the spots first appear as small water-soaked areas which soon turn slightly yellowish. Later, they take on a yellow, waxy appearance. These spots are irregular in outline. They do not usually become as large as the anthracnose spots described above. The bacteria causing bacterial blight often penetrate the seeds that are beneath the spots on the pods and if severe, may cause yellow waxy areas on the seeds. Such seeds may germinate and become sources of infection for the new crop.

As the bean seeds having these diseases are not always readily detected or separated from the sound seed, and as a few diseased seedlings may endanger a whole crop by lowering both yield and quality, great care should be exercised in the selection of seed.

Avoid the introduction of these diseases into your community by selecting your own seed or by buying from a locality known to be free from these diseases. If either of these diseases is in your community, save seed from pods that are sound and ask your neighbor to do likewise, as insects may carry these organisms from one field to another. Spraying has not given satisfactory results and the usual methods of seed disinfection are of little value. Practice crop rotation.—M. A. Willis, Plant pathologist.

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REPAIR WORN MACHINERY

Scarcity of Implements Must Be Met by Putting Old Ones into Shape for Work.

The great outcry for farm production and the scarcity of machinery points to the need of some way to repair a great many implements that are now useless largely because of the neglect with which they have been treated, says the United States Department of Agriculture, which adds that the machinery manufacturers and their local sales agents should help to perform this repair service.

Throughout the country there are thousands of binders, mowers, and other farm machines rusting in the fence corners, and many of these might be made available for further valuable service. The manufacturers of farm machinery are admittedly unable to furnish all the new machines required and are paying for full-page advertisements to influence governmental authorities to insure them necessary raw materials and transportation in competition with the demand for machines of war.

The railroads of the country, according to one of their officials, are being compelled in the present emergency to rescue practically every scrap locomotive from the old-iron graveyards and rebuild them for active service. A similar plan should be adopted, says the department, for the reclamation of this cast-off farm equipment through the agency of central repair shops where the work could be done. Many of the machines might be made available for further service with repairs of comparatively small cost.

Added to the almost sinful carelessness of some farmers there has been the attitude on the part of farm machinery manufacturers in years past to favor the abandonment of worn and disabled machines in order to sell new ones; but now the time has arrived when it is difficult to supply the market with the necessary new machinery. The department suggests that representatives of the manufacturers, on the one hand, and of the farmers—such on the other hand, should get together to establish the necessary farm machinery repair stations in convenient localities.

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MICE DESTROY MUCH FOOD

H. H. Henderson, U. A. C.

Don't raise food for the housemouse, annually mice and rats destroy millions of dollars worth of food in Utah. In granaries, cellars, homes, the mouse annually takes an enormous toll of our food supplies. We cannot declare ourselves truly conservative as long as we let this waste go on. Not only is food eaten or spoiled, but disease is also carried by the filthy pest. While we do not have the dock rat to bother us, which carries the deadly bubonic plague, the common house mouse carries dangerous diseases. Tphoid fever is carried by the mouse as by the housefly.

This annual loss and danger from disease is unnecessary. The mouse is easily killed and no home or farm can excuse the presence of many rodents. Houses, stores, granaries, elevators should be mouse-proof. Traps , of which the common snap trap is best, furnish the best means of mouse eradication. Poisons are sure, but danger to children and to domesticated animals makes its use unwise in many cases.

Figures recently compiled by the United States Department of Agriculture show that, throughout this country, over $200,000,000 worth of foodstuffs is destroyed annually by mice and rats. Furthermore, the significant statement is made by the Department that "by spreading fatal diseases the rat has killed more people than bullets have.

Help Produce More Milk

Experiments have proven that dairy cows can be made to produce more milk by proper feeding. Nature does her part well, without aid, but when you follow scientific feeding she does her work even better.

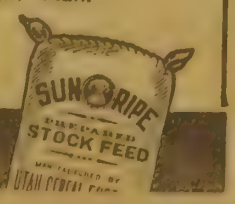
SUNRIPE

Stock Feed

is a scientifically balanced feed. It is composed of oats, barley, cotton seed meal and sugar beet molasses—in correct proportion. Order a supply and increase your milk production throughout the winter.

Utah Cereal Food Co.

Ogden, Utah.



For Your Auto

You can't use too good an oil for your auto. The better the oil, the longer and more dependable will be the service of your car.

VICO Motor Oil

—light, medium heavy—refined especially for automobiles operated in this western country. Every drop counts.

Utah Oil Refining Co.

SALT LAKE CITY

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

Better anticipate your requirments now.

Cotton Seed Cake—Corn
Sunripe Stock Food—Hay

BROWN BROKERAGE CO.
Ogden, Utah.

THE STORAGE OF POTATOES

By Lou D. Sweet.

It is of great importance that all the potatoes raised this year should be stored under proper conditions. Even when every precaution is taken the wastage of potatoes during the winter is considerable; under bad conditions of storage it is very great indeed.

In order that the best method may be adopted by the small growers those who have not had the experience in the storage of potatoes, should know the chief causes of the wastage. These causes are:

1. SWEATING, HEATING AND CONSEQUENT ROT: often due to insufficient ventilation.
2. ROTTING: due to the potatoes getting wet at the time of putting them in storage.
3. INJURY FROM FROST.
4. DECAY: owing to disease in the tubers at the time of storage.
5. SPROUTING OF TUBERS IN THE SPRING.

It is not possible to prevent altogether losses from these causes, but by using the best methods of storage, it is possible to reduce them very materially.

This may be done by taking care to guard against losses from each of these causes:

1. SWEATING AND HEATING occur if the freshly dug potatoes are piled in too large piles, so that the air cannot circulate between the tubers. The risk of loss from this cause is greatest in the fall, immediately after the tubers have been dug, and it is therefore, important that potatoes when dug should not be put in unnecessarily large piles, nor kept in all ill-ventilated room.

2. ROTTING FROM GETTING THE POTATOES WET. If the potatoes at the digging time are allowed to get wet and to go into storage in that condition, rotting is sure to occur. Be careful to have your potatoes dry before storing.

3. INJURY FROM FROST. Potatoes are easily damaged by frost. If they become frozen, there market value is destroyed. Therefore, take every precaution to protect the tubers from frost before and after digging.

4. DISEASE. There are several diseases of the potato which destroy the tuber, and if diseased tubers are mixed with the sound ones, the disease spreads rapidly; therefore, it is necessary to sort the potatoes carefully, eliimnating all of the disease, the cuts, culls, and dirt before placing them into permanent storage for the winter. All of the cuts, culls, misshape and diseased tubers should be fed to the poultry and livestock, but should be steamed or boiled before being fed, as in this way you increase the food value, and also destroy the germs of the disease, so that it will not get into the manure and thence into the land.

5. By proper ventilation of the cellar or storage room, and by holding the temperature as near 35 degrees F. as possible, you can keep the potatoes from sprouting.

SELECTION OF SEED. Seed for next year's planting should be selected from hills that produce all nice, true to type potatoes. These should be selected at the digging time, and stored separately in crates or boxes, and by storing them in a well-lighted room where the temperature can be held at from 34 to 40 degrees, with a little ventilation and this seed planted next Spring, the grower will make a start toward improving the quality of his potatoes, instead of as in the past, simply planting the culls or runouts.

BUY A TRACTOR TO FIT YOUR FARM

Alfred Jones.

The wise farmer will not buy a tractor because it is light or heavy, because it has two, three or four wheels, nor because it has any other mechanical feature which the salesman or advertisement claims makes it "better than the best."

The wise farmer will buy a tractor to exactly meet the requirements of his farm and one that will come within his means to buy and operate.

There are now on the market tractors to "fit" the small farm as well as the large; tractors which are economical enough to buy and operate so that even the eightyacre farmer will find them a profitable investment.

Such a tractor must be light, simple design for the sake of economy in first cost. It must do at least 75 per cent of the farm work which horses now do so you can eliminate at least that large a percent of your cost of maintaining horses and thus secure low "cost-per-acre-farmed."

Unless the tractor "fits" your farm it will not prove a profitable investment no matter how cleverly it be designed or how perfect in workmanship. But if the tractor you buy does fit your farm; if it does do a large percentage of the farm work that horses formerly did, it is bound to be not only a profitable investment but really a God-send in this critical period when the nation and the world needs more food stuffs so badly.

Such a tractor on the small farms of America will permit plowing earlier and deeper; thus conserving moisture which heretofore ran away and was wasted.

A tractor will free the farmer from dependence on horse flesh; will do all the work so much easier and quicker that much of the drudgery of farm work will be eliminated; and will double and treble farm profits by turning two or three furrows where one was turned before, by traveling across the field twice as fast and thus permitting one man and a tractor to do as much as several men with several horses did before.

The economies and the profit possibilities of a tractor which "fits" your farm are boundless, and it behooves every farmer to post himself on the different makes of tractors by writing for and carefully reading the literature which tractor manufacturers will gladly send upon request.

Keep the hens in laying trim. Their "shells" are valuable food ammunition.

TRY THIS ON HER

The Maid—"You don't expect me to ride with you in that old timer, do you?"

The Man (who has waited long)—"Well, this old bus was a brand new model when I arrived here."

SO JAKE KEPT HIS REMAINS

Harris Diskson in Collier's.

The superintent of transports put my name on the list and I continued to wait. Then, one night came the notification to report at a certain dock by noon the next day. Next morning, upon presenting my order for transportation, the dock officer shoved a slip of paper across his desk. -"Just fill that out, please."

It was a government blank with neat space for the name and address of a nearest relative. I glanced at the officer. "Sign it, please," he said.

It was no joke.

Several captains of artillery were seated around the table filling out and signing the same cheerful slips. They were keenly intelligent men and knew that the United States government was not doing this for fun. Yet they laughed and twited one another with the same take-things-as-they-come spirit which our American forces are carrying abroad. None of them balked like the Virginia negro who applied for a job at the Hopewell munitions plant.

A clerk was asking questions and writing down the negro s answers on a blank.

"What is your name?"

"Jake White, suh."

"Where do you live, Jake?"

"Valley o' Verginny, suh."

"Citizen of the United States?"

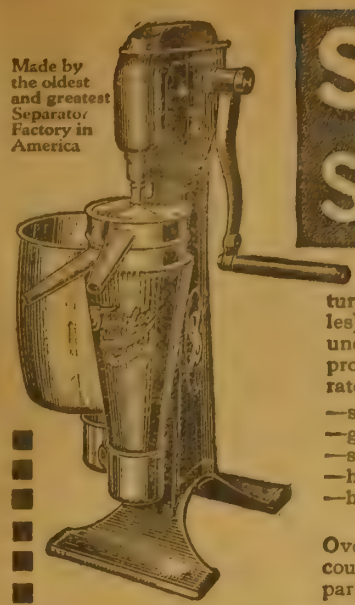
"Yas, suh."

"Where do you wish your remains sent?"

Jake leaned over the desk. "How is dat, boss."

"Where do you wish your remains sent?"

"I don't wish my remains sent nowhar. I'm fixin' to take my remains wid me, an' tote 'em out o' dis place right now." So Jake took his foot in hand and hit the big road.



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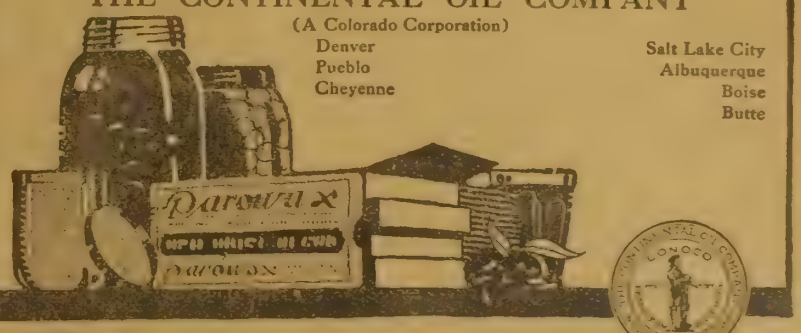

Parowax

LIVE STOCK

THE CARE OF THE WORK HORSE

By Thomas P. Cooper, Director, North Dakota Agricultural College.

The work horse is one of the most needed and valuable accessories to the average farm. The successful farmer realizes this, and on 99 out of 100 profitable farms good horses well kept and well cared for will be found. Normally the climate and air in North Dakota give high efficiency and a long life of usefulness to the work horse, All he needs to insure these qualities is a little care and proper feeding. On the average grain or mixed farm conditions are such that during a considerable part of the year the horses must work hard and long hours to make up for time lost. Obviously in order that a horse may retain his flesh and health during these busy seasons he must be especially well fed and cared for, while during the idle periods he may be fed much less and much more economically. While at hard work the important features of feed care are: First, regularity of feeding and watering; second, the use of good, clean, sound hay and grain; third, the use of collars and harness that fit properly; and fourth, a comfortable stall in which to sleep.

No feed has yet been found that will wholly take the place of good, clean, plump. hard oats as a grain for the work horse. A ration, however, a little cheaper than oats alone and one almost as satisfactory can frequently be made by substituting corn, barley, or bran for from one-fourth to one-third of the ration. While at hard work a horse should receive grain three times per day. The amount of grain to be fed will depend on the size of the horse and to some extent upon the quality and amount of hay fed. The ordinary horse of strong conformation and good digestive capacity will do well on from 1¼ to 1½ pounds of grain per 100 pounds of live weight per day; that is, a horse weighing 1,400 pounds should average from 17½ to 21 pounds of grain per day. The morning and noon feeds of grain should be somewhat heavier than the evening feed and the morning and noon feeds of hay must necessarily be somewhat lighter than the evening feed, since the horse ordinarily does not get time to eat a large amount of hay either in the morning or at noon before going to work. Where good sound timothy hay is used the average horse at hard work requires about the same amount of hay per day by weight as he does of grain. The heavy hay feed should be in the evening. For instance, a good method of dividing the feeds for the 1,400-pound horse would be as follows: Morning feed, 8 pounds grain, 5 pounds hay; noon feed, 8 pounds grain, 5 pounds hay; night feed, 5 pounds grain, 11 pounds hay.

While timothy hay is recognized as the one best roughage for the work horse, a good quality of upland prairie hay, redtop, clover, or alfalfa can be very satisfactorily substituted for it. The reason why timothy usually gives better satisfaction is because it is easier to cure and store and keep in good condition and free from dust than the other hay crops.

When at hard work and on full feed the horse should have at least one feed a week of a mild laxative nature, such as some boiled flax, boiled oats, boiled barley, or a warm bran mash. Also, on Sundays or on days when part of the horses may be idle, the grain for these should be reduced to three-fourths the regular amount in order to prevent the development of a case or two of azoturia. Watering is important. A horse that is thirsty should be watered before he is fed grain or hay, rather than after. The reason for this is that the stomach of the horse is comparatively small and if he eats a heavy feed of grain or hay, or both, and then drinks a large quantity of water a portion of the feed will be washed from the stomach into the intestines before it has been sufficiently acted upon by the digestive fluids of the stomach, and colic is likely to develop. The regular practice should be to water before feeding. Also the horse should be given plenty of time to drink.

Where salt is not mixed with the feed it should be before the horse at intervals of not more than a few days. Where it is mixed with the feed, about 1½ pounds should be used with each 100 pounds of grain.

The fitting of the harness and collar is a very important item to the efficiency of the horse. Sore necks are caused by a collar that is too short, by one that is too narrow at the neck, or too wide so that it works back and forth. Also the use of a harness without breeching on horses that are worked on implements with tongues requiring considerable backing, such as a drill or mowing machine, will cause sore necks. Sore shoulders may be caused by a collar that is either too long or too short or even if the collar is fairly well fitted but with hames that are too long. Some horses get sore shoulders on account of faulty conformation of the shoulder itself; for instance, an extremely straight shoulder is liable to throw collar boils or galls on the shoulder points because of the impossibility of properly distributing the pull on the full length of the shoulder. Properly fitting bridles are a great help in simplifying the driving, as also are the use of bits suited to the disposition and toughness of the mouth of the horse. Ordinarily a straight smooth bar bit is the most satisfactory kind to use, although most horses drive just as well with the simple snaffle bit.

Care in the adjustment of the hitches of doubletrees where three, four, or five horses are used in one team so that the pull is equalized is important, also the proper length of checks and connecting lines to avoid the jerking of one horse by another is important. Anyone who has driven horses knows how quickly the flesh disappears from a nervous, quickmoving animal when used with several slower ones and everything possible should be done to reduce this nervousness in horses. The proper time to develop the right disposition is when the young colt is being trained to drive. In starting young colts they should always be hitched with a horse that has a desirable disposition and a desirable speed at the walk.

If the work horses are properly cared for and fed in summer the wintering of them will be a simple matter, for they may be wintered largely on cheap rough feed, such as oats, straw, prairie hay and fodder. If low-grade roughages such as the above are used in winter it is sometimes necessary to use 4 or 5 pounds of grain per day in order to maintain them in good flesh. Idle horses should be turned out for exercise every day in winter except on the few stormy bitter cold days that are to be found in nearly every winter.

EARLY SPRING LITTERS

Dean E. J. Iddings.

Food Administrator Hoover reports a world's swine shortage of 32,500,000 head. The world's meat annual shortage is estimated at 115,000,000 head.

One of America's aims, therefore, should be to breed swine to meet the shortage mentioned. Furthermore, since edible animal products are most quickly produced by breeding of swine, as compared with cattle and sheep, pork and other hog products can be made to meet a part of the shortage in other animals.

If the Idaho farmer is to help in this direction, action must be taken soon. Hogs under our condition, may be finished for the market at seven to ten months of age. In order that the spring pig crop may be added to our meat supply within a year, the litters must be early. Furthermore, if housing facilities permit having early spring litters, the pigs get an early start, are big enough to make best possible use of spring and early summer, vigorous pasture growth and such pigs do much better during mid summer as compared with pigs farrowed nearest the hottest period of the year.

Sows should be bred, therefore, 112 to 114 days, approximately four months, prior to the date the pigs are wanted in the spring. In some sections of Idaho, this date should be early March and in other districts as late as mid April.

In this time, when efficiency counts heavily, only the pure bred boar of best possible individuality should be used. Pasture must be available for profitable pork production under present conditions and this should be considered in planning the farm crops for fall and spring so that alfalfa, clover, rape, kale, peas and oats, or other pastures, or a combination of some of some of the above, are provided for the sows and their litters in spring and for the pigs after weaning and near to the time of final finishing for market.

Some planning in advance along lines indicated, will not only be a valuable effort to meet the nation's needs but in addition will be found to mean greater profit to the man engaged in prok production.

WAR TIME CROP ROTATIONS

I. D. O'Donnell.

There seems to be an inclination among farmers to forget that there is such a thing as crop rotation and to produce the crops that at this time are bringing in the most money. The production of the staple crops most needed now is the right thing to do as long as the farmer does not "kill the goose that lays the golden egg." Soils have their limitations and the farmer must keep in mind the fact that he will have to keep right on producing food after the war is over. He should not throw his crop rotation plans so much out of gear that he will be unable to produce profitable crops under normal conditions in normal times. Crop rotation will permit substitution of one rop for another within certain limits, but if all the principles of crop rotation are disregarded for a time the soil suffers and in the end the farmer pays the bill.

So intent have some farmers been on growing wheat that the alfalfa acreage has fallen off in some sections, and the price of hay to stock feeders has gone up so high that feeders are discouraged. Such a condition works a disadvantage eventually to the farmer, the feeder, and the country at large.

So far as is pratcical, produce what the country needs now, but keep in mind that you will have to help feed the country next year and the next.

EUPHEMY

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City—"That's the swell name for a hand laundry."

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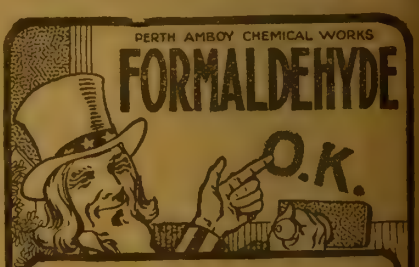

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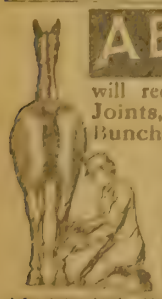

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POULTRY

POINTS TO CONSIDER IN CHOOSING A BREED

R. J. Axtell.

High-Class strain of almost any breed can be made profitable. Beginners should get birds whose breeding is known to be good.

Beginners are often at loss as to what variety of poultry to take up and are often confused by the mass of claims made by breeders in advertisements as to the merits of the different breeds, and in some cases they take up a breed that in marking, shape or color does not appeal to them. All tastes as to varieties are not alike, yet the claims made by some breeders have caused beginners to take up a breed because of its great producing power. When the would-be poultry-keeper realizes that there is no one best breed in the world and that all breeds have good qualities then there will be more to take up the fowls of their fancy.

No one breed possesses all the good qualities; most all of the popular breeds are good producers when properly handled, and that means they are moneymakers. Taking the country through from ocean to ocean, the Barred Plymouth Rocks still retain their popularity, and are perhaps the leaders in numbers. It is especially a favorite with the average farmer, and justly so, they being hardy, good growers and good egg producers of large brown eggs. That they have kept to the front all these years is due to good utility qualities. They are beautiful to look at and are among the largest classes at the poultry exhibits throughout the country. Cocks weigh nine and a half pounds, cockerels eight pounds, hens seven and a half pounds and pullets six pounds. These weights hold good for the White Buff, Silver-penciled, Partridge, and Columbian, and in these varieties the poultry-keeper can surely make a choice in color. For those who admire a fowl with curves, a breed that is one of the best layers of brown-shelled eggs, although not, as a rule, as deep in color as the Plymouth Rocks, the Wyandottes will fill the bill. They are hardy, quick growers, and when young make good broilers in the hands of progressive breeders and at the different laying contests they have proven to be good layers. At present the white Wyandotte is the most popular, and are shown in greater numbers at the poultry shows, although many are taking up the Silver, Golden, Buff, Black, Partridge, Silver-penciled or Columbian, all having good utility qualities. The weights are: Cock, eight and a half pounds; cockerels, seven and a half pounds, hen, six and a half pounds; pullet, five and a half pounds.

Rhode Island Reds is another breed that for a number of years has taken hold of the public fancy. They, too, have the same good utility qualities as is to be found in the Plymouth Rocks and Wyandottes; they are good growers, hardy yellow skin, marking them the ideal market fowl, for at present the yellow-skinned fowl is the one that will command the highest price in the best markets. They are good egg-producers, of brown-shelled medium fruit, make good mothers, yet are not hard to break of broodiness when the proper methods are used. In many sections they make the largest class in the poultry show. They are becoming great favorities. The weight for Rhode Island Reds are cock, eight pounds; cockerel, 7 and a half pounds, hen 6 and a half pounds, pullet 5 pounds.

In the Asiatic class can be found the light and dark Brahmas, Buff, Partridge, White and Black Cochins, and Black and White Leghorns. The light Brahma is the most popular at present in this class, and if more realized what a good utility fowl it was, larger numbers would be seen in the poultry-keeper's yard. When handled right they are good layers of brown egg, and due to their weight are good market fowl. Cocks weight 12 pounds, cockerel 10 pounds, hen 8½ pounds, pullet 8 pounds. At present they are most popular in the New England States. In the Mediterranean class, which composes the leghorns, Minorcas, Spanish, Blue Andalusians and Anconas, the single-comb white leghorn has the call especially in this zone, where at present the white-shelled egg commands the highest market price. They are a good commercial fowl, hardy and mature quickly when given proper care. At the poultry exhibits they are leaders in numbers in the zone of their greatest popularity, which is New Jersey, Maryland, Delaware and parts of Pennsylvania, and on the Pacific coast. Minorcas are good layers of large white eggs, and beautiful as exhibition fowls. Anconas are becoming more popular each year. They, like the leghorns, are good layers, hardy and a profitable fowl to keep.

In the English class the Buff Orpingtons lead in poular favor. They, too, are good layers, large in size and a good all-around fowl with a fine grained meat that is not found in some of the lighter breeds, such as leghorns, etc. There are many other breeds, all having their good points, and are profitable when handled in the right manner, but the breeds outlined are at present most in popular favor. The beginner has quite a number to choose from and the shape or color of the fowls has but little to do with their productiveness It largely depends on the breeder behind the variety as to how productive the flock is in regard to egg production. The experiment station, the laying contests and progressive breeders have found that many of the leading breeds are good egg producers, and some strains in the same variety are better than others. So, in choosing a breed, the beginner can with a measure of safety secure the one that is most pleasing to his eye. That some breeds are better in one thing than others is without question a fact, the same as in the different strains of the same variety, and this is the point to consider in purchasing stock, chicks or eggs for hatching, that the beginner should carefully consider when starting a flock.

FALL CARE OF PULLETS

The care that pullets receive during the fall months determines, very largely, their usefulness. Pullets should begin laying during the months of November, if they are to profitable.

The pullet year should be the most profitable year, as this is the age when fowls are capable of greatest production. It is essential, therefore, that they receive the very best care and the most nutritious foods during that period of their life when they are just coming into maturity.

Pullets should be in winter quarters by the first of November, and earlier, say by the first of October, would be better. The fowls become acquainted with their new home, and when they begin laying there will be no change to disturb them. Annoyances of any kind are very likely to stop fowls from laying and at this time, when fowls stop laying, they are likely to go into a winter molt. Winter molting weakens the fowls and stops their laying until late spring.

Feed good wholesome feeds and in as great variety as possible. Of course, it is not wise to use foods that are too high in price, but variety is important. A good mash should be kept before them all the time, and the food should contain some oily food, such as sunflower seeds in the grain ration, or a little oil meal in the mash. The sunflower grows profusely in Idaho, and it is the best feather growing and conditioning food grown.

Coops and yards should be clean, light and airy. Fowls must have plenty of ventilation, yet they must be protected from draft. Draft causes cold and cold is the first stage of roup in fowls. Protect the fowls from excitement, such as dogs and children chasing them.

Plenty of clean water in clean drinking founts is necessary. Grit, shell, charcoal and granulated bone, should be kept before the fowls in open hoppers at all times. Bring the pullet to maturity as early as possible. Of course, she should not be forced by over-stimulating foods such as mustard, flour and condiments. Keep them growing steadily and constantly.

The pullet is the hen that produces the eggs, so push her along. Give her a chance.—Pren Moore.

WHAT THE AUTO MEANS TO THE FARMER

The automobile has done much for the farmer and his family. It has been the cause, so say those who know, of keeping thousands of boys on the farm who would otherwise have drifted into the city. It has made the boy more contented with farm life, because after the day's work was done he had a new pleasure to occupy his mind—the automobile would take him through the country, to the town, or wherever he wished to go. It would take him home in time for a good night's rest, something his driving horse would never do.

On the other hand, the motor car has wiped away border lines; it has brought the farm nearer the city; it has raised the value of farm land. The farmer has learned that the motor car will churn his milk, will help fill the silo, will chop and saw the wood, and do any kind of work any other gasoline motor will do. If there is a break-down the automobile will rush the farmer to the nearest town for duplicate parts.

For the farmer who raises garden truck the motor vehicle has brought better prices; it has gotten his produce to market earlier and when it is fresh. The farmer does not have to start for market at 2 or 3 o'clock in the morning as does he who depends upon horses to cart his produce.

The farmer with a milk route has found the motor car indispensable. In the hot summer the milk can be delivered with rapidity and the saving in not having the milk sour before delivery is sufficient to pay for gas and oil for a month. The farmer who owns an automobile cannot only save time and money, but on Sunday or in the evening his family can be whirled through the country visiting distant farm friends. It will take the family to the church social, or if the farm is located on the outskirts of a city, the family can go to the theatre, and return in good season.—Exchange.

SOLE SURVIVOR

Motor Owner—"Where are your recommendations? What proof have I that you managed your late employer's car successfully?"

Chauffeur—"Why, I'm alive, ain't I?"

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OR PAIN KILLER FOR THE HUMAN BODY
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We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

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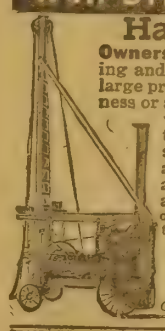

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WM. WARNER, A. G. P. A., Salt Lake City.

ABOUT THE WHEAT SITUATION

(Continued from page 3)

Outline of Price Bases For Wheat at Points in Utah and Idaho Under Regulations of Food Administration Grain Corporation.

	Chicago	Los Angeles
Price at Lund, Utah.		
Base price	2.20	2.10
Rate per 100 lbs.	.625	.30
Rate per bushel	.375	.18
Net price	1.825	1.92
Price at Twin Falls, Idaho.		
Base price	2.20	2.10
Rate per 100 lbs.	.50	.48
Rate per bushel	.30	.29
Net price	1.90	1.81
Price at Pocatello, Idaho.		
Base price	2.20	2.10
Rate per 100 lbs.	.50	.45
Rate per bushel	.30	.27
Net price	1.90	1.83
Price at Rexburg, Idaho.		
Base price	2.20	2.10
Rate per 100 lbs.	.55	.47
Rate per bushel	.33	.28
Net price	1.87	1.82

The millers and grain dealers of Utah and Southern Idaho met in Salt Lake and Mr. D. F. Prazzek, Second Vice-president of the Grain Co-operation in charge of Zone 5 with headquarters at Kansas City, was with them and told them of the policy and workings of the government in the handling of the wheat.

Farmers are permitted to store wheat but any one who buys and sells can not store more than 30 days supply unless they get a special permit from the Grain Co-operation, this includes all mills, grain dealers and elevator companies.

Farmers can sell their wheat direct to the government if they desire and the only cost will be 1% charged by the government for handling it. Price will be made according to the grade on the basis of $2.20 for No. 1 hard wheat less freight to Chicago if that is your best shipping point.

Some complaint has been made about dockage and it is suggested that a definate understanding between producer and buyer should be made at time of purchase. If the farmer wants dockage returned the mill or elevator should have a reasonable pay for cleaning the wheat. The better way is to offer for sale only clean wheat of the best quality. When you sell knowing there will be a dockage make your own arrangements with buyer.

Profits in the handling of wheat are restricted and only a reasonable amount can be charged. The miller is given a definite amount of 25 cents a barrel or 12½ cents a hundred weight as his profit, and 50 cents per ton on the by-products of the mill.

The officials of the Food Administration have no desire to change the customary ways of handling the wheat but they will not permit any one to make more than a reasonable profit in their work.

President Wilson's proclamation bring under government control Nov. 1st, practically every flour mill in the country. It reads all above 75 barrels, but it also includes all mills who do any storing and few mills can run if they do not store some wheat.

In many sections of our state there is produced only enough wheat for local consumption. Storing it is necessary for the benefit of the local people, this priviledge can be secured by securing permission from the Grain Co-operation 42 Broadway, New York, who will furnish blanks and necessary details, which must be complied with.

The government wants to co-operate with the people for the best interest of all concerned. The Food Administration has all the power necessary to control conditions, they prefer, however, to co-operate with the people, they will not stand for excessive profit in any way. Their desire is to give the farmer a fair price for producing and still keep the cost to consumer where he can afford to buy.

If any of our local people desire information regarding details of the wheat situation they should address their inquiries to State Food Administrator, Box 1788, Salt Lake City.

Do not be afraid to ask questions.

—o—

The progressive farmer believes in preparedness. He is an advocate of that brand of preparedness that sees that all farm machinery is carefully inspected from time to time and placed in condition before the beginning of the rush season. He makes ready a supply of bolts and taps and extra lap rings and clevises, singletrees, and at least one doubletree. He does not guess about his seeds; they are tested before going into the ground. It is this sort of preparedness man that has a good bank account, a happy family in a contented home.

—o—

CAR FARE

Impecunious One (spotting an easy mark)—"Please, sir, help a fellow out. I want to get home to my wife and babies and I'm not strong enough to walk."

Tenderhearted Bostonian—"Yes, my good man. I'll give you care fare to get home. By the way, where do you live?"

Impecunious One—"San Francisco."

—o—

Plow early in the fall then disk ground thoroughly where corn is to be planted next year, in order to combat the corn root-aphis.

—o—

Farm boys should lay in plenty of nuts and popcorn. It's going to be patriotic to eat it instead of candy this winter.

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta Irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917 Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

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LIST YOUR PROPERTY HERE IF Y OU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

WE WILL ACCEPT LIBERTY BONDS ON THESE FARMS.

Forty acres in northern Cache valley, all in to alfalfa. Raised a first-class crop of hay this year; right near school and social conditions; good the railroad station; good town, water for irrigation. Price $150 per acre, ten years to pay.

Just below Fourteenth South we have one acre with a new home for sale at the ridiculously low price of $800. This property was purchased by a man who is leaving town and has instructed us to get a purchaser quick. Four hundred dollars down, terms on the balance.

Right near Brigham City we have a five-room house with 16 acres of first-class land; good water right, water piped right to the house; on the main county road in a desirable location to make a permanent home. Price, $6000; $1000 down, terms on the balance. We will consider a nice little home in Ogden or Brigham City as first payment on this property.

In the Bear River valley we have 300 acres of land partly irrigated and partly dry farm that we can exchange for Salt Lake City property.

In Salt Lake valley we are offering one of the best farms to be found in this part of the state. The property is under high state of cultivation, and has been well farmed for a good many years. This property sold a number of years ago for $500 per acre. The owner has asked us to get him an offer on this property. He will consider exchanging for Salt Lake City property. The farm contains 150 acres to be sold, all or in part. Make us an offer.

In the Bear River valley we have an eighty-acre farm under the very highest state of cultivation. This farm has been tended by a German for about seventeen years. There are twelve or fifteen head of milk cows and has rotated its crops until at the present time this farm is under the highest state of cultivation. They are digging this year eighteen tons of sugar beets, will thresh 46 bushels of wheat per acre and digging 400 bushels of potatoes per acre. This property has a first-class barn, nice six-room house and other good buildings; large shade trees around the place, beautiful lawn and flower garden and nice orchard of about one acre of mixed fruit; strawberries and other small fruit; This property will rent for ten years for cash rent for $20 per acre. We are offering this farm with all the improvements for $200 per acre. There is no better farm to be found in the western states than this eighty acres.

In Cache valley we have one of the best ranches in that part of the state, containing 244 acres. This ranch is under high state of cultivation and has been farmed for sixty years. There is a good house, containing six rooms; large barn that will hold ten head of stock, cows sheds, granary, chicken houses, hog pens; in fact, all buildings necessary on a farm and ranch. There is a first-class spring of water piped into the house and barn. All kinds of plows, harrows, grain drills, disc harrows, threshing machine, hay derricks, and other tools too numerous to mention; twenty-five head of cows, twelve head of first-class horses. This property is on the main county road and right near one of the best towns in Cache valley, and has an independent water right—maintenance absolutely free. This farm is planted to grain, alfalfa, timothy and clover, two acres of orchard, about one-eighth of an acre in small fruit. The farm is particularly adapted for stock raising, dairying and dry farming. There is a lot of first-class sugar beet land on this farm. We are offering it at the ridiculously low price of $85.50 per acre. In addition to the 240 acres there are joining that will be thrown in with eighty acres of pasture land adthis sale free of cost to the purchaser.

In the Bear River valley we have a first-class farm, containing 185 acres. This farm is on the main county road and right near the town of Tremonton. It is under a high state of cultivation; has a first-class modern house, eight rooms, hot-water heat; good barns, granaries and other outbuildings; two acres planted to orchard; fenced with a wovenwire fence; large shade trees and lawn around the place; water piped to the house and barn; in fact, every modern convenience necessary on a farm. This property has been under a high state of cultivation for a good many years and can be had for $150 per acre, on terms. Will consider Salt Lake City property in part exchange.

KIMBALL & RICHARDS
"Land Merchants."
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POULTRY

TEST COMPARES COST OF EGG-PRODUCING FEEDS

Feed to produce one dozen eggs cost 10 cents with pullets, 14 cents with two-year-old hens, and 19 cents with three-year-old hens in a three-year feeding test recently reported by poultrymen of the United States Department of Agriculture. These were the cost figures of feed at the time of the experiment, which began in 1912, and must be corrected to present prices. Tables of rations and costs presented in the report enable poultrymen to make these corrections when compared to 1917 prices.

Much information relating to feeding under the various condtions also was learned in the experiment.

Starting with six pens of 30 pullets each, the test was enlarged to include 16 pens containing 366 fowls. Most of the pens were made up of 30 standard-belt pullets, bred and reared under the same conditions and selected for vigor, standard shape, and color. Some flocks consisted of fowls of one breed while others contained more than one kind of pure-bred fowls of the general-purpose type. Pens of cross-bred pullets also were used.

With the exception of three flocks which were confined to good-sized yards, all the fowls were allowed free range over several acres of rough land. ing their first year, 6.4 cents cheaper

Detailed records were kept of the feed used, the weight of the eggs, and careful observations were made of the conditions which affect egg production, such as molting and broodiness. The test was conducted on the experiment farm of the Bureau of Animal Industry, at Beltsville, Maryland. Summarizing the results of the tests, the specialists draw these conclusions:

The average egg yield for the first laying year in all pens was 131 eggs, and the highest pen average yield was 169.5 eggs. In the second year the average egg yield of all pen was 92.7 eggs, which decreased to 78.2 eggs inthe third alying year.

The average value of eggs over feed cost the first laying year was $2.56 per hen, falling to $1.41 the second year, and to $0.79 the third year. The highest average value in any pen was $3.41.

The general-purpose fowls ocnsumed annually 72 pounds of feed which cost $1.13 while the Leghorns ate 55 pounds, which cost 87 cents.

Good results were obtained with rations both with and without oats. The use of this grain added variety to the ration without increasing the cost.

Fowls not fed any beef scrap or other animal protein laid only 90 eggs during their pullet year compared with 137 eggs from the beef-scrap pens, and 84 compared with 83 in their second year. The eggs of the no beef scrap pens cost about 2.2 per dozen more to produce the first laying year, but these costs were about equal during the second year. The fowls not fed beef scrap laid very poorly in winter, thus materially reducing the value of their eggs.

Cottonseed meal used in place of beef scrap as a high-protein feed in the ration produced brown or greenish spots on the yolks of the eggs, especially in warm weather, making a considerable proportion of them unfit for market. Eggs were produced more cheaply and at a considerably greater profit on the beef-scrap ration.

Fish meal at $7 a ton less than beef scrap proved to be a good high-protein feed, which can be used to advantage to replace beef scrap. The fish meal did not in any way affect the flavor or quality of the eggs.

General-purpose fowls allowed to select their own mash constituents ate a dry mash containing about 63 per cent corn meal, 19 per cent beef scrap, 9 per cent bran, and 9 per cent middlings. Leghorns ate a mash of about 66 per cent corn meal, 26 per cent beef scrap, and 4 per cent each of bran and middlings. No better results were obtained by this method of feeding than where the ground grains were mixed together in a mash.

Good mashes, as indicated by these experiments, may be made of 66 per cent corn meal, 26 per cent beef scrap, and 4 per cent each of bran and middlings, or 2 pounds of corn meal and 1 pound each of bran, middlings, and beef scrap, with a scratch feed in each ration of equal parts by weight of cracked corn, wheat, and oats, which is fed so that the hens receive about equal parts of scratch feed and of mash.

The Leghorns on free range gave a considerably greater egg yield than those confined to a fair-sized yard. This difference was less marked in the general-purpose hens.

Sprouted oats fed as green feed to hens confined to yards cost about 10 cents per hen a year and 1 cent per dozen eggs, not including any charges for labor and equipment. The hens ate on an average in one year about 1.3 pounds of oyster shell and 0.7 of a pound of grit, which together cost about 1 cent per hen.

The Leghorns did not lay as well in the winter as the general-purpose breeds, especially during their second year, but the Leghorns produced eggs about 3 cents per dozen cheaper durin their second year, and 9.8 cents cheaper in their third year than the general-purpose breeds. One pen of Leghorn pullets produced eggs in their first year at a feed cost of 6.7 cents per dozen, while the value of the eggs per hen for the year was $3.41 over cost of feed.

The average weight of a dozen eggs from the general-purpose fowls during their pullet year was 1.53 lbs., 1.60 during their second year, and 1.63 during their third laying year. The eggs from the Leghorns averaged 1.45 pounds during their pullet year, and 1.49 during their second and third years.

The egg production of the general-purpose fowls decreased 32 per cent in their second laying year. The decrease was considerably less in the Leghorns, their 2-year average egg production exceeding that of the general-purpose breeds by 19 eggs. The decrease in production from the second to the third year was only 4 per cent with the Leghorns, compared with 13 per cent in the general-purpose breeds.

The cheapest eggs are produced in the spring, during April, May, and June, while the greatest costs occur in October, November, and December. The lowest monthly feed cost of a dozen eggs in any of these experiments was 4 cents, while in some cases no eggs at all were produced during the month.

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BOYS AND GIRLS MAKE MONEY

The boys and girls of Utah in their organized club work, will have earned nearly nine hundred thousand dollars when their projects are completed this fall, according to a preliminary estimate of gross earnings just made by State Leader of Boys' and Girls' Clubs J. C. Hogenson, of the Extension Division of the Utah Agricultural College. This amount will be distributed over the various agricultural and home economic activities of the boys and girls as follows:

5,260 acres of gardens at $86.00 an acre	452,360.00
800 acres of sugar beets at $80.00 an acre	64,000.00
1,000 acres of potatoes at $300.00 an acre	300,000.00
150 acres of mangels at $105.00 an acre	15,750.00
51,000 chickens at 30c each	15,300.00
4,000 hogs at $40 each	16,000.00
200 calves at $45 each	9,000.00
8,000 quarts of fruit at 40 cents each	3,200.00
20,000 loaves of bread at 5 cents each	1,000.00
2,000 articles of clothing at 80 cents each	1,600.00
	$878,210.00

Thirty six thousand boys and girls have been co-operating in this work during the past season. The district leaders expect that thirty thousand of these will complete their projects.

MOREGG
IT MAKES HENS LAY
POULTRY FOOD

YOU want more eggs. The present price is enough to induce any poultryman to see that he gets more eggs. Proper feed is the secret. Order "Moregg" today and prepare for a big egg harvest.

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Send us your hides or furs, and we'll tan and make Fur Coats, Robes, Mits, etc., of them
ALL WORK GUARANTEED
All kinds of repair work and taxidermy. Also tanning harness and lace. The only Tannery in the Kansas City's.
Cash Paid For Hides and Furs
Write for catalog 6 and price list.
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Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.
Virginia, Idaho.
"Home of the Champion Durocs"

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Now ready FOR SALE. From Richards' "Pathfinder" and "Defender," and prize-winning sows. My junior yearling boar, from "Defender," won 2nd pride at recent fairs at Boise and Salt Lake. Prices very reasonable.
V. R. FISHER
Oxford Idaho

KESKO FARM
Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers
also
100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

PURE BRED, LARGE TYPE POLAND CHINA HOGS FOR SALE. Write A. C. Anderson, Box 1, Ephraim, Utah.

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.
Mailing bags for samples sent free.
THE MANGELSDORF SEED CO.
Atchison, Kansas.

FOR SALE

Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.
H. E. WALKER
Box 964, Salt Lake City, Utah.

Notice—Men Out of Work

THREE HUNDRED MEN WANTED
Rock men $3.50. Carpenter's helper $3.50. Concrete Men $3.50. Teamsters $3.15. Carpenters $4.50. Nine hour day. Board 90 cents day. Hospital fee $1.00 a month. Bunk rent $1.00 a month. Men furnish own blankets. We furnish electric light and bunk houses, shower baths. The board is first class.
This work is at Olmstead, six miles from Provo, for the Phoenix Construction Company, and will last three months.
Apply at 149 South West Temple, Salt Lake, for transportation, which will be advanced, and no charge made if you stay 30 days.

BIG MONEY

WOLVES—the Highest Prices Paid in History.
Send for Special Price List.
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NO matter how delightful your home may now be, Mr. Edison's New Diamond Amberola could not fail to make it more so. A Diamond Amberola in your living room would make it the brightest and cheeriest spot in the world for you. It would become a hallowed place where your family and friends would gather together and enjoy with you the gems of the world of music—heart-songs, ballads, hymns, opera, concert, musical comedy, vaudeville—no end of entertainment.

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HEAR MR. EDISON'S AMBEROLA BEFORE YOU PURCHASE ANY PHONOGRAPH OR TALKING MACHINE, WHATEVER NAME IT MIGHT HAVE. And when you do hear the Amberola, hear it in your own home right where you would expect to use it after you bought it. Just give it a few days' trial and it will sing and play itself into your heart and your life so that you will never want to part with it even at many times its cost.

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With the Edison Diamond Amberola you may have any kind of music at any time and any place. Think what a priceless possession this is!

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Mr. Edison, placing quality before all else, selects his artists solely on merit. He has the choice of the best vocalists and instrumentalists of the world make records for him. That is why, on Edison Blue Amberol Records, you hear the foremost singers, instrumentalists, bands, orchestras, etc., of the day. As illustrating what you may have when you own an Amberola we have selected at random the following Blue Amberol Records from the extensive Blue Amberol catalog:

HEART-SONGS
Annie Laurie
Ben Bolt
Juanita
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Old Folks at Home

SACRED SELECTIONS
Abide With Me
Beyond the Smiling and the Weeping
Crossing the Bar
Glory Song
I Love to Tell the Story
Dreams of Galilee

BALLADS
Only a Pansy Blossom
Silver Threads Among the Gold
I'll Take You Home Again, Kathleen
Take This Letter to My Mother
Only to See Her Face Again
When You and I Were Young, Maggie

BANDS
America, I Love You
El Capitan and Manhattan Beach Marches
Cavalry Charge
Boston Commandery March
Blue Danube Waltz
Heart of America March
Garden of Roses Waltz
Passing Review—Patrol

PATRIOTIC RECORDS
America, I Love You, March
Dixie
My Country, 'Tis of Thee (America)
We're Tenting To-Night
American Fantasie
Yankee Doodle

MARCHES
Dominion of Canada March
Boys of the Old Brigade March
Ben Hur Chariot Race March
Atholl Highlanders' March
National Emblem March
Spirit of Independence March

MEDLEYS
Bonnie Scotland Medley
Medley of Country Dances
On Parade Medley
Fisher's Hornpipe Medley

INSTRUMENTAL SOLOS
Alexander's Ragtime Band (Banjo)
First Heart Throbs (Bells)
Dancing on the Housetop (Bells)
Carnival of Venice (Accordion)
Bonnie Scotland Medley with Variations (Xylophone)
Czardas (Harp)

VAUDEVILLE
Town Topics of Punkin Center
My Uncle's Farm
Insect Powder Agent
Golden Wedding
Funny Doings at Sleepy Hollow
Mrs. Clancy's Boarding House

QUARTETS
Alone in the Deep
Don't Stop
Kentucky Babe
Tramp! Tramp! Tramp!
Sally in Our Alley
When the Roll Is Called Up Yonder

RECORDS FOR DANCING
Around the Map—Fox Trot
Good-Bye Boys Medley—Two-Step
Hezekiah—Cake Walk
Listen to This—One-Step
Over the Waves—Waltz
Whistling Rufus—One-Step
Virginia Reel
Underneath the Stars—Fox Trot

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IDAHO FALLS—Geo. M. Scott
KIMBERLEY—Howes Pharmacy
MALAD—B. B. Davis
MT. HOME—F. J. Pilliner
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NAMPA—Tom Poole
POCATELLO—H. H. Whittlesey
PRESTON—Foss Bros.
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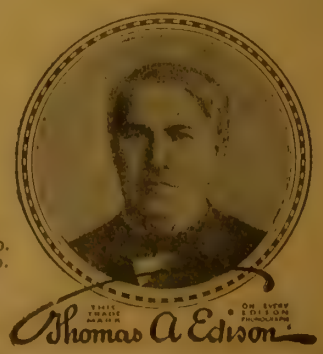

Thomas A Edison

WRITE YOUR NAME AND ADDRESS IN MARGIN BELOW AND MAIL COUPON TO NEAREST EDISON DEALER

Please send me the Amberola Book and particulars about your FREE TRIAL offer on Edison Amberolas

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIVI No. 15 — LEHI AND SALT LAKE CITY, UTAH. — NOVEMBER 10, 1917

Increased Production Sugar Beets and Hogs Necessary

Each One Must Do Their Part to Help the Government Produce More Sugar and Live Stock.---Our Soldiers and Our Allies Need Your Help.

Written for the Utah Farmer.

THE need of producing more sugar is being emphasized by the Food Administration. In those sections of the United States were sugar beet growing has been part of the farm practice the government is asking the farmers to increase their acreage for next year. Our sugar factories could make a great deal more sugar if they had more beets.

Just at the present time the sugar shortage is being keenly felt by people living in the eastern states. They are only able to buy one or two pounds at a time.

This shortage is due to the failure of the American public outside many loyal homes to reduce adequately their consumption of sugar despite constant and insistent appeals made since June by the U. S. Food Administration.

Unusual exports to France, in order that the French may maintain their ration, which has now been reduced to one pound per month per person.

The consumption of sugar in the United States is, even now, over seven pounds per month per person.

When beet sugar is put on the market and the Hawaiian production reaches the United States it will help.

In a short time, beet sugar factories in the Western States, now being operated at full capacity, and the Hawaiian production, will be able to take care of the sugar supply west of the Northeastern States. As the production of beet and Hawaiian sugar increases, areas supplied from this source will gradually extend eastward and in all probability beet sugar will reach the Atlantic seaboard by the end of November.

The rapidity with which this sugar advances from the West will be largely controlled by economies in sugar consumption practiced by the people in the western area. The United States Food Administration makes a special plea to these people that they rigorously reduce the consumption of sugar, more especially of candy and sweet drinks, in order that the Northeastern States may be supplied at the earliest possible moment.

Shortage—But No Advance in Price

By arrangement with the beet and cane refiners, wholesale prices of sugar from refiners have not been increased during the past two months, despite the possibility of shortage and famine prices. Practically all cane sugar has passed from the hands of refiners and producers to jobbers and retailers and should reach consumers at prices in the neighborhood of nine cents per pound.

If, because of the shortage in the Eastern States, retail prices should increase, it is proof that they have been increased by the handling trades—and not by either producers or refiners.

The Food Administration asks the public not to pay more for sugar during the present shortage than was paid during September and October.

(Continued on page 7)

UNITED STATES FOOD ADMINISTRATION

WASHINGTON, D. C.

October 22,1917

One of the most vital problems confronting this nation is that of procuring sufficient sugar to meet the requirements of our people and of the Allied Nations fighting our common battle. The production of cane sugar in this hemisphere can and will be increased to a limited degree. But we must rely upon the farmers in sugar beet producing sections of the country for a part of the needed supply. I, therefore, earnestly appeal to every farmer, so situated, to come to his country's aid in this hour of need. Without the cooperation of the American beet grower our task will be very difficult and our ability to respond to the calls to be made upon us for this very essential commodity will be curtailed. It is at least the duty of every beet grower to maintain in 1918 his normal acreage of sugar beets. It is his privilege to increase that acreage to the extent that a well balanced production of crops will permit, and in this manner effectively demonstrate his patriotism.

Herbert Hoover

Copy of a letter sent out by Mr. Hoover urging the increased production of sugar beets.

A MINIMUM price of $15.50 was agreed upon for hogs at a conference between Joseph P. Cotton Chief of the Food Administration meat division and representatives of the principal livestock exchanges of the country, the big packers and others interested in the increased production of our meat supply.

Mr. Cotton said the main purposes of the Food Administration are to see that the producer at all times can count on a fair price for his hogs so that it will be profitable to him.

To see that the farmer increases the number of hogs bred.

To limit the profits of the packer and middle man and to eliminate speculation. All this is necessary because we must have more hogs.

To see that the ultimate customer will at all times get an adequate supply of hogs at the lowest possible price. We shall tablish rigid control of the packer.

The Food Administration will have full control of all buying for the Allies, our Army and Navy, the Red Cross, the Belgium Relief Committee and the Neutrals, which constitutes a considerable factor in the market.

The first move is to stop the sudden break in the price paid for hogs at the central markets. These prices must become stable so that the farmer knows where he stands and will feel justified in increasing hogs for next winter.

The Food Administration says that the price so far as they are able to effect them will not go below a minimum of about $15.50 per hundred weight for the average on Chicago market.

Until further notice we shall have the advice of a board composed of practical hog growers and experts. This board advises that the best yard stick to measure the cost of production is the cost of corn. That board further advises that the ratio of corn prices to hog prices on the average over a number of years has been about twelve to one, or a little less. In the past, when the ratio has gone lower than twelve to one, the stock of hogs in the county have decreased, when it present conditions the ratio should be about thirteen to one.

That board has given its judgment that to bring the stock of hogs back to normal under present conditions the ratio should be about thirteen to one.

Mr. Cotton says the Food Administration will try to stabilize the prices so that the farmer can count on getting from each 100 pounds of hog ready for market thirteen times the average cost per bushel of corn fed into the hog.

Let there be no misunderstanding of this statement. it is not a guarantee backed by money, it is not a promise by the packers, it is a statement of the intentions and policy of the Food Administration which means to do justice to the farmer.

(Continued on page 14)

Feed Situation Growing Serious

A continuation of rainless weather throughout the lower coast and southwest territory is finally placing the livestock and dairy interests in a state of anxiety over the feed situation. Dealers and others who are supplied with feedstuffs are taking corresponding advantage of the situation, and in case of hays prices were again marked up during the week, bringing top grade alfalfa up to $24 and fancy wheat hay to $27 on the San Francisco market during the past week. Stock hay, which in normal years commands but a nominal price, is quoted at $19.

The continuation of the dry season up into November has brought into the feed markets a strong demand from many stockmen who already realize the situation they will be up against between now and the new spring grass, since rains at this late date would be followed so closely by frosts that little reliance can be placed on a winter growth of feed. So serious is the situation in parts of the southwest, notably the range section of western Texas, New Mexico and Arizona that relief measures are being taken to save stock, a telegram from that section stating 1,500 cattle cars are being sent in to move stock out of the drought-stricken territory. While the report may be overdrawn somewhat, such a result should not be surprising in a section of country, which also includes the irrigated sections of the greater part of California that has had no rain for pratcically eight months.—Pacific Dairy Review.

NEW CIRCULAR ON VEGETABLE STORAGE

The Utah Experiment Station has just published Circular No. 26 on "Storing Vegetables for Winter" by Dr. M. C. Merrill, Horticulturist. The following general headings are discussed: (1) Fundamental Principles Underlying Storage Practice; (2) Storage Requirements; (3) Types of Storage; and (4) Storage Conditions for Different Types of Vegetables.

For generations the human family has been storing away its surplus crops in the season of plenty for use during the season when nature is nonproductive. In that time certain practices have been developed and have been taught by father to son for hundreds of years. Despite the fact that the subject is so important, comparatively little research work has been done during all that period to determine the best conditions for the storage of the surplus produce. We are therefore even now using many of the methods of our fore-fathers, a fact which speaks highly for their utility. The call is becoming more and more presistent, however, for more definite and reliable information along this line and it is hoped that the time is not far distant when the Experiment Stations of the country will have additional facts and data of value pertaining to this subject. The great goal that is sought, of course, is the prevention of all loss and waste from our pits and cellars due to improper conditions of storage.

In this circular, which should prove of especial interest and value to farmers and to the "war gardeners" of this year who are storing away the products of the soil, the dominant idea seems to be the giving of the "why" of vegetable storage as well as the "how." The various methods now in use are discussed, as also the best conditions under which the produce should be stored, as far as known at present.

Free copies may be had by addressing a card to the Utah Experiment Station, Logan, Utah.

SOME CORRECTIONS OF FREIGHT RATES ON WHEAT

Just at the present time freight rates are an important item to the farmer because they help to determine the price of his wheat. Last week we published some freight rates as they were furnished us, now we have some corrections. We give only the changes. The rate from Thistle, Utah, to Chicago was published at 60 cents, it should have been52 cents, making an increase in price of wheat of 4.8 cents. Marysvale was published as 65 cents to Chicago, and should be 57 cents or 4.8 cents increase in price of wheat. Nephi 57 cents instead of 65 cents, but Los Angeles is best price for them. Ephriam was 65 cents, and should be 57 cents, or increase of 4.8 cents per bushel. Price was given as 60 cents, should be 52 cents, increase of 4.8 cents per bushel.

Squirrels aren't the only animals that are laying by a store of nuts this fall. We know many patriotic farm boys who are going to eat them this winter instead of candy.

Cleaning Up Time

The accumulation of trash is one of the worst faults to which humanity is heir. Apart from carelessness, it comes, usually,, from the custom of hurrying and the thing is thrown aside until a more convenient time to dispose of it; the result being that it lays in that location for days or months and invites the throwing and slinging of more trash on that spot until the heap grows so large that it must be recognized one way or the other. Like better appointed ways in life it is the best thing in the world to have a place for the trash so that its accumulation will neither affend by looks nor become an obstruction. Set aside a day for the removal of it. In addition, have a special place to keep it until the day of hauling off: Tin cans, pans, baling wire, broken glassware, and things of a similar nature should have a large box to hold them. It is then easier to gather it up—and, oh! the looks during the days of accumulation.

In spite of the wastefulness of such methods you can often find a corn plow, a wornout binder, or a dilapidated vehicle standing in some unfrequented spot to decay and return to earth. Many of these cast-off machines have bolts, braces, screws, and other parts that might be saved and later put to good use when a thing almost like it is needed in some other piece of machinery. After the recovery of such parts and pieces by all means give the forsaken thing a decent burial by hauling it off to the deepest ditch you can find, or else sell it for scrap iron. Either way you dispose of it, it is a matter of economy. If you allow it to stand and decay, it shows a careless mind; if you can sell it for "old iron" you not only receive a little pocket money as a recompense but you also have the appearance of a man who enjoys seeing the place kept free of all such "eye sores." There may be little real pleasure in a clean-up day, but afterwards, as you allow your eyes to travel over the scene, you are almost sure to have that satisfied feeling of respectability and be proud of the feat. Other people will join in the celebration, either mentally or with speech, the sum and substance of which would be that they have a better opinion than ever of you.

The pile of trash takes up room that might be used to far better advantage. Many of such spots could keep the table supplied with nice radishes, roasting ears, or grow a bed of beautiful flowers. Moreover, such things as baling wire, broken glass and pieces of tin cans are the worst possible enemies to mower sickles. The pieces of sharp glass cut the children's feet and prove a menace to the hoofs of the horses. On every farm it ought to be a forbidden act to throw such thrash here and there. There is only one reasonable method of disposal, and that is according to the plan already mentioned.—B. F. V.

ELECTRICITY IN RURAL LIFE.

Work on the farm has come to be more and more of a machine process, as it is termed. In this change over from manual labor to machinery, animal power has given way to steam, gas, and electricity as the motive driving power. Over 90 per cent of the population of our cities are served with electric power, while a small per cent of the rural population avail themselves of its many uses. But the demand is steadily growing. One used always used, is the natural result of the economy, efficiency and enhanced returns from the electrified farm. For lighting the farmstead and surroundings, for night work and traffic; for electrical devices in the homestead,—cooking, washing, laundry work and sewing, for pumping and irrigation, for power, wherever a wheel is to be turned, electricity is the one universal supply. One cent worth of electricity will operate a 16 candle power lamp for five hours; a six-pound flatiron for fifteen minutes; or an electric washer with capacity for twelve sheets per washing ful, long enough to wash out twelve sheets; or a pump to raise one hundred gallons of water one hundred feet; or a sewing machine for two hours; or bring to a boil one quart of water. Time was when with our assumed unlimited resources we reckoned in days, dollars and dagos; now we begin to reckon in seconds, cents and watts. The watt is the unit of electrical energy. We have given above the latest quotations on its performance, on a basis of what is known as the charge for current at rate of ten cents per kilo-watt hour; or, ten cents for one thousand watts of electrical energy used for one hour. Sometimes we shall speak of the improvement in health, and the general "atmosphere of the Home," the saving in time, energy, and all that these mean to modern life, as well as the money values considered, when one of this great corner stone of comfort is laid on the All-Electric Farm.—W. S. Aldrich.

We Want Your Help
It Will Take Only a Few Minutes

The labor shortage with us is a problem and we are going to ask your help in two things.

FIRST—Send in your payment for renewals. You were sent a letter the other day telling you all about it. Why not answer it today. Help us by enclosing your check in the self addressed envelope we sent you and mail it today.

SECOND—Help us a "bit" by telling your neighbor about the good work the Utah Farmer is doing. Tell them how helpful it has been to you during the past year. We want every farmer to become a member of the family. It will only cost them one dollar for 52 copies a year subscription.

Prompt action on your part will be greatly appreciated by us.

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Lehi, Utah.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

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FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, NOVEMBER 10, 1917 No. 15

Conservation of Soil Fertility

Dr. F. S. Harris, Director Utah Experiment Station.

"Land recently brought under cultivation from its virgin state is usually fertile, and as a result very little attention is given to conserving soil fertility in new countires," says Dr. Harris. "After the land has been cultivated a number of years and its productivity begins to decline more attention is given to proper methods of handling it. At first no system of cropping is followed and but little attempt is made to save the farm manure; later all fertilizing materials are saved and crops are rotated in the manner that will give the highest returns. In the West agriculture is just reaching the stage where farmers find it necessary to revise the old slipshod methods of cropping and adopt definite rotations based on scientific principles.

"Irrigated land offers splendid opportunities for good rotations since so many crops can be produced, and the intensive methods, which accompany irrigation, are particularly favorable to rotations. We should expect, therefore, to see during the next generation very satisfactory systems of cropping in operation on the irrigated farms of the West.

"It is probable that in many districts alfalfa will be the foundation of most rotations. This crop requires very little work, which makes it fit in well with such crops as corn, potatoes, sugar beets, and other cultivated crops. Alfalfa also furnishes a means of enriching the soil provided a crop is plowed under. Many farmers labor under the impression that the mere growing of alfalfa on the land for a long time without plowing any of it under will fertilize the soil; this is a mistake. Alfalfa uses plant food the same as any other crop. It does, however, gather nitrogen from the air and store it in the crop, but if the crop is hauled away the nitrogen is taken also. With the return to the land of the manure resulting from feeding alfalfa, considerable fertility is brought back; but in addition to this it is a good plan to plow under a full crop of alfalfa before putting in the next crop in the rotation. A good manuring combined with the plowing under of a crop puts the land in first class condition for the crop that follows. Usually a cultivated crop should follow alfalfa or any sod that is plowed under. This gives an opportunity to kill the sod plants and assists the organic matter to become thoroughly incorporated into the soil. Where corn is raised it makes almost an ideal crop to follow alfalfa; in fact, corn almost always follows the sod-producing crop in the rotation. Potatoes also make a good crop to follow alfalfa and when a piece of alfalfa is plowed under part could be planted to corn and part to potatoes, the amount of each depending on the relative profitableness of the crops.

"If sugar beets are to be included in the rotation they can follow corn or potatoes to good advantage and can usually be raised two years on the same land with profit. The beets can be followed by a year of beans, peas, or grain, after which the land can be put back into alfalfa with a grain nurse crop.

"If a farmer has 100 acres of land the rotation could be worked out as follows: 50 acres in alfalfa which would remain on the land five years. Ten acres of the alfalfa would be

(Continued on page 11)

The Appeal of The Hour

"Buy At Home."

By Geo. S. McAllister, President Manufacturers Association of Utah.

The great value of "Buying at Home" has been impressed on the American people more during the past three years than ever before in their history.

Prior to the great world war, the United States was a debtor nation; she is now the greatest creditor in the world.

Three years ago a great many of our needs and luxuries were supplied by the European nations. We were exporting our raw products to them and in return received the finished product as a greatly enhanced value. But like a bolt from the blue, this war changed conditions. Export was limited and import was paralyzed, and we were forced to make and use our needed articles or go without.

Thanks to the inventive genius of our artisans and the loyal support of our business men, great factories have been created almost over night and are now producing most of the various articles that were formerly imported.

The people of the United States have rallied around their new industries and have proved the value of "buying at home." They have thus created new payrolls and have furnished employment as never before, so that now on every hand we find a prosperous, thrifty people. There is idleness nowhere.

Utah has shared in this added impetus to home industry. Her factories have all been busy, and many new ones have sprung into existence.

The home factories have not had a monoply of the home markets, but have been forced to seek trade elsewhere. It is now almost imperative on the part of Utah's citizens that they use more of the home goods and less of the foreign variety, as the decree has gone forth from National Food Administrator Hoover, that all citizens should "buy as close to home as possible," so that less waste might occur in commerce and so that the railroads might not be hauling duplicate freight from one point to the other. Would it not be both absurd and wrong to send Utah beet sugar to eastern markets and then import cane sugar when there is admittedly no more value or merit in the latter

(Continued on page 15)

We have produced a big crop of hay this year. The prospects are that it will bring a good price before the wi nter is over.

Old Fashioned Corn Meal

James W. Jones.

Of late years, most of the corn meal that is sold is just about the same as corn flour. Many people have been almost weaned away from corn meal, corn musn and other toothsome and wholesome foods. This is the time that we need to give serious attention to a larger and better use of corn. The grocer today prefers to handle the brand of corn meal because it seldom ever spoils on his shelves. Most of his supplies comes from the glucose manufacturers who have installed equipment that separates the germ from the remainder of the kernel and then the starchy portion is ground into the psueda meal. But the "punch" is all gone, in this new fangled corn meal. When the germ is removed from the corn kernel, practically all of the oil is also removed. Corn oil has entered into so many commercial products that it can no longer be sold at the price of starch or the carbohydrate portion of the kernel. From corn oil there is made such articles as culinary oils, as a substitute for lard, olive oil, pharmaceutical glycerine, nitoglycerine, and it is also vulcanized and made into a rubber substitute.

Practically all of these products are recognized as high priced, even under normal conditions. During war times, even higher priced. No oil is now left in corn meal by the large manufacturers. That takes away the best part of the flavor and it also takes away energy sustaining and flesh forming constituents.

Don't you remember that the old fashioned corn meal bag gave the largest type to the word FRESH? During the fall and early winter, corn meal would turn rancid after a time. As the weather became colder, it would stay fresh longer. The alert dealer handled corn meal in those days in small packages because people did not like to have a large quantity on hand and allow it to turn strong or rancid. It was the oil that made it turn strong or rancid.

Today, the grocer places the packages on his shelf and it stays fresh almost indefinitely but the old fashioned corn meal "kick" has gone.

Now that Utah and many districts in the inter-mountain country grows corn successfully, it will be a splendid thing for us to get back to the

(Continued on page 7)

Food Situation In France

By Fred B. Pitney.

Telling the truth about the food situation in France is an extremely difficult thing to do, for one comes immediately into contact with so many counter currents of opinion. There is no question in the mind of anyone conversant with the facts that it is not only with Germany, but with the Allies, as well, that the food situation is serious and needs prompt and effective treatment. But in the endeavor to deal with this question one finds constantly in the official mind an attempt to reconcile two irreconcilable positions.

Governments Alone Cannot Win War.

On the one hand, there is the open and full recognition of the seriousness of the situation, of the demand for prompt, full and efficacious co-operation and co-ordination of effort among all the nations warring against Germany in order that each may be able to sustain its striking power at the point of highest efficiency. This opinion recognizes that governments alone cannot win the war. It must be a war of the Allied peoples against Germany. And this opinion sees the necessity of laying the situation fully and fairly before the people so that they will voluntarily adopt the conservation methods necessary to victory.

On the other hand, confused in the same minds with this opinion there is an idea that if the people are told too much they will become frightened and will weaken. That is a bald statement, very plainly put, but that is what it boils down to. The statesmen and politicians have a peculiar idea that they are the only men who are farsighted enough and strong enough to face the whole truth and go on fighting. So they try at the same time to arouse the people and to reassure them.

We find a fine example of this in the submarine. On the one side we are told that our efforts to overcome the submarine must be redoubled, while on the other side we are told the submarine is a failure and it is to laugh at the German threats. In regard to food we are told the Allies must guard their every resource, and immediately on top of that we are told they have reserve stocks for the next three years. We are told that it is vitally necessary for America to put a great army in the field at once and in the same breath we hear that the Allied preponderance in man power over Germany is increasing every day.

Whole Truth Must Be Known.

How can one expect to arouse a nation to war with such a stream of contradictory statements? My own opinion is that the peoples of all the Allied nations are strong enough to know the whole truth and that knowing it will only make them more determined and fight harder, while at the same time their collective action will be much more intelligent. I do not believe in any government trying to win this war. I believe that only an aroused nation will be vicorious. And I believe that the way to arouse the nation is to lay every shred of fact fully and completely before the people.

In France, however, one meets with a third phase of official opinion that further complicates the situation. France has borne the brunt of the fighting on the side of the Allies for three years. Her resources in men and material have been strained to

(Continued on page 10)

DAIRYING

HINTS ON THE CARE OF COWS

The farmer who earns a living for himself and family cannot afford to keep more cows than he can properly feed. One cow that is in good condition, well fed, and kept in a warm barn, will yield as much milk as two cows that are not sufficiently fed and cared for, and are stabled in a cold, dark, damp barn. The one thing most essential to the owner is the health of the cow. To keep a cow healthy constant care is necessary, and for the care required she will pay back to her owner a handsome profit.

Many people do not realize the importance of giving cows a thorough brushing every day. It will keep the skin clean and healthy, prevent disease, and well repay the labor bestowed, besides making the cow more comfortable and contented. A stiff brush made of broom corn is the best.

Kindness to animals is capital well invested, and pays the farmer in return a large revenue. If possible always have the same person milk, and let it be one who is naturally kind, and who inspires the cow with confidence, so that if she moves or puts the milker to any inconvenience she will not expect punishment.

Feeding, Stabling, Grooming, etc.

It is better to feed before milking, then the cow will stand quietly and give her whole attention to the operation. It is necessary that the milker be clean about his person, and use the utmost care about the stall. There should be no dust flying, and before milking the udder should be brushed or wiped clean. The best way is to milk into a funnel which carries the fluid to a covered pail. Then the milk should be quickly removed before it has time to cool or absorb any odor.

The milk of the cow depends largely upon the amount and quality of the food she receives and the care and condition of her home. This being true, it pays in dollars and cents to treat her well. In winter she is especially dependent on her owner for proper food and shelter. She should be kept clean, and the floor of her stall dry, and at night she should be given a litter of leaves or straw to lie upon. The floor of her stall should be raised at least four inches, and ought to be nearly level. Cows are often strained and become muscle-sore on account of the uneven floor on which they are forced to stand, and the constant changing of the body from one foot to another in order to get into a restful position causes much pain and annoyance. It is great comfort for the cow to be able to lick herself, and whenever it is practicable she should be so tied that she can lick any part of her body. Behind the cow, to be used as an absorbent, there should be dry earth or sawdust.

The barn should be well ventilated, the light and air coming from behind the animal rather than from overhead. Windows should be arranged on the south and east sides of the barns to let in plenty of sunlight. The barns should be warm, and the temperature kept at all times above freezing. In large barns this can best be done by building a partition with an overhead covering where the cows stand. If this cannot be done it is good economy to blanket them.

When the weather is pleasant turn the cows out in the sunshine for a little exercise for an hour or two, but be sure to stable them before the temperature begins to lower in the afternoon. It is better for the cows to stand in the barn on cold and stormy days than to be turned out, for when they become wet much of the warmth of the body must be exhausted to dry the thick coat of hair, and besides there is danger that the cow will take a severe cold, which may lead to tuberculosis.

Kind Treatment—True Economy.

A cow's mental condition should at all times be considered. Be careful not to frighten her; remember she has a very nervous organization, and it is important that she be kept quiet, and treated with uniform gentleness. There should be no blows struck, no kicks given, no stones thrown, no loud words spoken. These distress and disturb her, and will lessen the flow and injure the quality of the milk. In the country, boys taking cows to and from the pasture often chase them, making them run fast; this should never be allowed as it is a great injury to them.

In some states it is pronounced a misdemeanor punishable by a fine of not less than $50, or imprisonment not exceeding one year, or by both, to keep milch cows in crowded or unhealthful places, or to feed them with food producing unwholesome milk, such as distillery waste, usually called swill, or upon any substance in a state of putrefaction or fermentation.

Tuberculosis is very frequently found in cows that are fed on brewers' grain and swill.

No rule of feeding can be followed that will apply to every cow. The condition and capacity of each individual should be studied by the feeder in order to secure the best possible results. Have salt where a cow can get as much as she wants. Mineral salt is better than any other kind, and it acts as a tonic and a corrective. Always give a cow all the fresh water she wants.

Importance of Clean Food and Pure Water.

A cow should not be allowed to drink very cold water, as it reduces her temperature. She often takes a chill, and it requires a good deal of her vitality to recover from the effects of it. In winter the chill should always be taken from the water before offering it to a cow to drink. Many scientific dairy-men heat the water for their stock. The late Honorable E. F. Bowditch, of Framingham, by experiment found that by giving twenty cows water at a temperature of 92 degrees the supply of milk was increased two hundreds quarts per week, conclusively proving the value of warm drinks over cold, in winter. A cow should never be allowed to drink stagnant or impure water. Drinking stagnant water produces a feverish condition in the system, which is manifested by a ropiness in the milk.

Samples of milk from cows that have been drinking stagnant water, when put under a microscope, will show them to be fairly swarming with life which has been taken into the system through the water. Such milk is unfit for food.

Have regular hours for feeding, milking and grooming. The best rule in winter is to feed grain twice a day, twelve hours apart, with a fodder of hay at noon. Food should be clean and wholesome. It is better to stack hay out of doors than to store it over a barn cellar containing manure. The air is permeated with the fumes arising from the manure, oftentimes carrying with it the germs of disease, affecting everything it touches. Such hay is unfit for the cow. Hens should never be allowed to run at will about the barn or come in contact with the hay. Always keep the manger clear of any refuse that the cow declines to eat.

Manure should always be placed outside the barn.

A little care in the observance of the sanitary conditions of the barn, a few extra moments' labor each day in the care of the cow, with a sufficietn amount of healthful food, will turn the scale in favor of a profit to the owner, when open barns, neglected stock, poorly fed, will involve a loss. Keeping cows constantly in good condition is the secret of many a good farmer's success.—American Humane Education Society.

TERSE DIRECTIONS FOR SILO FILLING

L. B. Bassett.

Silo filling is a hurry-up job in order to get all the growth possible and to avoid frost. Consequently everything should be made ready for a continuous run when cutting starts.

The cutter should be put in first class shape, special attention being given to the knives and knife heads. An extra set of knives should be on hand. The blower, fan and both knives should run at the rated speed. Poor joints and a leaky blower mean more power and clogging. The cutter bar should be in good condition and the knives and bar properly adjusted to each other. If any extras are likely to be needed for the corn binder they should be on hand.

Corn Should Be Dented

Authorities agree that the nearer ripe the corn is, if it contains enough water to make good silage, the sweeter the silage will be and consequently the more palatable; also the greater the amount of digestible nutrient it will contain. Roughly speaking, a majority of the ears should be dented. When large quantities are to be cut it is necessary to begin before the corn is at its best, otherwise the last cut will be too ripe.

Length to Cut.

Short-cut silage means greater silo capacity, less air-space, and if the corn is a little dry, less likelihood of spoiling. Short cutting, also, means reduced capacity of the machine and more power. If the stalks are coarse and woody the waste is greater in long-cut silage. In fine stalked corn that is very green there is less difference between the long and short cut.

Water, If Corn is Dry.

When corn is very dry from being overripe or frozen, it is often necessary to apply water to the silage in order to make it keep. Enough water should be applied to moisten thoroughly the whole mass. There is little danger of applying too much water.

Power Needed.

Roughly speaking it takes 1½ to 2 horse power gas for every ton per hour of green corn cut ½ inch in length and blown 30 feet high. From this it will be seen that to cut 10 tons per hour ½ inch long and blow into a silo 30 feet high will require approximately a 15 or 20 horse power gas engine. If the same amount per hour is cut ¼ of an inch long it will require considerably more power.

"Eat less candy. The Allies need the sugar," says the Food Administration. "All right," our patriotic farm boys and girls are saying, "Nuts and popcorn are better anyway."

Remember the heavy snows of last winter?
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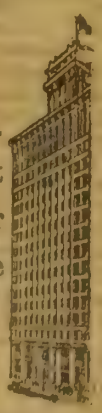

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Care, Operation and Adjustment of Wheel Plows

By Carl H. Gamble.

Any plow, when properly assembled and correctly hitched to, will do good work and operate satisfactorily in any condition of soil for which the particular bottom on that plow was designed. Where wheel plows do not perform to the satisfaction of the user, it should be understood that either the plow is not equipped with the right kind of bottom for the soil in which it is being used, or some of the rules for the proper operation of a wheel plow have been violated.

I want to talk with you in a general way about the care, operation and adjustment of wheeled plows.

Keep Directions

Discover first whether your new plow has been correctly assembled. The printed and illustrated directions supplied by manufacturers are your most accurate guide in this matter. Get a copy of these directions when you buy your plow.

Keep in mind that a wheel plow, properly adjusted, will run with its entire load on the wheels. In hitching, lengthen the traces so that your load will be equally distributed on all three wheels. Too close a hitch will cause the team to carry a good portion of the load that should be on the front wheel. This makes hard work for the team and makes it difficult to control the plow. Weight must be on the front furrow wheel in order that the wheel may guide the plow and keep it cutting full width furrows at all times.

Furrows Not Alike.

A common complaint is that furrows are not uniform. This applies particularly to gang plows or wheel plows with more than one bottom. This complaint may be due to any one of the following faults: First, frame of plow not level; second, improper rolling coulter adjustment; third, improper front furrow-wheel adjustment; and fourth, incorrect hitch.

The frame should be parrallel with the surface of the field. If the field being plowed has a slope, the gang-plow frame should slope accordingly; otherwise one plow bottom will run deeper than the other and the furrows will not be uniform.

It is very important that both rolling coulters be adjusted an equal distance—outside or to "land"—from the shin of the plow. For instance, if you are using a gang plow with two 14-inch bottoms, and the front rolling coulter is set flush with the shin of the plow, this robs the front plow bottom of from one-half to five-eighths of an inch of its furrow slice. With the rear rolling coulter set from three-fourths of an inch to one inch to "land," it adds that much to the rear plow furrow slice. This causes the front plow to turn a 13½-inch furrow slice and the rear plow 15-inch, and as a result the furrows are not uniform.

It is also important that the front front plow can freely cut a full-width furrow. If the front furrow wheel is adjusted so that when it is run in the corner of the furrow the front plow cannot cut freely a full-width furrow, whereas the rear plow, owing to the spacing of the beams, must always cut a full-width furrow—here again the furrows will not be uniform. With the rolling coulters properly adjusted, measure the furrow slice from the rolling coulter to the edge of furrow wall. This, on a 14-inch-bottom gang plow, should measure 14 inches. Adjust the front furrow wheel "in" or "out" until this measurement is obtained.

And here again comes importance of correct hitch. With the frame level, rolling coulters properly adjusted, and furrow wheel properly adjusted, it is still possible to hitch as low or so far out of line on the clevis of the plow that the front furrow wheel will not run snugly in the corner of the furrow. Lengthen the traces and make adjustments on the cross clevis of the plow until the front furrow wheel runs snugly in the corner of the furrow.

Difficult Penetration.

The complaint of difficult penetration is usually encountered the greatest number of times during the summer and fall plowing season when the ground is hard and dry. This may be caused by any one or more of the following reasons:

First, dull shares or improperly sharpened shares; second, dull rolling coulters; third, improper rear axle collar adjustment; fourth, adjustment of bail castings; and fifth, adjustment of foot-lift pivot casting.

The share must be sharp and shaped properly in order to penetrate freely. Take a new share along to your blacksmith when you go to have the old shares sharpened, and have him sharpen and "set" the old shares as nearly as possible like the new share. Different plow manufacturers have different rules for the sharpening and "setting" of their shares, so if you will just take a new share along, regardless of what make of plow you are using, you will get the best results.

Dull rolling coulters interfere with the free and easy peneration of the plow. When a rolling coulter becomes blunt and full of nicks and notches, it is merely like a gauge wheel. Keep the coulters sharp, either by filing or grinding. When the ground is hard and dry, the coulter should be set so the hub is well back of the point of the plow. I recommend at least three inches. If you are plowing in "stubble land" it is not necessary to run the coulters very deep, as the chief function of the coulter here is to cut whatever trash is found on top of the ground. It will accomplish this best if it is running reasonably shallow—say from one and one-half to two and one-half inches.

In "sod" plowing there are roots in the soil that should be cut, and the coulter should be set reasonably deep—say, within a couple of inches of as deep as you are plowing.

The rear wheel is the landside of the wheeled plow. The frame is supported on the rear axle of most wheel plows by means of a set-screw or clamped collar. If this adjustment is disturbed and the frame permitted to slide on the axle, the rear end of the plow is too low; weight is supported on the landside in place of on the rear wheel, and the plow will have a tendency to run like a sled with the heel down and point up. This certainly interferes with proper penetration. When this condition exists, raise the frame on the rear axle until there is at least one-half inch clearance under the heel of the landside when the plow is standing in the furrow or on a level floor.

The bail casting on most gang plows are adjustable in order to enable the manufacturer to get them located exactly level when the plow is being assembled in the factory. These adjustments should not be disturbed in the field. It is possible for an inexperienced operator to change the adjustments of these bail castings and get the point of the plow so low that it will have a tendency to run on its "nose." If the adjustment of these bail castings has been changed since the plow left the factory, the paint marks or condition of paint on the beams will enable the operator to set these castings back where they were originally.

If the pivot casting, where the foot lift is attached to the beam, is adjustable, it is made so for the same reason that the bail castings are adjustable, and that is to enable the manufacturer to locate the pivot point at exactly the right place when the plow is being assembled in the factory. On most plows where this casting is adjustable, it is plainly marked by a cold chisel at the factory, so that in case this adjustment should ever be disturbed the operator will have no difficulty in correcting it.

Heavy Draft

Practically all of the causes discussed under difficult penetration also apply as a cause for complaint of heavy draft. If the shares or rolling coulters are dull, the plow pulls harder. If adjustments have been disturbed, taking the weight from the wheels and causing it to be dragged in the bottom of furrow, this causes heavy draft.

In addition to these points it is important that the bearings be well greased. When you hear a plow wheel squeak, just remember that it takes power to make it squeak. A little grease will stop the noise and make the plow run much lighter.

Most plows are constructed with an adjustment on the rear axle casting, to enable the operator to adjust the rear furrow wheel so it will carry practically all of the landside friction. When the landside shows excessive wear, make this adjustment so as to move the rear furrow wheel toward the corner of the furrow. Both the weight and side pressure should be carried on the rear wheel instead of being dragged on the landside.

If any reader of this article should like more information on any subject pertaining to the care, operation and adjustment of plows or cultivators, please feel free to write me at the address indicated at the top of this article, on page 3.

FARMERS

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The Youth's Companion subscription price, $2.00, will not be increased. The 52 issues of 1918 will be packed full of the best stories by the most popular writers. The Editorial Page, the Boys' Page, Girls' Page, Family Page and all the departments will bring a vast amount of cheer, good entertainment and information for every reader in the family circle.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Clean up around the place before the winter storms come, for the looks of things and for the health of the family.

Three cents is the cost of postage for a letter these days. If you don't put the extra one cent on before the letter starts, the one who receives it at the other end has to.

The farmers are to be congratulated on the part they took in the Second Liberty Loan. Many of them bought bonds and some banks report, "they have paid up in full on their bonds."

Watch the price of wool climb, another reason why we should have a few sheep on the farm. The clip of wool will help pay the cost of care and feeding. Profits comes from the lambs.

Save your straw. Make good use of it as a ration with other feeds. Straw is now valuable and each farmer should take good care of his and use it to the best advantage.

Make the best use of your hay and all kinds of feed. Feed for livestock is scarce, not in Utah or Southern Idaho, but in nearby states and the price of hay is sure to be high again this winter.

Some calves should be sent to the block as once. They are the scrubs. They will not pay a profit for keeping them. Every farmer knows enough to keep the calf that will pay him for doing it.

Make special effort to render granaries, barns, etc, proof against rats and mice. A better plan is to trap or poison them. Rid your farm of these thieves and do not be satisfied until you have done away with all of them.

Save your feed, do not allow any to go to waste. As a matter of economy and patriotism use every bit of "waste feed" and then you may have some of your hay to sell. There will be a good market for it at a fair price.

We have plenty of apples, why not use more of them and help conserve our other foods. We offer some very helpful suggestions this week on another page about the best kind for home use.

Do all the fall plowing possible. Every foot of ground that you can turn over now will help you in your work next spring.

The farmer today has plenty of advisers. Nearly every one is willing to tell him what to do. It is his problem to accept and use anything that will help to produce more, and better conserve what he produces.

Proper care of calves during the winter months is important. Plenty of good feed, a roomy, well lighted place in the barn where they can be kept warm and have plenty of exercise is necessary. Keep them growing all the time.

How about your letters? Did you think to put the extra one cent on, or a total of three cents for each letter? This is only one of the many war taxes that started on November first. Many people feel, however, like one man expressed himself, "I do not care if it will help win the war."

When some banker back east said the farmers were not loyal, he could not have had in mind the farmers of our states. Farmers here have produced a big crop of food supplies and when they asked for Liberty Bonds they responded very liberally. No class of people are more loyal than the farmers.

The value of keeping a farm record of all accounts is now recognized by many of our best and most successful farmers. Learn which branch of your farming pays the best. No other one thing will help you more to learn the value of good farming than to keep accurate account of all your farm work.

UTAH PRODUCTS WEEK.

The Manufacturers Association of Utah have asked that November 11 to 17 be observed as Utah Products Week.

Utah is noted for many of her manufactured products such as sugar, canned goods, cereals, flour, packing plant products, candies, shoes, clothing, knit goods and many others.

Governor Bamberger, in his proclamation says: "I recommend that during this week the public co-operate with the Manufactors Association of Utah and the various civic organizations in giving a State wide significance to the movement to purchase goods made in Utah."

DOING OUR "BIT"

When the Second Liberty Loan was started we offered our service and the help of the Utah Farmer. The following letter is self explanatory.

COUNCIL OF DEFENSE
Salt Lake City, Utah.
November 5, 1917.

Utah Farmer,
Attention Mr. J. M. Kirkham,
Lehi, Utah.
Gentlemen:—

Please accept our appreciation for the advertising space and co-operation you rendered in the last Libery Loan Campaign. It is greatly appreciated by the Executive Committee.

Yours truly,
Clarence Bamberger,
Chairman.

MORE HOGS NEEDED

We are converted that there is a shortage of livestock in the world today.

It would seem that any farmer can profitably raise a few hogs or a great many for that matter, when they understand the policy and plans of the Food Administration as explained in the article on the first page of this issue.

With the help of practical hogs growers and experts they plan to see any farmers who produces hogs will make a fair profit.

With alfalfa pasture, barley and other grains that we produce hogs can be made ready for the market right here at home at as low a cost as they can be grown any where.

More hogs are needed for the winning of this great war, why not make some money and help the government increase our meat supply for our own use, our own boys at the front and for our allies, whom we must help feed.

If you are interested and do not have the sows to breed write us and we will try and help you secure the number you can profitablly grow.

WE CAN HELP THE SUGAR SHORTAGE

From the letter on the first page of this issue one can see that the Food Administration is going to look to the sugar beet growers of the west to help them relieve the sugar shortage.

A greater production of sugar beets is necessary. Think of France with only 12 pounds for each person a year, before the war they were consuming about 90 pounds per captia.

We must share part of the 7 pounds that each person is now using every month with them and on top of that ought to help grow more sugar beets in order to increase the supply of sugar.

The sugar shortage in the eastern states shows how serious the situation is at the present time. People back there can only buy one or two pounds at a time.

The increased price of beets for 1918 and promise of machinery to help us do the work, should help to increase the acreage for next year.

Mr. Hoover makes a strong appeal to the beet growers and we believe they will answer with an increase production for next year.

WHAT WILL PRICE OF HAY BE

We have produced a wonderful crop of hay this year. In some sections of the United States the hay crop is very short. We quote from a recent editoral of Breeders' Gazette.

The American farmers face the worst shortage of hay ever experienced. They do not realize it. It will cost some of them dearly before grass comes green next spring. * * * Several men in Illinois canvassed together the situation a few days ago, and finally concluded they would probably be compelled to pay $35 or $40 a ton for hay before another crop is harvested. * * The feed situation throughout the country where live stock is produced demands the most serious consideration. Many owners of stock are tempted by prevailing high prices to reduce their herds and flocks. * * *

We refer to editorial in order to emphaisze what we said last week about making the best use of your hay. Do not allow any to go to waste. Do this for your own profit and good and also to help the other fellow, by having a few surplus tons to sell.

ABOUT THE UTAH FARMER

To make our paper what we really desire it to be, it must serve our subscribers. We are not printing it for a pass time, but to help you in your work and if it accomplishes this aim it will be profitable to us.

We need and want your support for the paper. Just now a number of subscriptions expire and we want each one to renew. Send your money in with out putting us to the extra expense of sending several letters.

We want to help you and we ask that you send us any suggestions how we may improve the paper. Our desire is to help improve agricultural conditions. Help you overcome the farm problems you have to meet. We are in a position to secure the very best experts and practical farmers in doing this.

We want you to support the advertisers by answering their advertisements. They will go to a great deal of trouble and expense to tell you all about their products. You can with safety deal with our advertisers because we are very careful about what advertisements appear in our columns.

We want you to write to the paper, tell us of your successes of your problems, write to our advertisers, do a little boosting for the Utah Farmer.

We are not asking very much but with all working together we will give you a paper that is worth while, one that will help you.

NCREASE PRODUCTION OF SUGAR BEETS NECESSARY

(Continued from page 1)

We have been asked to conserve the ugar supply and to help increase the roduction next year.

A saving of one-third in the conmption of candy and sweet drinks, ould have saved the situation now nfronting the northeastern area of e country. The American people n assist materially by reducing eir present consumption of these xuries..

As a preliminary step toward the nservation of sugar against a furer shortage of that commodity, a legram has been sent out by the nited States Food Administration rging the reduction of sales to ndy manufacturers of one half eir usual amount.

Our Allies are thrown upon the Vest Indian market for a large part f their sugar which they formerly btained from other sources. They ave been forced to reduce their conmption of sugar to less than onefth of our average. Their need is r opportunity for common service. Here is copy of a telegram sent to mmittee distributing our sugar pply.

"We consider it essential to reduce nsistently sales of sugar for proction of candy. Must be reduced order to provide household and llied needs. This request applies to anufacturers of gums, cordials, irups, and luxuries. Manufacturers f food products should have preferce, condensed milk companies comg first."

ugar Going Out of United States More Than Eighteen Times Faster Than It Did Before The War Began.

The Food Administration authorizes e following:

The vital importance of conserving ugar supply is shown by sugar exort figures compiled by the United tates Food Administration.

In 1917 the United States exported ver eighteen times as much sugar as had averaged in the three years beore the war. In 1916 these exports our western European allies were inteen times as great as the average or the three prewar years. In 1916, f all our sugar exports to the westrn allies, 70 per cent went to Engand. By contrast, in 1917 France reeived 62 per cent of those exports.

Over Billion and a Half Pounds in 1916.

In 1912 our total sugar exportations mounted to 83,747,751 pounds; in 913 to 47,987,761 pounds; in 1914 to 2,323,615 pounds. They increased to 81,710,510 pounds in 1915, and reachd high-water mark in 1916, when the otal was 1,665,895,639. In 1917 the otal was 1,254,551,280 pounds.

The western allies, who in 1914 reeived but 5,195,879 pounds, in 1916 reeived 1,328,242,883 pounds, and in 917 a total of 766,097,128 pounds.

The northern neutrals, Sweden, Norway, Denmark, and Holland, who rior to the war were purchasing no ugar from the United States, last ear bought 140,944,415 pounds.

One curious feature shown is the reat increase in the exports to Mexico, which rose from 7,175,395 ounds in 1913 to 35,807,609 in 1917. This is partly due to the failure of he Argentine beef crop for the past wo years.

South America, which prior to the war purchased little more than 1,000,000 pounds of sugar from the United States, in 1917 took 142,853,818 pounds.

The decrease in our sugar exports of 1916 as compared with 1917 of 411,000,000 pounds is more than accounted for by the decrease in our shipments to England of 734,000,000 pounds.

The great increase in our exports to the western allies is directly due, of course, to the cutting off of the English imports from the central powers and Belgium, together with the decrease in sugar crops in France and Italy.

We practically exported no sugar to the northern neutrals before the war. In 1917 our exports to these countries constituted 11.2 per cent of our total exports.

In 1913 Norway imported 48,138 tons from Germany. Denmark, 9,485 tons; Holland, 28,379 tons.

England's Reduced Consumption.

England before the war had the largest per capita consumption of sugar of any nation. This amounted to 93½ pounds per person per year. This has now been reduced to 26 pounds per year, or about 1 ounce per day per person. Prior to the war England received 38.55 per cent of her sugar supply from Germany, 15.73 per cent from Austria-Hungary, 9.43 per cent from the Netherlands, 6.7 per cent from Java, 7.1 per cent from Cuba, and only 1.14 per cent from the United States.

The United States consumption of sugar averages about 90 pounds per year per person. The Food Administration has asked the saving of 7 ounces per week per person, and if this were done it would still leave us a per capita consumption of sugar of 67 pounds per annum, as compared with the 26 pounds in England, 18 pounds in France, and 12 pounds in Italy.

SEED BED FOR WHEAT

Poor Stand, Many Times Due to Poorly Prepared Soil.

Give the seed every chance possible. chance of having a low percentage of germination, due to lack of thorough preparation of the soil.

Fall Plowing.

Just as soon as there is enough moisture in the soil so that it will not turn up in clods, it should be plowed to a depth of seven inches if possible. Within a few hours after plowing, the soil should be well worked down with a disk, harrow, or roller, in order that the upper three inches, at least, may be finely divided with a well compacted condition below, which is very necessary for a well formed wheat seed bed. In addition to the fine condition of the soil all weeds have been killed. This sort of preparation is only necessary in case a stubble is left by the preceding crop. If a cultivated crop precedes the wheat, a very good seed bed can be prepared by simply disking and harrowing, providing there is no large quantity of weeds. If there is a large number of weeds present, it would be advisable to plow shallow and then disk.

Good Point of Thorough Tillage

If the soil is plowed early in the fall, all water, which comes with early rains, is conserved, in addition to holding the water which is already in the soil, all for use of the wheat plant. Also, the chances for more available plant food material are much greater, for with a sufficient amount of moisture in the soil, food for the plant is continually going into solution which is then ready to be taken up by the roots. By bringing about a fineness of the soil through thorough cultivation the cappilary action is increased and this means that water is brought up from greater depths to the roots of the plants. Aeration of the soil becomes greater when proper methods are used to work it. A sufficient supply of oxygen is not only essential to the plants themselves, but is very necessary to bring about efficient bacterial action, which assists so much in providing available plant food for all vegetation. With the fine mulch on the upper few inches of soil there will be very little moisture lost by evaporation and at the same time it gives an ideal home for the germination of seed.

With a little more attention paid to the importance of thorough tillage and proper methods of seed bed preparation, there will be a wonderful increase in our wheat crop.—E. B. Hitchcock, Department of Soils.

THE TRUTH

When he dismissed her she had the audacity to ask for a recommendation. He wrote: "This young woman has been in my employ for a week and I am satisfied."

OLD FASHIONED CORN MEAL

(Continued from page 3)

good old fashioned corn meal days. Not all mills are prepared to grind corn meal but there are many establishments, even on farms, where feed grinders are available. Perhaps they can not be adjusted to grind meal sufficiently fine for table use the first time that it is run through but let it be ground, if need be, a second or a third time. Corn meal should not be ground too fine, in any event.

Many boys and girls grew an acre or more of corn this year.

They can convert their better ears into a high-priced and a very valuable human food and thus help to conserve our wheat stocks if they will hand pick the ears and shell them and have the corn ground into meal. Sack in five or ten pound packages and sell them to the neighbors or to the neighboring stores.

This manner of marketing will bring much larger returns for the crop and the neighbors will enjoy having corn bread and mush that will harden back to the good old days when corn bread was an important part of the evening meal, along with good wholesome milk and then, too, corn mush served hot or allowed to cool and then fry were equally good. It is important to remember that these starchy foods need to be very well cooked or baked.

Don't allow soft ears to be used for corn meal.

Let's have some more old fashioned corn meal.

The worry cow would have lived till now
If she had not lost her breath;
But she thought her hay would not last all day,
So she choked herself to death.

HAY PRICE WILL SOAR STEADILY

Utah farmers and stockmen may look forward to constantly increasing prices of hay, according to the November 1 bulletin issued by the Twelfth district federal reserve bank at San Francisco, which says:

"Constantly increasing hay prices, with alfalfa now quoted at $25 a ton, are causing many farmers in central Oregon to ship their breed'ng cattle to market. Purchases by large interests to feed sheep during the winter and by the government for the 16,000 head of horses and mules at the American Lake cantonment are given as the contributing causes."

The bulletin says the hay crop is about normal, with decreases in Oregon and Washington and increases in California, Idaho and Utah.

In southern Idaho the prune crop is only 40 per cent of the normal crop; the loss, the bulletin declares, being due to abnormally hot weather in October.

PROFITABLE HOGS

are the healthy ones; and the problem of the hog raiser is to keep them so.

For scours, thumps, distemper and other ailments, try Sloan's Liniment. Quickly effective and promptly relieves Have it always handy. You will find many uses for Sloan's Liniment in your home.

At all dealers. 25c - 50c - $1.00. The $1.00 bottle has six times the amount of the 25c size.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE
AND
SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,
Salt Lake City, Utah.

Send your orders for Butter Wrappers today to the Utah Farmer.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

HOME

SAVORY POTATOES FOR HOME-SUPPLIES

When all the family gathers around the comfortable supper table every housekeeper takes pride in the substantial hot dishes she places before them. Nowadays an all-meat dish is out of the question, but a combination with potatoes will stretch the meat flavor and make an equally satisfactory offering.

Here are some potato combinations that will please a hungry supper crowd.

Potato Pie.

To 1 quart of hot boiled potatoes add enough hot milk to moisten. Season with butter and salt. Mash in kettle in which they were boiled and beat with a fork until light. Stir in ½ cup of minced ham. Have ready 4 hard boiled eggs and ½ cup of stock or gravy. Arrange potatoes and sliced eggs in dish in alternate layers with potatoes forming top and bottom layers. Moisten with the gravy. Brush over the top with milk or egg and brown in hot oven.

This dish can be arranged in three layers with the middle layer some kind of meat hash bound together with egg or thickened gravy.

Potato Turnovers.

Boil and put through the ricer enough potatoes to measure a pint. Add 1 well beaten egg, 1 tablespoon of flour and season with salt. Turn on floured board, and roll out in circles size of saucer. Place on each a large spoonful of dry hash seasoned with onions and parsley chopped fine. This hash should be dry or bound together with thickening. Double over and pinch together like a turnover. Place on greased baking sheet and brown in hot oven. Serve with a thickened sauce made from the gravy in which the meat was cooked or with a tomato sauce.

Family Potatoes.

Use 6 cold or freshly boiled potatoes. Cut into quarters and put in saucepan with a pint of gravy or soup stock. Add 1 chopped onion, salt and a little red pepper. Simmer on back of stove half an hour before serving.

Potato Roll.

Heat 1 pint of mashed potatoes and ½ cup of milk in saucepan. Add 1 tablespoon of chopped parsley, salt, and a little red pepper or paprika. Stir in 4 well-beaten eggs and mix thoroughly. Remove from fire and beat until light. Heat 1 tablespoon of fat in frying pan, and spread the potato mixture evenly over the pan. Cook until golden brown. Roll like an omelet and serve smoking hot.

Red pepper, or paprika, is preferable to black pepper in these potato dishes.

POTATOES WITH MEAT.

Scientific Basis for This Combination —Not a Mere Food Prejudice.

Meat and potatoes are a good food combination, and may be a better diet than bread and meat, according to the United States Department of Agriculture. At this time, when a plentiful supply of potatoes makes them cheap, and when wheat and flour are high, the average family, says the department, may find it wise to eat less wheat foods and to use potatoes instead. Potatoes at $1 a bushel give more energy and good mineral bases than bread at 5 cents a half-pound loaf.

Mineral Content of Potatoes Valuable.

Most persons like potatoes with meat, and they furnish valuable starch; but it is pointed out that mere starch is not all that is needed, and that the mineral content of potatoes is of value in counteracting the acid-forming substances in meat. These acids are present also in cereals, while vegetables, fruit, and milk have an excess of neutralizing alkalis. Therefore potatoes are better with meats than are rice, bread, and macaroni.

Furthermore, potatoes assist in regulating the digestive tract to a greater extent than white flour, macaroni, and polished rice. Potatoes may be added to the diet in bread itself by mixing a portion of finely mashed potatoes with flour.

BREAKFAST FILERS— THE POTATO LEADS

Hashed-Brown Potatoes.

Chop 6 boiled potatoes and season with butter, salt, and onion and parsley chopped fine. Moisten with milk and mash lightly. Place in a hot greased pan, preferably an iron skillet. Spread potatoes evenly over the pan. Cook until golden brown. Fold over like an omelet and serve.

Creamed Potatoes.

Cut boiled potatoes into cubes. Cover with milk and cook in a shallow pan until milk is nearly absorbed. To each pint of potatoes add half a teaspon of salt, a dash of red pepper and a little chopped parsley. Thicken the milk with a teaspoon of flour stirred into a tablespoon of fat. Serve in pan in which cooked.

Savory Potato Loaf.

3 cups hot riced potatoes, ½ cup of sausage meat, 2 tablespoons of milk, 1 teaspoon chopped parsley, ½ teaspoon salt, ½ teaspoon grated onion.

Mix together all ingredients. Place in a baking dish, and bake half an hour. Serve from dish.

THAT SKIM MIK—SAVE IT

Save every drop of skim milk. It is a valuable food. Use it in your kitchen and on your table.

It is valuable as a beverage, in cookery, as cottage cheese,—too valuable to waste, whether it comes through your own separator or the separator at the creamery—too valuable to be thrown away, or fed to farm animals, if it can be used for human food.

At creameries where whole milk is handled, skim milk is often thrown down the drains. Creameries ought to make their skim milk into cottage cheese.

Farmers ought to make cottage cheese at home. Skim milk so used will supplement our meat supply, for cottage cheese is one of the best substitutes for meat. Use it in your cooking.

Make and eat cottage cheese and encourage others to use it.

Make puddings and soups and bread with skim milk.

SCHOOL LUNCHES

Foods That Are Both Nourishing and Palatable Should Be Propvided to Meet Body's Needs.

Don't let the school lunch be merely something which will fill the lunch box in the morning and be only a sop to stay the kiddies' appetites from noon until night. Make it a real contribution to the food which the children require to meet the needs of their growing bodies and active brains—to satisfy their appetities and keep them in health.

These are the suggestions of home-economics specialists of the United States Department of Agriculture, now that millions of the future citizens of the country are again eating their midday meals from box, basket, bag, or confectionery shop instead of from the family table under watchful parental eyes.

Expensive Foods Need Not Be Used.

The preparation of luncheons which will fill the needs of the child's body does not mean the use of more expensive foods or the expenditure of greater effort, the specialists point out. In many cases both expense and work will be lessened. What is needed for the preparation of more satisfactory lunches is merely that parents and "big sisters," or whoever fills the lunch box, shall inform themselves of certain facts in regard to the choice and combination of foods. The need in many cases is for neither more nor less food but for the representation of needed food groups. The necessary facts are set out plainly in Farmers' Bulletin 712, "School Lunches," which may be had free so long as the supply lasts by application to the United States Department of Agriculture, Washington, D. C.

The following suggestions are among those made in the bulletin for well-balanced lunches to be carried to school.

Basket Lunches.

1. Sandwiches with sliced tender meat for filling, baked apple, cookies, or a few lumps of sugar.
2. Slices of meat loaf or bean loaf; bread and butter sandwiches; stewed fruit; small frosted cake.
3. Crisp rolls, hollowed out and filled with chopped meat or fish, moistened and seasoned, or mixed with salad dressing; orange, apple, a mixture of sliced fruits, or berries; cake.
4. Lettuce or celery sandwiches; cup custard; jelly sandwiches.
5. Cottage cheese and chopped green-pepper sandwiches, or a pot of cream cheese with bread-and-butter sandwiches; peanut sandwiches; fruit cake.
6. Hard-boiled eggs; crisp baking-powder biscuits; celery or radishes; brown-sugar or maple-sugar sandwiches.
7. Bottle of milk; thin corn bread and butter; dates; apple.
8. Raisin or nut bread with butter; cheese; orange; maple sugar.
9. Baked bean and lettuce sandwiches; apple sauce; sweet chocolate.

DRINK BECCO
BETTER THAN BEER

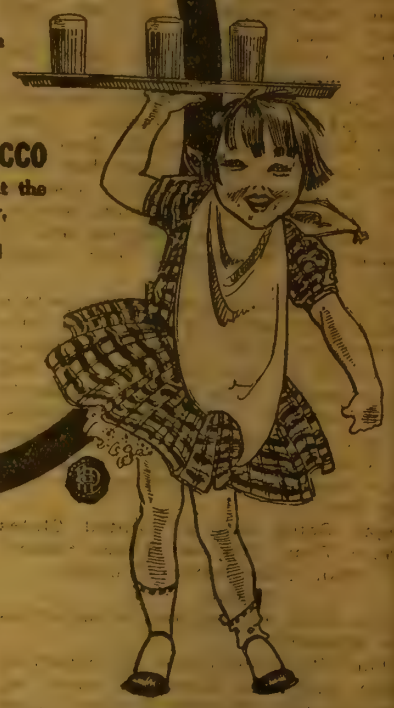
A delicious beverage that satisfies your natural appetite pleasantly, wholesomely. A beverage with snap and sparkle—a tang that delights.

"Better by test than all the rest."

Becker's Becco makes you glad that the state did go dry.

If your local dealer hasn't BECCO order from

Becker Mfg. Co., Ogden, Utah.



Home Visitors Excursions
EAST
Via
UNION PACIFIC SYSTEM
OVERLAND ROUTE
O.S.L.R.R.

Tickets solds— November 24; 27; December 20, 22, 24
LIMIT— Three months from date of sale.

Following Round Trip fares will apply from Salt Lake City, or Ogden. (Rates subject to war tax after November 1, 1917)

Denver	$27.50
Colorado Springs	27.50
Pueblo	27.50
Omaha or Kansas City	42.50
St. Louis	53.70
Memphis	62.50
Chicago	61.50
Minneapolis or St. Paul	58.94

Correspondingly low rates from many other points to many other points. See Agents for details.

L. J. KEYES,
District Passenger Agent,
Hotel Utah.
D. S. SPENCER,
General Passenger Agent,
Salt Lake City, Utah.

Best Apples For Home Uses

By Dr. M. C. Merrill, Horticulturist, Utah Agricultural College.

"Apple Week" with its joys of apple eating causes us to center our attention on the question as to which varieties are best for different purposes. In listing apples, the first consideration should be the season when they are at their best. And right here let it be said that an injustice is constantly being done to certain varieties by contrasting them at a season when they are not at their best with varieties in season at that time. For instance, it is unfair to the Ben Davis or the Gano to compare them with the McIntosh or the Wealthy in the early fall when the latter varieties are at their best, while the former will keep splendidly and will not be at their best until the winter or early spring, when the McIntosh and the Wealthy will be gone, if kept in ordinary storage.

Another point to keep in mind is this: Because we are familiar with apples that are a splendid success in the East is no guarantee that those varieties will do well here. It is well for us to stick to the standard varieties that are successful in Utah rather than let our early prejudices induce us to grow apples that are not adapted to our western conditions. The Baldwin, for example, is grown very successfully and abundantly in New York and Pennsylvania but it has no prominence in Utah.

There are several uses for which apples are desired and we should not expect to find any one variety that will meet all requirements. The apple for home use may not be the best for commercial purposes, where special conditions of shipping and marketing must be fulfilled. For the home, some apples are better for eating without being cooked, some for dessert, some for sauce, some for baking, some for summer use, some for fall, and some for winter and spring.

In the following table are given in alphabetical order some of the fall and winter varieties commonly and successfully grown in Utah which are adapted for different home uses. The season given is that when the apples are kept in common storage, rather than cold storage, the latter facilities keeping fruit longer in good condition, than can be done in the ordinary home. The data on the quality of the cooked apples are from results secured at the Oregon Agricultural College by Prof. Milam and Miss Gardner.

FALL AND WINTER APPLES.

Variety	Season	Eating Uncooked	Sauce	Quality for Pies	Dumplings	Jelly	Marmalade
Arkansas (Mammoth Black Twig)	Dec. to May	Good	Fair	Very good			
Arkansas Black	Dec. to May	Good					
Ben Davis	Jan. to April	Fair	Poor		Fair		
Black Ben Davis	Jan. to April	Fair	Fair			Fair	Fair
Delicious	Oct. to Dec.	Very good					
Esopus (Spitzenburg)	Nov. to Feb.	Very good to best	Good				
Gano	Dec. to April	Nearly good	Good	Very good	Fair	Fair	Fair
Grimes Golden	Nov. to Jan.	Very good to best	Excellent	Very good	Very good	Fair	Fair
Jonathan	Nov. to Jan.	Very good to best	Fair	Very good	Good	Very good	Very good
Lawver	Jan. to May	Fair to good	Good	Very good	Fair	Excellent	
McIntosh	Oct. to Dec.	Very good to best	Fair	Very good			
Missouri Pippin	Oct. to Jan.	Fair to good	Good	Good			
Northwestern Greening	Nov. to April	Fair to good	Fair				
Rhode Island Greening	Oct. to Feb.	Very good	Fair	Good	Fair		Good
Home Beauty	Nov. to Apr.	Good	Fair	Very good	Fair	Very good	Very good
Stayman Winesap	Dec. to May	Good to very good	Fair	Poor			
Tomkins King	Oct. to Jan.	Very good to best	Excellent	Good	Very good	Very good	Good
Wealthy	Sept. to Dec.	Good to very good					
White Winter Pearmain	Dec. to March	Very good to best	Poor	Very good	Poor	Very good	Fair
Winesap	Jan. to May	Good to very good	Fair	Very good		Good	Good
Winter Banana	Nov. to March	Good to very good	Fair	Poor			
Wolf River	Sept. to Dec.	Fair to good		Poor			
Yellow Bellflower	Dec. to April	Fair	Very good	Very good	Good	Fair	Good
York Imperial	Jan. to April	Good to very good	Fair	Good	Fair	Fair	Fair

FIGHTING GOPHERS AND SQUIRRELS

By W. M. Osborn.

Pocket gophers are becoming a greater nuisance, and the importance of combating them in some way is becoming more and more apparent. Pocket gophers are one of our most destructive field pests. In numbers they seem to be increasing, a fact that should not be overlooked by farmers who are growing alfalfa. The conditions under which these animals live make their complete extermination almost impossible. However, the farmers of any community, if willing to practice vigilance and co-operation, can secure approximate immunity from the ravages of the pest. By vigilance, the individual farmer, also, can keep his fields practically free from gophers.

Alfalfa, it seems, furnishes ideal conditions for the life of pocket gophers. The roots of alfalfa are thick and succulent, and extend deep enough to supply the wants of these animals when they burrow below the limits of frost. Furthermore, the ground in an alfalfa field is not broken up for several years, and the use of the disk or harrow on the surface does not in the least disturb pocket gophers.

Information regarding the breeding habits of pocket gophers is as yet somewhat limited. In general, however, it may be said that they rear about one litter of young a year, the litter averaging about four in number. It also seems quite probable that the young are born in March and April, although it may be a little later in the season. Pocket gophers work nearly the entire year, but it would seem that the fight against this pest would be most effective before the young are born.

Going Against Gophers

The most practicable and effective method of ridding fields of this pest is to poison them with baits of sweet potato or parsnips placed in their runways. Such pieces of bait should be cut about an inch long and a half inch square. After cutting they should be washed and drained. Then on the damp baits sift slowly about one-eighth of an ounce of powdered strychnine (alkaloid) and one-tenth of that quantity of saccharine to each quart of baits, stirring to distribute the poison evenly. The strychnine and saccharine may be ground together in an earthen vessel in the proportions named before sprinkling them on the baits.

Gopher runways, which are usually from four to eight inches below the surface, can be located by means of a strong probe about an inch in diameter and three feet long. One end of this probe should be pointed bluntly. About a foot of the other end should be reduced to a diameter of about three-eighths of an inch, and bluntly pointed, also. By forcing the small end of the probe down near the gopher workings, or a foot or two back from the fresh mounds, the open tunnel can be detected as the point breaks through into it. The larger blunt end of the probe is now used to enlarge the opening, a bait is dropped into the run, or perhaps two baits, and the probe opening is closed.

One soon becomes expert in locating the runs, and a man can treat from 300 to 500 gopher workings in a day. Baits need be placed only at two separate points in each separate system, which is usually the home of a single gopher. This method of poisoning has found great favor wherever it has been used.

—o—

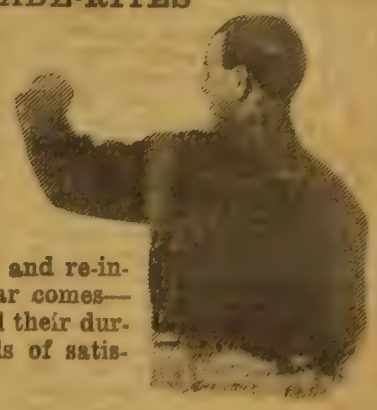
NO DOUBT

This advertisement recently appeared in a western paper:

"Wanted—A man to undertake the sale of a new patent medicine. The advertiser guarantees that it will prove profitable to the undertaker."

Solve The Shirt Problem

By Buying "MADE-RITES"



You will learn what comfort and service a real work shirt can give.

They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

The Evergreen Northwest Invites You this Winter

A few hours to the west of you is a land of mild temperatures, salt breezes, green forests, and beautiful, busy cities.

Now this winter, in your rest time, recreation, inspiration, and the sight of sport, booming business and preparations for war are offered you in

THE GREAT PACIFIC NORTHWEST

WASHINGTON OREGON BRITISH COLUMBIA

Farmers are learning that vacations pay them, as well as other business men. Farmers who take vacations show in cultivating themselves the same care and foresight that they give to soil building.

You, too, will find that money spent in improving your health and broadening your outlook is well invested.

As you enjoy the amusements and study the industries in the cities of this territory of unlimited resources, as you go about in refreshingly mild temperatures by train, automobile and boat, you will get a sense of strength and enthusiasm that will abundantly repay any expenditure of time and money you may make.

Write to us for any information
Pacific Northwest Tourist Assn.
Dept. F, L. C. Smith Bldg.
SEATTLE, WASH.

Flowers bloom every month in the year in the Evergreen Northwest--the finest all-year-'round climate in the World.

N3

THE FOOD SITUATION IN FRANCE

(Continued from page 3)

the uttermost, and everyone realizes that France cannot go on bearing the brunt of the fighting for another three years. Yet, French statesmen are so afraid of the possible effect at time of the peace conference of an admission that France needs assistance now that immediately the idea is suggested there comes an official denial in one form or another. French statesmen, perhaps with reason, are obsessed with the idea that France will get an extremely short end of the stick at the peace conference, if there is a suspicion that she does not go into them stronger than she went into the war and able to fight on for another million years. But how is she going to get anything at the peace conferences if the Allies are not the victors? And how are the Allies to be the victors, unless the people of America know the full truth about the task imposed on them?

This complicated situation makes it extrmely difficult, however, to tell the truth about food conditions in the face of the imminent probabilities of thereby injuring susceptible official feelings.

Food as it Affects the Individual in France.

As I have kept house in Paris during the war, I can speak from experience on the food situation in France as it affects the individual. And let me remark in passing that one learns a great deal, when keeping house, of which one gets no inklings, when living in a hotel and eating in restaurants. One can always go to a restaurant and order a meal and get it. I have heard many visiting Americans, who lived in France in that way, poohpooh the idea that there was a food shortage in the country. If those same persons had had to search the markets before they had their meals, they would have gained a very different idea of the food situation.

Sugar offers an excellent concrete example. In a restaurant one is fairly certain of sugar for one's coffee. Three lumps to a person is the rule. Formerly, the sugar was put on the table in a bowl and one helped one's self. Now, the ration is served to each person separately. Still, one is fairly sure of one's sugar in a restaurant.

But if one is keeping house, one finds that one must have a "sugar card," permitting him to buy a stipulated amount of sugar in a month. The allowance is 1½ pounds of sugar a month, if three meals a day are taken at home, 1 pound if two meals are taken at home and ½ pound if only one meal is taken at home. This means for the person who takes three meals a day at home 18 pounds of sugar a year. The annual sugar consumption per person in America is 85 pounds.

One would not be likely to find this out, if one were living in restaurants in France, but one finds it out very soon, if one is keeping house.

It is soon learned, also, that the "sugar card" does not mean that one can demand a pound and a half of sugar a month, but only that one is permitted to buy that much, provided a dealer can be found who has it to sell. A dealer who has sugar will not sell it to anyone who comes in. He sells only to his own regular customers.

We paid last winter in Paris 11 cents a piece for eggs and $2 a pound for butter and there was frequently neither butter nor eggs nor milk to be had. Private families were allowed to buy one-eighth of a pound of flour at a time. The grocers could not sell flour, only the bakers. The flour mills could not choose their own customers, nor could the bakers and restaurants choose the mills they would buy from. Lists were made out, telling each miller to whom he could sell. This was in order that one section should not be able to eat up the stock of flour belonging to another section, or one baker deprive the customers of another, when all were short.

Wheat Situation in France.

Let me give you the official figures on the wheat situation in France, so that there can be no question.

It is estimated that there will be a deficit of opproximately 5,000,000 tons of wheat in France over the period from September 1, 1917, to September 1, 1918.

The normal annual consumption of wheat in France is from 9,200,000 tons to 9,400,000 tons. France has always been an importer of wheat, her average production for several years before the war being 9,000,000 tons, or slightly less than the consumption. Since the beginning of the war her production has fallen off radically. In 1914 it was 7,700,000 tons, in 1915 6,065,000 tons and in 1916 5,840,000 tons, while for this year the crop is estimated at 4,000,000 tons with a possibility of rising to 4,500,000 tons, leaving for the period from September, 1917, to September, 1918, a deficit of nearly 5,000,000 tons, which must be made up by imports.

Wheat Must Come From America

Where can those imports come from except from America? Italy by reason of her position in the Mediterranean takes the first toll from the wheat of the Far East, while England, of whom the Far Eastern wheat producing countries are colonies, takes the remainder. France can get a ilttle from South Africa. Argentina has stopped the exportation of wheat. This country is the only resource left to France.

I have spoken of the scarcity of flour, resulting from the shortage in wheat. Let us try to see what this means to France. In the first place, it must be realized that there bread is the staple article of food. It is the base of all meals, especially among the working population. Breakfast consists of coffee or chocolate and bread. Luncheon is bread, soup, coffee and often, though not always, some meat or fish and a vegetable. The big dish is bread. Bread is again the base of dinner or supper, however the meal may be called. Bread and cheese will make an entire meal for a French peasant, with a glass of wine to wash it down.

Bread Allowance and "Bread Cards"

The French soldier's allowance of bread was a trifle over a pound and a half a day. On account of the shortage of wheat it has been necessary to cut this ration to a pound and a third a day. And it is not necessary to say that only dire necessity will countenance the cutting of the soldier's ration .

Another thing that has happened is "bread cards" in some localities. There is no national "bread cards" in France as there is a "sugar card," but in some parts of the counrty it has been necessary to restrict the use of bread by local regulation. I have in mind several letters from my friends among the peasants of Brittany, telling of the privations they were enduring because their bread was cut down so much. Remember that bread is the chief article of diet among those people.

France Suffers in Silence.

Do not think they complained. There is no finer souled, stronger or greater people in the world than the French peasants. They are heroes among a nation of heroes. No trial that justice and right could demand could wring a complaint from Josephine Herve, one of the grandest women among a grand race. That simple peasant woman can neither read nor write, but without a word of bitterness she gave her husband to her country, and she is schooling her five sons and raising them for her country. The oldest goes to the army with the next class that is called out. When Little Charlot, next to the youngest of her boys, writes for her and tells what they are enduring, there is no complaint, no bitterness. It is a simple statement of facts in plain and homely language, the story of a peasant cottage told to the child she nursed and loved.

And one cannot help her. One can send her money, but it is not money she needs but bread.

RED CROSSLY SPEAKING

"What are you knitting, my pretty maid?"

She purled, then dropped a stitch. "A sock or a sweater, sir," she said, "And darned if I know which!"

Sent in your orders for Butter Wrappers to the Utah Farmer.

The Greatest Holstein Sale

of the season will be the complete dispersion of the Holstein herd of

THE PIONEER STOCK AND DAIRY FARM, AT BUHL, IDAHO

NOVEMBER 21 and 22

This herd represents many years of study and careful selection, together with the use of the very best blood in the Holstein breed, with the result that today it stands head and shoulder above any herd in the state and possibly the West for profiatble production.

The last year's records of the Buhl Pioneer Cow Testing Association shows that:

This was the only herd to have a cow that produced over 14,650 pounds of milk during the year,

That it was the only herd to have three cows that gave over 14,210 pounds,

That it was the only herd of Holsteins to have a cow produce over 100 pounds of butter in 29 days, or one that produced 683 pounds of butter in the year.

That it was the only herd to have five cows that averaged 600 pounds of butter during the year, and seven to average over 14,120 pounds of milk.

That it was the only herd to have a three year old produce 2,442 pounds of milk in 30 days, and one that produced over 575 pounds of butter during the year.

This herd with 65 per cent of the cows only two years old or under, averaged 472.1 pounds of butter for the year.

This is the class of stuff that will be offered to you at your own price. Cows of this class have never before been offered you at public auction.

The entire herd of 60 females, including twelve head of Registered Holsteins, many with creditable A. R. O. records, will be sold without reservation, together with the herd bulls.

Daisy Pontiac Lad, 107258 now stands at the head of the herd. He is bred along lines that have produced many past and present champions. The dam and A. R. O. cow is by King Pontiac Ted, from a daughter of Sir Korndyke Triromia De Kol, who is by a son of Sir Korndyke Manor De Kol, one of the greatest transmitting sires that ever lived.

The herd carries more blood of the famous KING of the PONTIACS than any other herd in the Northwest. Every female of breeding age is either bred to a son or grandson, or carries some of his blood.

DON'T FORGET THE DATE—NOVEMBER 21ST AND 22ND.

Purchasers from a distance will be our guests at the Buhl Hotel. Transportation from the hotel to the ranch will be arranged.

Write the owner, A. A. Stauffacher, or the clerk S. J. Hammel, both of Buhl, Idaho, for tabulated list, or any further information.

Auctioneers—Colonels, Walter and Clayton.

The High Cost of Wet Feet

Keep your children's shoes water proof with Duck-Back Shoe Oil, and you'll save them from sickness. The small cost of

DUCK-BACK SHOE OIL

cannot be considered when you think of the expenses accompanying sickness. Duck-Back Shoe Oil preserves the leather and makes shoes wear longer.

Today you should order a can of Duck-Back Shoe Oil from your dealer.

Utah Oil Refining Co.

SALT LAKE CITY

When you answer an advertisement always mention the Utah Farmer.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

Better anticipate your requirments now.

Cotton Seed Cake—Corn
Sunripe Stock Food—Hay

BROWN BROKERAGE CO.
Ogden, Utah.

ISTORY OF THE AMERICAN FLAG

By the Smithsonian Institution.

Today probably several million nerican flags are waving serenely the varied breezes of our spacious nd, significant of the calm and gnified, yet deep and lasting patrio- m of the American people. Be this r native land or adopted country, pledge allegiance to that flag, un- ver as we pass, and wear it in mini- ure as a token of our loyalty. And t what do we know about its origin, meaning, and its history? A lec- re trip to the United States National useum in Washington, the national pository of American relics, will ach much concerning the flag.

Naturally there were many forms early flags, especially colonial ges used by the individual Colonies d militia regiments, before the flag the United States was established our Continental Congress on June 1777, now celebrated as Flag Day. is act required that the flag of the ited States be of 13 horizonal ripes, alternate red and white, and at the union be 13 white stars on a e field, but it did not define how any points the stars should have, w they should be arranged, nor ake provisions for additional ones.

Flown at Sea by Paul Jones.

One of the first occasions for public splay of the Stars and Strpies is d to have been on August 6, 1777, en the new flag was hoisted over troops at Fort Schuyler, Rome, Y. John Paul Jones is said to have en the first to fly the Stars and ripes over the high seas, on the nger, in November, 1777. The tional Museum has an early naval star type flag said to have been wn by John Paul Jones during the r of the Revolution.

From the time of the Revolution the rs and stripes in the flag have ried. There were 13 stars during Revolution, 15 in the War of 1812, in the Mexican War, 33 to 35 in the il War, 45 in the Spanish War, d 48 today. The stripes were anged first from 13 to 15, and then ok again to 13. It may be surpris- to know that our national flag is ong the oldest flags of the nations, ng older than the present British ck, the French Tricolor, and the g of Spain; and many years older an the flags of Germany and Italy, me of which are either personal gs or those of the reigning families.

"Star-Spangled Banner."

The American flag of the highest storic and sentimental value to the ole country is in the National useum collections. It is the original ar-Spangled Banner, which flew er Fort McHenry, in Baltimore Har- r, during the bombardment on ptember 13-14, 1814, and was the spiration of Francis Scott Key's mortal poem, now sung as our tional anthem. It is of the 15-star- d-stripe type, adopted after the ad- ssion of Vermont and Kentucky by act approved by President Wash- gton January 13, 1794. The Star- angled Banner measures about 30 et square, though it was probably mewhat longer, and is much batter- and torn, with one star missing, ssibly shot away.

From 1795 this form continued as standard flag until President onroe's administration, when Con- ess enacted that it should thereafter of 13 stripes and 20 stars, with e addition of a star for each new ate, commencing July 4, 1918.

Not Carried by Army Until 1846.

It seems that for many years the rmy did not carry the Stars and ripes in battle, though it had been general use as a garrison flag. The nd forces during this period and be- re carried what were known as tional colors or standards of blue, ith the coat of arms of the United ates, comprising an eagle surmount- l by a number of stars emblazoned ereon, with the designation of the dy of troops. In 1834 War Depart- ent regulations gave the Artillery e right to carry the Stars and ripes. The Infantry and Cavalry ill used the national standards, which mained the colors of the Infantry until 1841 and of the Cavalry until 1887, when that branch of the Army was ordered to carry the Stars and Stripes. From its adoption in 1777, however, naval vessels universally displayed the National Flag.

The history of our flag thus indicates that the Stars and Stripes was not officially carried by our troops in battle until the period of the Mexican War, 1846—47. In that war a flag of 13 stars and stripes was carried by the battalion of volunteers from Maryland and the District of Columbia, and the flag of Company I, Fourth Regiment of Indiana Infantry, of 13 stripes, with an eagle in the field. Ten flags of the National Museum collection pertain to the Civil War.

Other flags include some of the Spanish-American War, a flag used by Admiral Charles Wilkes, United States Navy; a miniature flag carried by Capt. C. F. Hall in the Arctic, 1864-1869; the American colors carried by Rear Admiral Peary in his Artic explorations in 1909; the flag carried by the Smithsonian African Expedition under the direction of Col. Theodore Roosevelt, in 1909-10; and numerous examples of the National Ensign which has flown in notable engagements and during countless worthy achievements.

CONSERVATION OF SOIL FERTILITY

(Continued from page 3)

broken up each year and 10 acres planted. When the alfalfa is plowed up a crop of hay can be turned under to advantage. The ten acres that is broken would be planted to corn or potatoes, or a part to each. The next two years beets would be on this 10 acres, followed by beans, peas, or grain. The last year of the rotation would be devoted to grain with new alfalfa.

"This would give on a 100 acre farm 50 acres of alfalfa, 10 acres of corn and potatoes together, 20 acres of beets, 10 acres of beans, peas or grain, and 10 acres with new alfalfa. Although this rotation has a number of weaknesses, it also has many strong points and if practiced in connection with a liberal use of farm manure will keep the land in good condition for each crop. It also insures an even distribution and income.

"No one system of rotation is adapted to all farms since soil, markets, climate, and other factors are so variable. Each farmer should study his own conditions and try to get a rotation adapted to them. It is important that the subject be given attention and some system planned."

FALL WORK IN THE GARDEN

By E. R. Bennett, University of Idaho.

The successful garden is not made in a day. The big crop of any kind is the one grown on prepared land—a preparation that follows a definite plan or rotation. The best gardens of next year will be the ones that are started this fall. Several difficulties may also be avoided by starting the preparation this fall.

It would not be difficult to find people in Idaho who were annoyed by cut-worms in the garden last spring. One of the great blessing of life is that we are prone to forget our troubles as soon as they are past, but in garden work it is well to remember them sufficiently long to prevent their recurrence.

Now that "the frost is on the pumpkin, and the fodder's in the shock," or in other words, that the garden "sass" has been gathered, all the dead vines and refuse material should either be gathered up and taken to the compost pile or burned on the ground. Give the garden a thorough cleaning up. Many of the bugs that have been working overtime in the garden all summer will be hiding in the dead plant tops in the garden over winter. The cutworm mother laid her eggs during the latter part of summer around the various plants in the garden, and the young larvae are now eating in the roots or hibernating a short distance under the surface of the soil, waiting for the return of spring and the young garden plants.

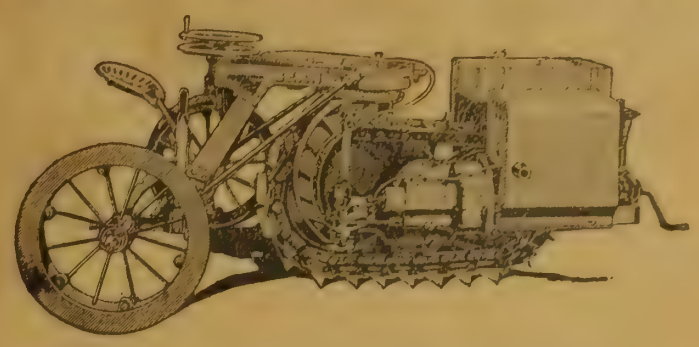
If the arrangement makes it possible, the poultry may well be turned into the garden. Disk or harrow the soil to expose insects that are hiding. Those that the chickens find—and their number will be legion—will trouble us no more.

After this cleaning up has been done, this fall is the best time to provide for the fertility of the garden for nex year. Apply a good thick coat of stable manure, forty tons to the acre will not be too much, then plow the land three or four inches deep. This is the one case where the harrow should not immediately follow the plow. Leave the soil loose and rough. If this is done late in the season, just before the soil freezes for the winter, the cut-worm and grass-hopper eggs, that the chickens have not consumed, will be exposed in loose soil to the freezing and thawing of winter, so that but few of them will be alive in the spring.

This work may seem trivial and unnecessary but it really means a great deal. The plant food for next year's plants will be more available, the soil will have a better physical texture, and a lot of the insect trouble of next year will be avoided if this work is done this fall.

Modern warfare consists of united, corordinated effort on the part of entire nations. If the present war teaches Americans to co-operate it will not have been entirely wasteful.

TrackPULL Tractor



Here are some reasons why you should buy a Bean TrackPULL Tractor:

1. Pulls instead of pushes itself over the ground.
2. Can be "gee-ed" and "haw-ed" out of holes and soft places like a team.
3. Has full-power pull on turns as well as on the straight-away.
4. Turns clear around in a 10-foot circle (5-foot radius).
4. Plows or harrows as close up in the corners of fields as a team.
6. Plows as close to vines and trees as a team.
7. Makes little difference how far off center you hitch.
8. Goes under branches of trees that no team can get under.
9. Runs stationary machinery up to 10 H. P. when not plowing.
10. Weighs less and costs less to run than wheel-type tractors of same ability.
11. Pays for itself in what it saves.
12. Light weight on long track surface.
13. Cultivates 10 to 15 acres in 10 hours.
14. Plows from 4 to 7 acres in 10 hours.
15. Little power required to pull tractor—power all goes to pull.

A post card will bring full description, price and terms.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Home Pledge Card

If you did not sign a pledge card like this some time ago do so today and you will reecive a beautiful household tag to hang in your window.

TO THE FOOD ADMINISTRATOR,
SALT LAKE CITY, UTAH.

I AM GLAD TO JOIN YOU IN THE SERVICE OF FOOD CONSERVATION FOR OUR NATION AND I HERBY ACCEPT MEMBERSHIP IN THE UNITED STATES FOOD ADMINISTRATION, PLEDGING MYSELF TO CARRY OUT THE DIRECTIONS AND ADVICE OF THE FOOD ADMINISTRATOR IN THE CONDUCT OF MY HOUSEHOLD, INSOFAR AS MY CIRCUMSTANCES PERMIT.

Name .....

Address .....

Number in Household..... Do you employ a cook?.....

Occupation of Breadwinner.....

Will you take part in authorized neighborhood movements for food conservation?.....

There are no fees or dues to be paid. The Food Administration wishes to have as members all of those actually handling food in the home.

DIRECTIONS

Mail your pledge card to the Food Administrator, Salt Lake City, Utah, and you will receive FREE your first instructions and a household tag to be hung in your window.

Upon receipt of ten cents with your pledge card and a return addressed enevelope, the official button of the Administration and, if desired, the shield insignia of the Food Administration will also be sent you.

CUT THIS OUT AND MAIL AS DIRECTED.

LIVE STOCK

SAVE THE SOWS

Suggested as a Slogan for Farmers Who Wish to Prevent a Threatened Meat Shortage.

Selling a brood sow at this time, according to the United States Department of Agriculture, is like killing the goose that laid the golden eggs.

When pork is selling at 18 cents or more a pound on the hoof, the hog breeder may be tempted to turn into cash all that he can sell; yet the department points out that the value of a brood sow which will produce such high-priced offspring is proportionly increased and she should be kept as the source of further and future profits.

Since the beginning of the war the number of swine in all countries has decreased, and the decrease has been marked in some of the belligerent countries. In France, for example, in the three years just before January 1, 1917, the number of swine decreased 38.12 per cent; during 1915 the number in Germany decreased 31.47 per cent.

Situation Critical.

Breeding stocks are being depleted, and the department says that the situation is already critical and threatens to become very serious if the country continues to be drained of its meats. Hogs furnish meat more quickly and cheaply than other stock can; the meat shortage, therefore, can most readily be met by swine production. It has been calculated that the possible increase from one sow is 1,002 pigs in four years, on the supposition that all litters consist of six pigs, that all live, that half are females, and that each gilt should farrow at one year and every six months thereafter.

Cut Feeding Expense.

Another cause of the depletion of breeding stocks is probably in the high cost of feeds. While concentrated feeds have gone up, the department says that some of the expense of carrying breeding stocks may be cut down by the use of green fall forage crops, pasture, alfalfa or clover hay. Brood sows may be maintained in fair condition at compartively little expense by the use of such feeds. By sowing in the corn, or as a cover crop on land which is likely to wash, sowing rape, or planting a root crop, the cost of wintering sows may be reduced. In brief, the department strongly recommends a campaign to save the sows as one means of helping to meet the threatened meat shortage.

MAKE MONEY—RAISE SHEEP.

John T. Caine III.

Be patriotic, make money, raise sheep. The nation needs the increased meat supply, hence the patriotism, the sheep is a profit maker at all times, certainly at present high prices, hence the money making. Every farmer in this state should keep a small flock of sheep. They are easily cared for, they eat up the weeds and farm refuse, thus converting valueless material into most valuable human food, and they represent a way to get quick returns. This State has but two million head of sheep at present. A few years ago Utah supported at least three million. This decrease has resulted from taking up part of the range for farm lands. Yet the fencing and cultivation of range should not have decreased the number of sheep, but rather have increased them. In Ohio, a state much smaller than Utah, where there is no range, there are more sheep than in all Utah.

While certain sections of Utah are increasing the sheep on farms, notably Sevier County, where a large number of small flocks have been introduced lately, and Summit and Morgan counties, where fifteen hundred ewes have already been placed in small flocks, and where twenty-five hunderd are to be distributed soon, there is still need for a great increase in numbers of sheep. Not only should every farm have a small flock, but the range should be used to its full capacity. Care must be taken not to over crowd the range, however. The importance of sheep in Utah is at once apparent when we consider that over ninety per cent of the state is range land.

Sheep and cattle are the only animals that can utilize the range forage to advantage, and, of these, sheep utilize much more of the available feed than do cattle.

HOW A WOMAN'S RANCH IS RUN

Mrs. J. S. Nesbet.

We have 160 acres of land under reconstruction, and we farm it only as it is leveled for irrigation. This work is going on all the spare time we have, and as soon as the land is in condition it is put into alfalfa. Land which a few years ago was practically worthless now produces in the neighborhood of $50 an acre a season. On a full stand of alfalfa I figure on one half acre supporting a cow during the summer months, and if that cow is of the proper calibre she ought to average $10 a month, although on account of the poor ancestry of the average cow now in use, very few reach this amount. My own herd does not average it, but several individuals surpass this figure, and I am gradually building up to it. Pure bred Holstein bulls are used, and we find nearly all the young heifers make very much better cows than their dams.

About thirty acres of alfalfa are divided into small fields to support the herd, averaging thirty cows during the summer months, or from March to November. After that time they are allowed to run over the fields when there is no snow on the ground, but at night they are kept in a corral and fed alfalfa hay in feed racks along in front of the stanchions. The racks are filled with hay each day just before milking time. At night the cows are turned loose, but have access to the feed racks which they usually clean out pretty well by the following morning. No mill feed of any kind is fed; no silage or root crops. If silage were available in winter we could do much better, and such will come later on.

We have about eighty acres in all in alfalfa. This supports the herd in addition to nine work horses, two colts, three bulls, as well as the calves and young heifers which are raised to increase the herd. The hogs also use alfalfa hay as well as running on alfalfa pasture of about four acres. We usually keep from fifty to 100 head of Durocs, and to them and the calves are fed each day the warm skim milk fresh from the separator. During the summer we can cut each pasture just as soon as the cows are through with it. This keeps down weeds, the young alfalfa shoots come up smooth and even, and by the time it is ready for the cows again, usually three or four acres, it looks as nice and clean as any hay field. This also prolongs the life of the alfalfa.

I have fields pastured for seven or eight years steadily, never have been resowed, and are fine alfalfa stands yet. We use the fields alternately about four times, and we mow them after that. This spring we disked and resowed, using seven to eight pounds of seed to the acre. This cultivates the old alfalfa and the resowing will thicken it very much and thus increase the crop, both in quantity and quality. We put in all our spare time, in the fall especially, leveling land and thus each season sees us with more acreage in crop. We propose to increase our herd and also our fruit area. For help I have one hired man. Occasionally we hire an extra hand for a short time, as in pruning the orchard or setting out young trees. I have two boys, one eight and one thirteen years. We have two gasoline engines which do our milking, separating, feed grinding, wood sawing, and before I get through with them they will do a great many more things. It does not take long to learn how to farm by machinery.

Farm boys should lay in plenty of nuts and popcorn. It's going to be patriotic to eat it instead of candy this winter.

PASTEURIZED COTTAGE CHEESE

The pasteurization of skim milk as the first step in the manufacture of high-quality cottage cheese by creameries and milk plants is recommended in a new bulletin of the United States Department of Agriculture. It is stated that by pasteurizing skim milk as it comes from the separator and beginning the manufacturing process as soon as possible, the cheesemaker can better control flavor and texture. No trouble need be experienced in making a high quality of cottage cheese, possessing both the characteristic flavor and body, from properly pasteurized skim milk of good quality.

The benefits to be derived from proper pasteurization are so great as to make it highly advisbale to adopt that system. Little additional work is required, provided suitable equipment is available, and but little is added to the cost of making.

The most important advantage derived from pasteurization is that a sanitary, safe, food product, free from disease-producing germs is insured. Pasteurization also allows a more perfect control of souring through the use of pure-culture starters, thus insuring the formation of an acid curd, giving the characteristic sour-milk flavor so much desired.

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BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."
Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.
Single Pills may be used for ordinary and range stock.
Double Pills should be used for pure bred and high grade stock.
Use any Injector, but Cutter's simplest and strongest.
Prices:
10 dose pkge. Single pills $1.00
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10 dose pkge. Double Pills 1.50
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Cutter's Pill Injector.... 1.50
Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
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We pay highest prices for Furs and sell you Guns, Traps, Supplies, etc., AT FACTORY PRICES. Write for FREE CATALOG, TRAPPERS' GUIDE, and Fur Price List. E. W. BIGGS & CO., 149 Biggs Buildings, KANSAS CITY, MO.

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We pay highest prices for Furs and Hides. Charge no commission. Furnish free tags and "Trappers Guide" to shippers. Write for price list.
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Light Weight
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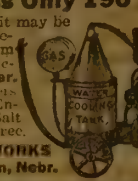
Built light, built right—for farmers who want an engine to do many jobs in many places, instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. Throttle Governed. Schebler Carburetor. Friction clutch pulley. Runs at any speed.
4 H. P. Weighs Only 190 lbs.
Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is original and successful engine for Binder. Also used on Corn Binders and Potato Diggers. Engines distributed from Salt Lake City. Engine book free.

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For All Farm Work
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The old, reliable remedy you can depend on for Spavin, Curb, Splint, Ringbone or lameness. Thousands have proved it invaluable. Get a bottle from your druggist. Price per bottle $1.6 for $5. "Treatise on the Horse" Free at druggist or from Dr. B. J. KENDALL CO., Enosburg Falls, Vt., U. S. A.

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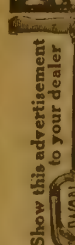
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has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.
Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid F.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.
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With Straight Edge
Genuine Iwan Augers and hay knives wholesaled by: Consolidated Wagon & Mach. Co; Strevell-Paterson Hdw. Co.; Salt Lake Hdw. Co; Zion Co-op. Merc. Inst.; Salt Lake City; Geo. A. Lowe Co. Ogden, Utah.

Big Money in Running Water
Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an
One Man One Team
Improved Powers Combined Well Boring and Drilling Machine
Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.
Small investment; easy terms. Make machine pay for itself in a few weeks work.
There is a big demand for wells to water stock and for irrigation.
Write for free illustrated circulars showing different styles.

Lisle Manufacturing Co.
Box 978 Clarinda, Iowa

Selection and Care of Work Harness

Hugh E. Thorp.

Every-day observation proves that there are more than many farmers who are very careless in both buying and caring for their work harness, as their teams, and harness too, will testify, not only in broken parts, cracked leather and looks in general, but their animals are bruised, skinned and scratched unmercifully as a result of using dry, hard collars and poorly fitted harness. Such conditions as these always come at the busiest season when the hardest work is to be done, but such troubles can be easily avoided if the farmer will exercise a little care and good judgment. Perhaps about as good advice and wisdom as can be gotten together in such few words is that in buying a harness a farmer should use about the same judgment that he would exercise in buying clothes for himself, which means that harness must fit, wear and look well to be satisfactory to both user and teams. Harness is the clothes in which our horses and mules perform their daily labor, extending into weeks, months and years, and as their comfort is entirely in the hands of owners, it is only evincing our humane side to see that they are treated fairly. Any extra care and cost on our part fades into insignificance when we consider their value and that they are powerless to help themselves. It is quite a mistake to have harness literally covered up with metal trimmings and ornaments, for such not only makes them more difficult to keep clean, but adds much weight that can be dispensed with. The purchaser of flashy, gaudily decorated harness will soon regret his purchase, for harness having such extra weight is much harder to handle and a good deal more expensive than just plain harness of equal quality and strength. And then it is very inhuman to make the teams carry so much unnecessary weight in hot weather.

Every spring, during the season of heavy work, many horses suffer a great deal from poorly cared for and ill-fitting harness, and as a result are not able to do their best work. Most of this suffering is from sore necks and shoulders, due to combined ignorance and carelessness, particularly the latter, on the part of those who use them. This can easily be avoided by having collars properly fitted and cared for, and the harness adjusted so as to bring the draft to the proper point. A new collar, even of the best, is usually stiff and unyielding, and in most cases the shoulders are made to conform to the collars, instead of forming the leather to shoulder irregularities. To make a collar fit the shoulders exactly the leather should be made soft and pliable by first moistening with warm water and then soaking in a good clear harness oil. In a few hours the leather will be sufficiently pliant for the collar to be drawn up and fitted closely to the neck by using the hame straps. Then as the animal works the collar will be adjusted to the shoulders and there will be very little, if any, soreness. Old, ill-fitting collars can be greatly improved by giving this same treatment. It should also be remembered that there must be individual collars of the proper size and adjustment, and that they should never be used on another animal.

Another very important thing is to have the traces attached to harness at the proper point, for this determines how the load will be applied. When they are attached either too high or too low, the collar is forced backward and forward with every movement of the shoulders in walking and sore shoulders and necks inevitably result. But if the traces are fastened at the right point there will be very little motion at the tops of the harness. It is also important to have bridles, backbands, breeching, etc., that fit without chafing, not only from a standpoint of comfort, but the animal's disposition is very likely to be spoiled when working in harness that rubs the hair and be given to the correct fitting of bridles. Of course, comfort is the first consideration and the bit is half of bridle comfort. It should be strong, well made, large enough so it will not chafe the mouth, and of such shape that the rings cannot pinch the lips. Many horses have been ruined by carelessness in this respect, and it is nothing short of a crime to butcher a horse's mouth up by using severe bits, such as scissors and curbs, or by wrapping the bits with wire. These things can be avoided by using a comfortably fitting common-sense bit right from the beginning. The head piece and browband of a bridle should be soft and as smooth as possible with rounding edges, particularly where they join, as it is very easy to make a sore from chafing, but rather difficult to heal, and such is very apt to make an animal shy about the ears.

Traces, hames, backbands and breeching are all important enough to justify careful selection, but when harness is to be bought, it is a good rule to buy, first, the best collar obtainable; second, a comfortable bridle, and, third, stout lines, and then purchase the other things to do with these. Most of the horse collars on the market today are faulty in more ways than one, but neither the manufacturer nor the dealer is to blame, for majority of farmers buy the cheapest grade they can find. Manufacturers make, and merchants handle goods for which there is the greatest demand, just as the farmer grows the crops for which he can find the best market. The best collar is one that shows good material, expert workmanship and shape and construction along approved lines. A good way to find the best collars is to consider the kind used by experienced teamsters who regularly do heavy hauling. A collar can hardly have too much body or be too rigidly made, for flexibility is not wanted in a horse collar. A large body gives a greater bearing surface for the shoulders, and sets the traces far enough from the sides to prevent rubbing.

Harness will last longer and give much better service if a few simple rules for keeping them in good condition are observed. Stalls should have regular and frequent cleanings, for the ammonia gases that come from manure have an injurious effect on leather. Sweat rots leather, and it is very important, particularly in hot weather, that harness be wiped off as soon as removed from animals. Harness used only occasionally is better if cleaned after each using and kept in a closet or other place that protects from the weather. Those in daily use should be given frequent, thorough cleanings, oiled as often as necessary to keep the leather soft and kept protected from dust and dampness when not in use. Dirt and sweat can easily be removed with a damp sponge and the leather wiped dry with a woolen cloth or chamois. Do not hang the harness up when wet with rain, or the leather will harden and break. Wash in warm soapsuds, wipe with woolen cloth and oil thoroughly. Neatsfoot oil is an excellent preserving medium for leather, but even the best of oils and blackings should not be used to an excess in hot weather or the leather will "burn." If there is a reddish coat to leather as a result of contiuned use and frequent cleanings, the original black can be restored by mixing a little lampblack and kerosene with the oil and soaking thoroughly in it.

Harness looks better and wears much longer if kept well cleaned and oiled, and rainy weather and idle days offer a good opportunity to do this work. All harness should be oiled at least twice a year, and oftener if hard usage and wettings make it necessary. When oiling, the harness may be hung so that practically all the leather can be reached while sitting down. All straps must be unbuckled and the leather cleaned of dirt, sweat and hair before applying the oil. Oil of the very best quality, in cans, mixed and ready for use, can be had at any harness or hardware store. An application of a good dressing, particularly in driving harness, after oiling, greatly improves the appearance and prevents dust from sticking. Metal polish is cheap and its use adds much to the appearance of a team. Harness treated in this manner will last more than twice as long as those that are uncared for, and in addition to the saving in money, the feeling of satisfatcion one experiences when using clean, neat-looking harness is well worth the small outlay of time and money necessary to keep them so. Finally, keep the harness in good repair. A repair outfit consisting of thread, stitching awl, rivets, rivet set, pliers, clamp and other necessary articles can be purchased for a small sum. And a stitch in time may prevent a serious accident, or broken harness during a busy time.

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Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

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INCREASE PRODUCTION OF HOGS NECESSARY

(Continued from page 1)

To win the war our government must have a larger meat supply. The fixing of a minimum price will safeguard the producer and should stimulate production.

The purpose of the Food Administration holding this conference was to stabilize prices so that there will be an increase of production.

There has been a feeling among the farmers that something should be done under the new governmental regulations to control the packing industry and stop such practices as "dropping the market" on days when large shipments were to arrive.

To get an increased meat supply quickly hog breeding must be increased materially throughout the country, and in certain States an increase of from 25 to 50 per cent in the number of hogs is recommended by the United States Department of Agriculture.

The situation is of great importance. We must have plenty of meat for our armies and the armies of the allies in the field, and sufficient meat for our civilian population and the civilian population of the allies at home.

To have this meat, breeding animals must reproduce themselves so the offspring will be available for slaughter in the future.

Hogs can be increased quicker than any other kind of livestock.

Therefore a larger number of sows must be bred NOW, than in recent years.

In addition to the fact that there is an imperative demand for more meat as a war measure, it should be taken into consideration that we now have an abundance of feed crops—corn, oats, and barley—with which to produce this necessary increase in the number of hogs. The demand for meat is certain and it will be profitable to the farmer to market some of this heavy grain supply on the hoof.

Pork can be transported more readily and economically to troops in the field than can any other meat. Great supplies of bacon must go to the boys in khaki at the front. Unless NOW a larger number of sows are bred, the amount of meat we will require next year will not be available.

The estimated number of hogs is 4,000,000 less than it was a year ago in this country; and in the face of this we NEED more hogs than ever before. How can we get them? By breeding sows at once.

The exportation of pork products has increased since the war began and will continue to increase during the length of the war. The foreign countries are devoting their farming energies to food and feed rather than livestock production, but they must have meat and they must get a large part of this supply from us.

During the last three months the price of hogs in the United States has been, on an average, more than twice as much as the average price for the five years from 1911 to 1915. In view of the large crop of feedstuffs in sight, however, it is believed that farmers will see the wisdom of taking every reasonable step to increase the supply of hogs and hog products.

Pork Prospects.

A birdseye view of the pork situation may be had from figures announced by the U. S. Food Administration. At the beginning of this year, swine in the United States numbered 67,450,000. In Europe the decrease in hogs since the war began has exceeded 32,000,000. So the European shrinkage equals about half the total number of hogs in the United States.

In the face of this situation, the American people consumed more than three pounds more pork per capita during the last fiscal year than in the average of the three years before the war. Farmers who are doubtful about pork prospects should remember that the nation's feed supply is above normal and the meat supply is below the demands now made on it. Lower hog-feed prices are already indicated in the reduced price of new-crop corn.

In a recent statement, Herbert Hoover, U. S. Food Administrator, says, "If farmers are to find markets for feed, it must be to a great extent through an increase in animals. The monetary interpretation of this situation must be that we will have a low range of prices for feeding stuffs, and in view of the European situation and our own shortage in hogs we will have a high average price for pork products. Therefore, it must be to the vital advantage of every farmer to raise hogs."

—o—

BEET TOPS A VALUABLE FEED

Beet Top Silage Almost Equal To Corn Silage—How Tops Are Siloed.

With feed prices three times what they were ten years ago, more care should be taken of beet tops. An acre of beets will produce from 4 to 8 tons of tops. In a test made at the Colorado Experiment Station some years ago, beet tops made into silage without the addition of straw, showed a value for feeding dairy cows almost equal to corn silage, which is usually considered worth $6 to $7 a ton. The beet top silage was a dark, coffee color and was not eaten as readily as the corn silage, but seemed to give as good returns for feed consumed. A number of feeders made beet top silage last year and obtained excellent results from feeding the silage to steers.

The easiest way to make this silage is in a trench silo 6 to 8 feet wide, 6 to 8 feet deep, and as long as may be necessary. The ends are sloped so that wagons can drive in, over the tops, thus packing them down. Alternate layers of straw may be put between layers of tops. Straw takes up some of the moisture from the tops, thus improving both feeds. When the trench is full, it is covered with straw and earth. The silage is cut out with a hay knife and taken out from the end.—Chas. I. Bray, Colorado A. C.

—o—

KEEP THE TRACTOR IN GOOD ORDER

The tractor is as responsive to good treatment as an animal or any other machine. In the case of a great many machines the response to good treatment is not so noticeable. This is true because the tractor is a power-furnishing machine while the average farm machine consumes power. If the tractor is not just right in every way, it falls short in the production of power. This is sure to be very noticeable, as it is usually pulling a full load and only a small loss in power cuts down the amount of work done.

In the case of the power-driven machine, any disorder calls for greater power to operate it. The horses or the machine furnishing the power work harder and approximately the same results are accomplished. Hence it is much easier to overlook a slight indisposition on the part of a power consuming machine than on the part of the power producer.

If any part through which power is transmitted is loose, it may cause a reduction of power. The tractor operator should examine his machine thoroughly every week or ten days to prevent such loss. A bolt in the crank case is loose, oil is lost. The adjustment on a valve stem loosens, the valve is out of proper time and the cylinder does not give full power. The clutch is not adjusted to take hold evenly. Slippage here causes loss of power. Similar leaks may develop in the fuel system and the ignition system. Any of these cause heavy drains on the power. Usually they can be quickly repaired if attended to early. Left too long, they a large repair bill and loss of much valuable time.

The throb and rythm of the tractor may result in a breakdown involving should be a part of the operator so that he detects the trouble in its earliest stage.—E. R. Gross, Colorado A. C.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF Y OU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

SPLIT WELD

Very thin stock, especially steel, is sometimes difficult to joint with the ordinary lap-weld for the reason that the stock is so thin that if the pieces are taken from the fire at the proper heat they will be too cold to weld before they can be properly placed together on the anvil. This difficulty can be somewhat overcome by using what is called the split weld. The end of the pieces to be welded are tapered to a blunt edge and split down the center for half an inch or so, depending on the thickness of the stock. One half of each split end is bent up, the other down; the ends are pushed tightly together and the split parts closed down on each other. The joint may then be heated and welded.

The split weld may also be used for heavier stock but the shaping of the pieces is somewhat different. Only one piece being split and shaped in the form of a Y, while the other has its end brought to a point with side of the bar just back of the point bulging out slightly. This bulge is to prevent the two pieces from slipping apart. When properly shaped the two pieces are driven together and the end or lips of the Y shaped scarf are closed down on the pointed end of the other. The lips of the Y must be long enough to lap over the bulge on the end of the other piece so they will not slip apart. The pieces are then heated and welded.

The weld must be heated slowly so the pointed part will be brought to a welding heat without burning the outside lips.—S. I. Ross.

—o—

Use the soft-shelled eggs at home. They ship poorly and may lower the grade of the others.

RELIABLE FARM BARGAINS

WE WILL ACCEPT LIBERTY BONDS ON THESE FARMS.

We have just received information from a German who is desirous of leaving the country to sell his farm, right in the center of the Bear River valley, one of the best farms in that valley, containing sixty acres, five-room house, barn and other outbuildings, nice little orchard, all under cultivation. The machinery, horses and cow go with the place. The property is immediately across the road from land we have sold for $200.00 an acre and is well worth the money, and is renting for $20.00 per acre per year. Adjoining it on the other side is one of the finest homes and farms in the Bear River valley. Immediately across the road and immediately to the east there is still another beautiful home. In fact, this is in the district where all of the nicest homes are built. This farm can be had at the ridiculously low price of $130.00 per acre. If you are looking for a farm, this certainly will appeal to you.

We also have in northern Boxelder county, right near Portage, a farm containing 256 acres. This property has two homes and is all under cultivation. It is fenced with one of the best fences that money could buy. It joins the forest reserve and has a beautiful spring of water which irrigates a part of this land. There is a schoolhouse one-quarter of a mile from the house, railroad station about three miles, although the railroad passes by the place. If you are looking for a ranch close in, where you can raise stock and farm, this property is first-class. This property can be had for $5500.00. Will consider some Salt Lake City property and give terms on the balance.

Just below 15th South, on the five-cent car line, we have one acre with a new two-room house for $800.00.

In the Bear River valley we have a first class farm containing 185 acres. This farm is on the main road and right near the town of Tremonton. It is under a high state of cultivation; has a first-class modern house, eight rooms, hot water heat, good barns, granaries and other outbuildings, two acres planted to orchard, fenced with woven wire fence, large shade trees and lawn around the place, water piped to the house and barn; in fact, every modern convenience necessary on a farm. This property has been under a high state of cultviaiton for a good many years and can be had for $150 per acre, on terms. Will consider Salt Lake City property in part exchange.

$115.00 per acre will purchase a forty acre tract right near the town of Tremonton. This farm has been under cultivation for a good many years and at the present time, one of the best buys that we have ever offered in that valley. This land is situated in the heart of the best farming district and is under a high state of cultivation. This property can be had at one-fourth down and ten years on the balance, six per cent interest.

KIMBALL & RICHARDS
"Land Merchants."
54 Main Street,
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Phone Wasatch 963.

FARM AND RANCH DEPARTMENT

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

FEDERAL LAND COMPANY
Ogden Utah

POULTRY

CUTTING THE FEED BILL

By L. H. Cobb.

Feed for our hens will be very high this year, but eggs will be high also, and the hens must have the feed or they will not produce the eggs. It never pays to stint the hens, for unless they get enough to eat to lay at their best they will not give any return for the feed they do eat. Profits from hens are always in proportion to the feed they consume above what they must have to maintain a fair condition. Hens that are always hungry will seldom lay except in the regular breeding season.

The price of grains will make it necessary to conserve them as much as possible, and this can be done much more than is the usual custom. This year it will not pay to feed grains to supply protein, for it can be supplied much cheaper in other ways. Then green and succulent feed must be supplied as freely as possible, for it will save grain. Milk is valuable, also, and on the farm it can often be used for the production of eggs with more profit than in any other way.

Until late in the fall the range will supply a lot of good food, especially if the grasshopper crop is a good one. Where large numbers of hens are kept it is an excellent plan to keep them in small movable houses during the summer and fall, and scatter these to a great extent so too many hens will not range over the same ground. The expense of the small buildings for them to roost in will not be great, for where they are open they will accommodate as many hens as can find roosting space beneath their roofs. The main house will be better for having the hens out of it during the summer, and if it is inconvenient to prepare houses for them hens will not suffer if made to roost outside, though it will be hard to keep them scattered out without a house to shut them in a few times.

Rye is one of the best crops to sow for winter green, for it will be in a condition to use all winter if sown early enough to get a good start. Even sown late it will prove a valuable addition to the winter's feed. Sow it close to the henhouse so the hens can run out over it even on bad days unless covered with snow. Where hens can slip out and pick rye for a few minutes at a time on severe days they will get the full benefit of the green and the exercise in the open also, but if they must go far they will not do it, or will suffer frozen feet in doing so. Kale, bluegrass, and sprouted oats all supply winter green, but rye is probably the best sown crop. Where bluegrass sod surrounds the house it will supply green until very severe weather.

Root crops furnish a good substitute for greens when these cannot be obtained. When the hens are shut inside by snow the roots can be fed, either by being cut open and forced on nails driven into posts at the right height, or by cutting up and boiling with the grain ration. I believe that boiling with grain gives good results, and the hot feed in the morning will make them feel good when the weather is around zero. Steamed alfalfa will supply protein and is one of the best substitutes for green. If the alfalfa leaves cannot be had the alfalfa meal will answer, though the leaves will be eaten more freely.

If meat scraps or milk is fed liberally corn or any other grain can be fed for the grain ration. We have had good success feeding only corn and milk with a good range for the green. Our hens have done as well on this ration as they did when they had wheat, oats, and corn for grains, and a feeder of specially prepared mash always before them. They have had all the clabber milk they will eat, mostly heated just enough so the whey would separate. A favorite dish is such clabber with bran mixed in until it crumbles freely.

I do not know whether the wild sunflower is of enough value to pay for gathering the heads, but I do know that the chickens eat the seeds freely, and I do not see why it will not pay to cut the stalks when the seed is ripe enough to be full and yet not to shatter, especially since the stalks would be useful for fuel. Fuel and feed are both out of sight and sunflowers are in sight in countless numbers along the roadsides and in many fields in most of the cornbelt. The stalks could be fixed so the hens would have some good exercise extracting the seeds while the stalks were drying out sufficiently to burn.

One of the values of range is the amount of wild seeds that the hens get to supplement the grain ration. Buckwheat also can be sown in the odd corners or where early crops have matured, and the hens will harvest the grain as fast as it reaches the milk stage. I have had my hens get enough of the seed from a small patch that they did not care for much grain while the buckwheat lasted. All these things help to save grain, but we must not try to make the hens hunt too much of their living. At night they should have every grain of corn they will eat. It will do them no hurt to go on a little light rations during the day so they will be hungry enough to exercise in search of food, but at night they need the warmth of the corn and also the one full feed insures their not really suffering for food, or rather their receiving enough to keep them at their work.

KEEP THE HEN THAT LAYS

Prof. T. E. Quisenberry.

The good hen is now paying better than ever, while the poor hen is losing more than ever. These are facts proved by actual production of eggs, marketed from day to day as compared with the consumption of present high priced food, by the hens in the American Egg Laying Contest.

The main trouble lies in the fact that all hens are not good hens. In fact, if we use as a standard of a good hen, a production of 150 eggs per year, we find a large portion of all hens in America fail to qualify. It seems to be a recognized fact, based on the last census figures compiled by our Government, that the average farm hen lays about seventy-five eggs. We believe this is perhaps too low a figure for the present—the 1917 average hen. We believe that the increase in breeding from standard bred stock in the past five to ten years has already made an improvement in the egg production of the average hen.

In these days when every ounce of food should be conserved by feeding it only where it will produce its like, or more, in food value, and also in these days of high-priced grains, we should take steps which insure the keeping of all hens with good laying ability while the non-producers should be culled out and sold for meat.

The present contests have proven the following methods profitable, especially under present conditions:

1. Keep the birds with rather large plump combs and wattles.
2. Hens with pale vents, pale beaks and pale legs have been good layers.
3. Keep the late molters.
4. Keep the pullets which mature quickly and start laying first. Those which start laying when less than 200 days old, or nearest that age, are the best layers if they have had the right care.
5. Market those which have been slow to feather or seem to lack vitality.
6. The skin of the best layers should be rather loose and flabby on the abdomen between the vent and breast bone.
7. The pelvic bones must be thin, straight, flexible and wide apart.
8. Market the hens which are bagging behind and which have a heavy, fat, thick abdomen, which hangs below the point of the breast bone.
9. Keep the hustlers and heavy eaters that go to bed late and with full crops.
10. Birds that have long toe nails that show no signs of being workers are usually unprofitable.
11. If a bird meets the above requirements it should have a broad back, long body, stoutly built and be in good flesh.
12. If a bird is not molting and still has a small, driedup comb, covered with a sort of whitish substance, or if a bird has thick or crooked pelvic bones which will be found on each side of the vent and above the point of the breast bone, these are always money losers.

SEASONAL DISTRIUBTION OR EGG PRODUCTION DETERMINED

Seasonal distribution of egg production does not seem to be at all affected by the age of the hen up to three years at least, but total production affects the distribution regardless of age, according to a study of the yearly egg records of several flocks of Single Comb White Leghorns of different ages made by the Experiment Station of the Utah Agricultural College. The full results of this inquiry are set forth in Experiment Station Bulletin 149, just issued. Much has been published recently in a number of the leading poultry magazines regarding the relative value of pullets and older hens as winter egg producers that might lead us to believe that after a hen is a year or more old she is little or no better as a winter egg producer than the sage hen, blue grouse, or some of the other wild fowls in our mountains which, because of environment, lay so few eggs that they can hardly perpetuate their kind. This is not entirely true, as some of the best winter records made by the Utan Experiment Station flocks have been during the second and third winter, while the two poorest records for this part of the year were made by the flocks of 1910 and 1911 during the first or pullet winter. If, however, the pullets are hatched at the right time and are then given the right kind of care they will usually lay well when the price of eggs is highest.

It takes considerable time and expense to hatch and raise a flock of good pullets and we should not discard them from our laying pens when they are only one or two years old if they will give good returns during the second and third years. Keeping the hens until they have finished the third year instead of selling at the end of the second season reduces the cost and trouble of renewing the flock just one-third.

THE APPEAL OF THE HOUR

(Continued from page 3)

than in the former? Save one of these hauls by using what is made here, is the urgent demand.

This will apply to many of the various other articles now made in Utah such as canned goods, pickles, jams and jellies, candy, flour, blankets, woolen and knit goods, shoes, overalls, building materials, printing, coal, and scores of other daily needs.

It is an unneecssary waste to send out our raw products and then bring back a finished article that should be made here, especially is this the case with finished products similar to what we make here. The cost of this unnecessary duplication, hauling and expense of handling have to be paid by the people, the consumers. So Mr. Hoover advises all the merchants to patronize the home manufacturer and the consumer to patronize the home merchants. Insist on the home products, thus performing your share in furnishing employment and creating steady permanent payrolls.

The railroads are already overtaxed in handling the nation's business in equipping and preparing to do our part in the world war, so that this appeal to "Buy at Home," comes as a duty to our government and is only one of the many ways wherein we can "do our bit."

Utah's citizens need not hesitate in this regard, for they will find that Utah's products are the equal of any and the peer of most. Her manufacturers take pride in producing the very best goods possible, consistent with quality and price.

Let us add prosperity to ourselves and our state by increasing the opportunities for steady work and increased payrolls through maintenance of our industrial life.

"Buy at Home."

POTATO STORING DON'TS.

Don't store potatoes while they are moist.

Don't store without first sorting into table grade and culls for feed.

Don't expose potatoes to injury by frost after digging.

Don't let the wind dry out the potatoes. A bitter taste will result.

Don't bank potatoes without providing a ventilator.

Don't store in a light room. Light lowers the quality.

Don't cover potatoes with damp earth when storing in a hot cellar. They will start to sprout if you do.

Don't forget to watch the thermometer. The ideal temperature is from 35 to 40 degrees Fahrenheit.

Don't forget to sort out the decayed potatoes before the trouble spreads.

Don't forget to serve freely every day. This will help to keep the storage supply up to table grade.

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

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Richard Live Stock Co.

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Now ready FOR SALE. From Richards' "Pathfinder" and "Defender," and prize-winning sows. My junior yearling boar, from "Defender," won 2nd pride at recent fairs at Boise and Salt Lake. Prices very reasonable.

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Ranches at Ephraim, Utah, and Lonetree, Wyoming.

Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

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100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make you acquaintance. See these animals before buying elsewhere.

PURE BRED, LARGE TYPE POLAND CHINA HOGS FOR SALE. Write A. C. Anderson, Box 1, Ephraim, Utah.

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.

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Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.

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30 DIFFERENT MAGAZINES. Late issues. Value $3.00. Yours for 25c prepaid. Eastern Bureau, New Egypt, N. J.

The Value of Reading

Irvin Jones.

Not long ago I handed a copy of the Utah Farmer to a farmer and afterward asked him if he had read it, when he replied: "I would not give a cent for it. It's not worth anything to me." This farmer has always been hard run and always will be. I can recall several of my acquaintances who are what is commonly termed "hard run." Not one of them ever subscribed for an agricultural paper.

The farmer who is spending anywhere from $3.00 to $10.00 a year for reading matter is the progressive farmer. We have one in our locality who takes several different journals. And he carefully reads every one of them. It is a real treat to be in conversation with this man on farm topics. He is familiar with every progressive movement. He is familiar with agricultural writers, every livestock advertiser and the many important events discussed through farm papers. He is making more money today than any two farmers of my knowledge. He's no book farmer, as the term is usually applied. Visit his place any day you wish and nine times out of ten you will find him hard at work, using both hands and brain.

I have no desire to puff any certain farm paper or to please the editor of any of them, but since I have been impressed with the fact that farm journals have been the direct cause of many prosperous farmers, I am forced to make mention of the mistake the farmer makes in turning down such sources of valuable information. In looking over a recent number of The Utah Farmer we gained more than the price of an entire subscription. The articles on the silo, the sugar beet campaign, the information gives about livestock and dairying and the helpful home department are all good and should be read by everyone who is farming.

No man today can afford to turn down the farm paper. The man and woman who reads will be prosperous. We owe our little home today to the knowledge gained from farm papers. We are not rich by any means, but we are not encumbered with debts. The man who reads will sooner or later specialize in one or several things. It's hogs, sheep, cattle, horses, fruit or poultry.

I might give an example of what one young man did and he received his idea and much of the information necessary to his success from farm papers. He went into the feeding of livestock in place of selling his hay and grain and today is making good money. He reads carefully papers and books and profits by other peoples experiences.

So will it be with any intelligent man. It's the well-informed man who makes a success today. I would not give five cents for the man who will not read. The best farm hand I ever had was one who was a book worm. As soon as dinner was over he picked up a paper or book and read until time to begin work. The same was true at night. As soon as the day's work was done, he picked up his papers. He was well informed on every subject and a fine conversationist. As a result of his ambition he now holds a fine position.

Present any arugment you wish against reading good literature, you cannot but be convinced that it pays. It takes knowledge today to gain success. The most interesting speaker is the man who is well informed and who selects the choicest words to convey his ideas. Good reading is the secret of it all.

WHEAT GRADES HIGH THIS YEAR

A large part of this year's wheat crop has graded high at the markets —No. 3 or better—under the Federal wheat standards made effective this year. Attention is called to the exact figures because persistent false rumors have been circulated in the grain trade, and particularly among country shippers and producers, to the effect that, under the new Federal standards for wheat, very little of the marketed crop is being, or has been, placed in the higher grades. On the contrary, the requirements of the Federal standards for wheat are not such as to work hardship on the country shippers and producers, nor under these standards high grades have been given to a heavy percentage of the wheat marketed.

The Department of Agriculture calls attention to these facts:

1. Of the **Hard Red Spring wheat** which arrived in Minneapolis during the months of August and September, 1914, 1915, and 1916, 76.7 per cent graded No. 3 or better under Minnesota State standards for wheat in effect at that time.

Of the Hard Red Spring wheat which arrived at Minneapolis during August and the first 22 days of September this year, **81.2 per cent** graded No. 3 or better under the Federal standards.

In comparing the above facts, it should be borne in mind that whereas "No. 3 or better" under Minnesota State standards included the first four grades (No. 1 Hard and Nos. 1, 2, 3, Northern) only the first three grades of the Federal standards have been considered.

2. Of the **Hard Red Winter wheat** which arrived at Chicago during July and August this year, **79.3 per cent** graded No. 3 or better under Federal standards; of the Soft Red Winter wheat which arrived at Chicago during the same period, 72.5 per cent graded No. 3 or better under the Federal standards.

Of the Hard Red Winter wheat which arrived at Kansas City during July and August this year, **89.9 per cent** graded No. 3 or better under the Federal standards; of the Soft Red Winter wheat which arrived at Kansas City during the same period, 92.6 per cent graded No. 3 or better under the Federal standards.

THE WORTH OF EDUCATION

Education for farmers has some beneficial results that are measurable in money value. Some experts of the United States department of agriculture have found that the labor income of farmers who have been trained in college is $495 per year greater than farmers who have received only a high school education. This is equivalent to five per cent interest on $9,900. Figuring that the average cost of a college education is $2,000 ($500 for four years), and presumably that is a fair average for men who expect to become farmers, the investment is yielding, in increased earning power, nearly 25 per cent.

Upon this estimate Walter Stemmons, editor of the publications of Oklahoma Agricultural and Mechanical college, estimates that in 40 years a college education would increase the normal earning power of the farmer by $19,800 or, in other words, each year of the eight years spent in high school and college is worth $2,475 to the farmer.

From various statistics, it is learned that the average educated man earns $1,200. In 40 years he would earn $48,000. The average laborer earns $1.50 a day, 300 days in a year, or $450 a year. His earnings in 40 years would amount to $18,000. Upon this estimate the money value of an education is $30,000.

Education for the farmer pays. It pays for any one. But its money value after all is the least of its benefits. The satisfaction of knowing, of leadership, of self-control, of wider appreciation of life—these are the things that make an education worth while.

Forward looking farmers are making necessary repairs on their machinery before putting it away for the winter.

The Nation's Strength

is not only in the mailed fist but in the hand of industry—the hand of health. It behooves all of us to be strong and keep strong, in order to carry the present day burden.

As a strength-giving food product Ghirardelli's Ground Chocolate is an ideal blend of foods—cocoa and pure sugar, each full of elements that supply energy and build up worn tissues.

A tablespoonful of Ghirardelli's Ground Chocolate, 1c. worth, makes not only a delicious but an unusually nutritious beverage. Drink daily a cup of

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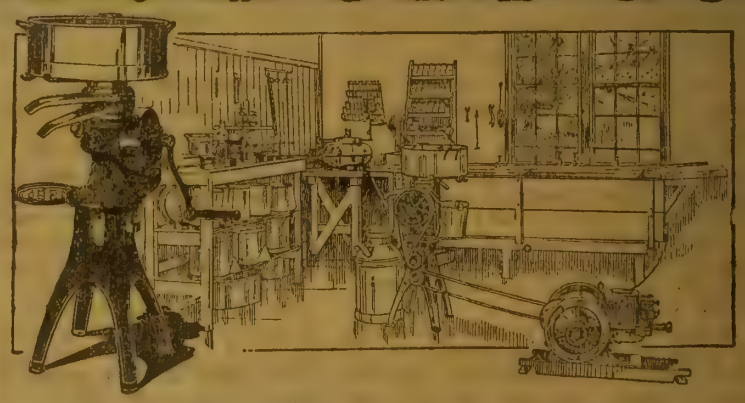

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The reasons for this popularity—boiled down—are that **Lily** and **Primrose** separators separate all your cream from your skim milk, and do it for years, always keeping up to the same level of close skimming, run with surprising smoothness and ease, and are very easy to keep in clean, sanitary condition. Across the double center of our **Lily** catalogue and our **Primrose** catalogue is a large, clear picture showing the working interior of these separators, explaining and indicating by arrows why they save you so much cream money. These catalogues are complete, fully illustrated, and very interesting and instructive, if we do say so ourselves.

Choosing the right separator in these days of high prices is so important a matter that the careful farmer and dairyman will sidestep risk by putting his trust in a good, reliable, tried-out and proved Harvester product—a **Lily** or a **Primrose**. Do you know the dealer? If you are not sure, write us.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 16 LEHI AND SALT LAKE CITY, UTAH. NOVEMBER 17, 1917

Watching The Weather---For Dry-Farming

By J. Cecil Alter.

The slight anxiety of the Utah dry-farmer over the coming grain crop prospects may be fairly well founded for the present autumn has been the driest of record since 1891 when state wide weather records were first compiled by the U. S. Weather Bureau. The drought, which extends from about September 25th to November 7th has resulted in an important delay in the preparation of fall seed ground and also in the germination and growth of much grain that was sown late in September or early in October.

It therefore appears probable that an unusually large acreage of the crop cannot be sown until next spring. These comparatively unfavorable conditions should not in any way discourage or dishearten the dry farmer to whom the State looks for so much of its food supply, but should inspire him to do his very best work and wisest planning.

Rains May Come.

In the first place, if the showers of November 7th have not revived the dormant grain already planted, the proper moisture conservation treatment of the soil should be continued this fall as far as practicable, on the assumption that ample rains will yet come to start the growth.

There is no reason to assume that we are not to have this moisture, nor that we are to have it, except that in the past the November precipitation for the State has averaged about 0.95 inch which is nearly five times as much as has already fallen (to November 10th); and past records are our only guides for the future.

In the past 30 years November has been notably dry only four times, and too dry for good grain protection only two additional times.

Growing Season Ends.

The normal daily temperatures (at Salt Lake City) fall below the usual growing point for common vegetation of 42 degrees about November 12th; sometimes this date is earlier, and sometimes later and sometimes there will be warm periods of growing weather long after an important spell of cold weather has come; thus there is still a fair chance that the grain already sown may yet get a start this fall or early winter.

Unsown grain lands should probably be left so until spring, and they should be left in the best possible condition to receive and retain the winter moisture. The most approved practises in this respect, considering the means within reach of the farmer, must be utilized. There will be ample snow to moisten the ground and there will be winds to blow it away; also there will be frost to make a watershed of the ground if this is not prevented by having the soil roughly cultivated, or left unplowed. At least these are average weather conditions.

Dry, Shifting Snow.

The state precipitation in December averages about 1.06 inches January, 1.34 inches, and February 1.28 inches, mostly in the form of snow, and during the year's coldest weather when the snow is driest and most easily shifted by the winds.

In March the average date of (theoretical growth of common plants, when the mean daily temperature rises above 42 degrees (at Salt Lake City) is the 17th, hence usually well before this date the ground is thawed to receive the March precipitation of 1.58 inches, the heaviest of the year. A little more than half of this is usually snow, much of which melts rapidly.

Spring Growth.

The mean temperature for March for the principal agricultural regions of the State has averaged around 40 degrees, hence the frost may be expected to leave the ground that month, and possibly enable much planting, at least much preparation for planting, of spring grain. There is an average of only six stormy days in March.

April is another comparatively wet month with an average precipitation of 1.18 inches, about one-fourth of which is in the form of snow. However, average temperatures in April assure so much growing weather normally (the mean for the agricultural parts of the State being around 50 degrees) that every effort must be made to get the grain in the ground early so that it may utilize this precious moisture.

I do not say we are to get this normal moisture, but that we are entitled to it as an average, and values approximating the average occur about as frequently as values extremely defficient or excessive combined.

Sow Wheat Early.

If the winter has been open, with little frost in the ground and much moisture to saturate it, there is all the more reason for getting the crop in early; then in the rare event of a deficient precipitation thereafter, the crop may mature fairly well without further moisture.

However, May is a wet month, with about 1.50 inches, practically all rain, and coming usually in only about five fairly good showers. The June average drops to about one-third the May average, and July about one-half the May amount.

To summarize: the average of past weather records would indicate the necessity for leaving or getting the ground in shape this fall to receive and retain the most possible moisture, which comes in the form of snow; get the seed into the ground at the earliest practicable date next spring, and practise every possible moisture conservation method known.

If the winter precipitation has been light, the spring sowing must be thin to find ample moisture; that is, if the precipitation from now until spring seeding time be 75 per cent normal, the amount of seed per acre should be reduced correspondingly.

Weather Data a Guide.

We cannot expect a wet winter to follow a dry autumn, any more than we can expect a dry one; the present or past weather is not a guide book so much as a guide post as showing the general trend of weather for the locality. Any individual period may actually depart radically from the normal, in excesses or deficiencies.

The weather is a most capricious ally of the dry farmer but it is a most powerful ally, if intelligently studied. The dry farmer should not watch the clouds and the mudholes and the snowdrifts so much, but should watch the statistics of the weather as the winter advances so he may know in figures what is happening.

(Continued on page 14)

Shipping Utah Wheat to Primary Interior Markets

By M. H. Greene Field Agent in Marketing, Utah Agricultural College and Bureau of Markets Co-operating.

Utah wheat producers should be well informed regarding the various wheat markets so as to know from just which one of the basic centers can be obtained the highest price for wheat. It is important also, to ascertain with a fair degree of accuracy about what price can be expected for the 1918 crop if the $2.00 per bushel minimum, already fixed by legislation, should be the maximum.

In case it is found that the production of wheat is unprofitable in comparison with other crops, then that crop which will give the greatest returns is the one which should be emphasized. Our patriotism is shown equally as much in the production of meat and sweets as that of wheat. The food administration is urging more livestock, sugar beets, and wheat. To produce any one of these three comomdities is an answer to the call made upon every farmer in this nation to increase the food supply.

Wheat Differentials.

The following are differentials between grades and classes of wheat and between the different primary markets of the United States as established by the United States Food Administration upon which the committee on prices based its recommend-

(Continued on page 15)

POULTRY

Plymouth, Utah.

Utah Farmer:

Dear Sir:—I have 150 chickens young and old ones the young ones are incubator chickens and they are half grown, they seem to have a disease among the young chickens, they are all dying 2 or 3 a day, their eyes are all swelled up and matter running out of them, they seem dumpish and don't seem to have much life to them. Please tell me what to do for them? and oblige me.

Mrs. Joseph L. Hess.

Answered by Prof. Byron Alder.

I believe the trouble you are having with your fowls is a contagious catarrh, commonly called "roup." This disease is not very common under our climatic conditions unless the birds are kept on damp, poorly drained soil, and in rather poor houses. Roup is readily recognized by the discharge from the nasal opening, which is at first thin and watery, but in two or three days becomes thick and abstructs the breathing. The inflammation, which begins in the nasal passage, soon extends to the eyes and to the spaces which exist immediately below the eyeball. The eyelids are swollen and closed much of the time. The birds sneeze and shake their heads in an effort to free the air passage from the thick mucous. The appetite is diminished and the birds sit with their heads drawn in, wings drooping, with the general appearance of depression and illness. In severe or advanced cases the birds sit in a semi-conscious condition unable to see or eat. Their strength is rapidly exhausted and many of them die within a week or ten days. Some of them may, however, recover, but others continue weak and have a chronic form of the disease for months, during which time they are continually spreading the disease among the other fowls.

The best treatment is that of prevention. Keep the fowls in dry, well-ventilated houses which are kept clean and occasionally disinfected. When the disease has finally obtained a hold in the flock, the following precautions may prevent its spread:

1. "Immediately separate from the flock any birds that show symptoms of disease."
2. "Disinfect the yards and houses with a 5-per cent solution of carbolic acid or some good coal-tar disinfectant."
3. "Use potassium permanganate in the drinking water. This is the common place for the spread of the disease. Use about as much permangante as will stay on a dime in each gallon of drinking water."
4. "Keep watch of the flock and isolate any new cases as soon as they show any symptoms of the disease."
5. **"Burn or bury deep all birds that die."**

The disease can be cured, but the treatment must be individual and requires a great deal of time. It is, therefore, rather expensive and consequently impracticable for ordinary stock. In many cases, birds that are apparently cured become a source of infection for later outbreaks.

One of the common methods in treating the fowls is as follows:

"Use a 1- to 2-per cent solution of potassium permanganate. Press the nostrils together between the thumb and forefinger in the direction of the beak two or three times. Pressure should also be applied between the nostrils and the eyes in an upward direction. This massage helps to loosen the discnarge in the nostrils and the eyes. The bird's head is then plunged into the solution of potassium permanganate for 20 or 30 seconds; in fact, the head may be kept under the solution as long as the bird can tolerate it. The solution is thus distributed through the nostrils and other canals and has an astringent and slightly disinfecting action. This treatment should be given twice a day and continued until all symptoms have disappeared."

PICKING PRODUCTIVE HENS

According to Prof. J. E. Rice of the Department of Poultry Husbandry, N. Y. State College of Agriculture the business outlook for the poultry keeper seems clear, namely, to find ways and means to produce eggs to meet the immediate demand and to be prepared when the war closes, and before, to help restock the world with high-quality poultry. It is a perfectly safe assumption, he says, that since feed is required to produce animals that the price of feed must go down before cheaper poultry will result, and that there must be cheaper feed and laying stock before cheaper eggs can be produced.

Persons who have sold their poultry which was grown at low-feed cost will be obliged to replace with stock that has cost from 50 to 100 per cent more to rear or wait until rearing costs decrease, which cannot occur until feed goes down. It would appear wise, therefore, not to sell poultry that has good productive quality, and to maintain the normal size of the flock by replacing undesirable fowls with promising pullets.

The slogan should be to produce more eggs from the same number of hens, or as many eggs from less hens, with profit. This can be accomplished by introducing more efficient methods of production, buying and marketing. Much can be done in each of these directions to enable the poultry producer to meet the critical war conditions, without financial loss while doing his part in furnishing the world's supply of food.

The one single factor of greatest importance in reducing the cost of production is to improve the productive quality of stock. This may be accomplished, Pennsylvania State College authorities declare, as follows: dispose of all diseased birds and poorly developed chickens. Keep (1) only vigorous stock; (2) the late moulters—they are too busy laying high-priced eggs to moult; (3) hens that have bright eyes, strong, sturdy legs set well apart, pale shanks and beaks in late fall and early winter, a strong, broad back, deep full abdomen, well-rounded chests and light feathers.

Egg-laying capacity may be measured by a simple method. The greater the number of fingers one can place between the pelvic or lay bones and the breast or keel bone the greater the capacity of the bird. A bird is considered to have poor egg-laying capacity when only one or two fingers can be placed between the lay bone and the keel bone.

To sum up the situation, it would appear that there has never been a time when the prospects were brighter for persons who know how to rear poultry and induce them to lay, to stay in the business than right now and when the outlook was darker for the person who does not know the poultry business to stay in it. The only solution of the poultryman's problem of meeting the war situation is to secure a satisfactory egg yield in order to reap the advantage of high-egg prices. The most important factor in securing high-egg yield is good hens. Without efficient hens, the best of rations, buildings, methods of incubation, breeding and marketing, are lost. Efficiency is the one word that will enable poultrymen to meet present conditions.

FEEDING YOUNG CHICKENS

Young chickens should be fed from three to five times daily, depending upon one's experience in feeding. Undoubtedly chickens will grow faster when fed five times than when fed only three times daily, but it should be borne in mind that more harm can be done to the young chickens by overfeeding than by underfeeding. Young chickens should be fed not more than barely enough to satisfy their appetites and to keep them exercising, except at the evening or last meal, when they should be given all they will eat. Greater care must be exercised not to overfeed young chicks that are confined than those that have free range, as leg weakness is apt to result in those confined.

The young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. The first feed may contain either moistened hard-boiled eggs, johnnycake, stale bread, pinhead oatmeal, or rolled oats, which feeds or combinations may be used with good results. Mashes mixed with milk are of considerable value in giving the

(Continued on page 7)

Stockmen and Feeders

The Hochenauer Alfalfa and all Products Grinder will grind all kinds of Hay, Grain, Straw, Corn Fodder and any dry forage in such form that the stock eat it all with no waste whatever and is guaranteed to

SAVE 35% OF YOUR FEEDING COST

It is very simple in design and operation and requires no experienced labor to operate. Over fifty large feeders in the intermountain territory are now using them.

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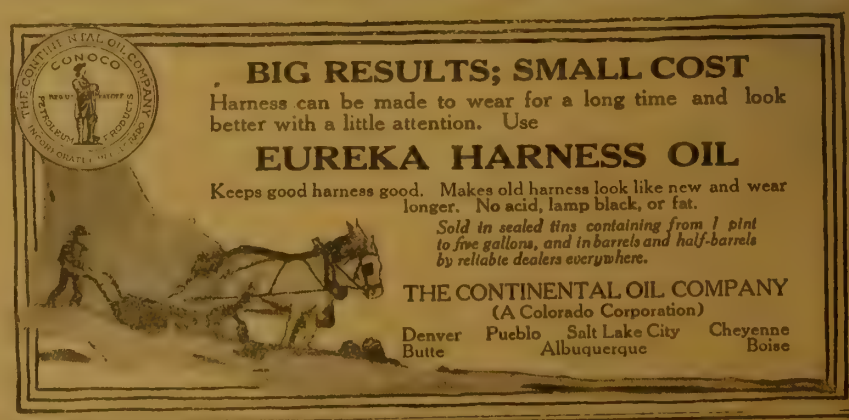

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Meat Production and Conservation

Dr. W. E. Carroll, U. A. C.

The United States has been and is still one of the greatest meat eating nations of the world. For many years, even before the war, our meat production had not kept pace with the increase in population in our country. Now that we must share our food supply with our allies it is imperative that our meat production be greatly increased in order to give them a generous portion of this necessary food product. Mr. Hoover, United States Food Administrator has said that he regards the supply of meat animals with even greater concern than the supply of bread. If the war is to be won in "the wheat fields of America, "as has been said, consider how grave the situation is from the standpoint of the meat supply.

Our European allies have been killing off their flocks and herds very rapidly. In fact, it has been recently estimated (Official Bulletin, October 27, 1917, p. 7.) that our Western allies alone have been forced to decrease their meat animals more than 33,000,000 head. This is a tremendous shortage for those small countries and must be met by a corresponding increase in our own country. This action was necessary from two standpoints. The importation of fresh meat to these countries has been beset with such difficulties that the supply from this source has been greatly decreased. The shortage thus brought about necessitated the killing of the home flocks and herds beyond their capacity to multiply in order to prevent a meat famine. It has been necessary in these European countries to order the plowing up of thousands of acres of pasture alnd to increase the acreage of wheat and other crops which can be consumed directly by man. This has naturally cut down the number of meat animals which can be kept.

If the United States responds to this new demand the move is a wise one, for our allies have in the past transported across the ocean large quantities of animal feeds. With ocean shipping made so uncertain by the activity of the enemy submarines it is the part of wisdom to feed to livestock on this side the feeds formerly shipped and send the meat thus produced to our allies. By doing this, much shipping is saved and the ships so released can be used very advantageously for other much needed shipping. This is made possible because of the fact that to produce one pound of meat requires many pounds of feed.

Probably the two most feasible methods whereby we can increase the supply of meat to our allies are first, to decrease the amount of meat eaten here at home, and, secondly, to increase the number and improve the grade of our meat producing animals.

That we can decrease the home consumption of meat without lessening the efficiency of the average American diet is well agreed. Careful estimates show that each American man, woman, and child eats on the average 8.1 ounces of beef and pork daily. One or possibly two ounces of this could be replaced by vegetables and fruits with out in any way endangering the health and vigor of the people. Where milk, eggs, and fish can be had considerably more than 2 ounces per capita of beef and pork could be saved to go to our allies. If only 2 ounces daily per capita were saved this would mean a total of nearly 14,000,000 pounds daily or 5,110,000,000 pounds each year which could be sent to relieve the distress among our friends across the water. A similar saving could no doubt be effected in our mutton consumption.

The possibility of increasing the number of our meat animals is very great, though an increase for export could not be as quickly produced in this way as by a decreased consumption as outlined above. Cattle mature rather slowly and produce few offspring and therefore do not multiply as quickly as do either sheep or hogs. No one can tell, however, how long this struggle may last, so no effort toward conservation should be spared even though the results may seem distant. To this end every beef cow which is capable of producing a calf should be kept, if there is the least opportunity of feeding her on the range or farm.

Sheep also should be conserved and bred not only for the meat they produce, but also for their fleeces of wool which are so much needed. A few sheep on the farm or a pet lamb or two where they can be at all conveniently kept will aid in the great campaign.

Of all meat producing animals the hog is by nature best adapted to overcome this shortage. The fat they produce so abundantly is also badly needed both at home and by our allies. Every effort should therefore be put forth to raise and breed as many sows as possible until the meat supply is up to normal again. A very splendid method of accomplishing this is through the Boys' and Girls' Club movement. A few hogs in many places mean much meat for the Government.

(Continued on page 11)

Truth of Food Situation In France

By Fred B. Pitney.

"I Would Rather Have Our Bread at the Front Than Your Bread in Paris"

How many times I have heard soldiers on leave from the front say, "I would rather have our bread at the front than your bread here in Paris." The same thing was true of coffee. Soldiers would say, "What do you call this stuff? We get real coffee at the front."

At the rear the civilians drank a compound from chicory, for the coffee supply was short, while the real coffee was reserved for the army. In like manner, the soldiers get a purer wheat flour than do the civilians. The wheat supply being so much curtailed two measures have been necessary to try to increase the amount of flour.

A law has been passed requiring the mixture of 30 per cent of other grains with wheat in making flour, while another law raised the percentage of extraction permitted in the manufacture of flour. Before the war this percentage was 70; it has been raised successively to 74, 77, 80 and 85. Seventy-seven is the extreme limit of nutritive extraction. After that the flour becomes permeated with particles indigestible for human beings.

The result of mixing grain and high extraction has been a flour that is often not only unpalatable but indigestible and it has caused not a little sickness, particularly gastric troubles among the children. Adults frequently throw away the soft inside of the bread and eat only the hard-baked crust. Very often I have found this "war bread" an unpleasant dark brown in color, with a soggy, glutinous inside. It is no one's fault. It is the best that can be done under the circumstances.

Shortage of All Cereals.

Another problem enters with the authorization to mix other grains with wheat in making flour. It is the shortage of the other grains. For it is not only wheat that is short in France, but all cereals. We can have recourse once more to the official figures.

The annual consumption of barley in France before the war equaled approximately 1,250,000 tons, of which about 15 per cent was imported. The production has fallen off to such an extent that nearly one-third of the barley had to be imported last year. This year, owing to special reasons, the production will be slightly higher, but there will still be a deficit far above the normal. Furthermore, the deficit in barley must be considered not only in relation to the normal consumption but with regard to the fact that it must be used very largely to supplement and replace wheat.

With rye the normal consumption was about the same as for barley, with imports of about 8 per cent of the requirements. In 1915 the production was about 400,000 tons under the normal consumption and in 1916 it was about 350,000 tons under the consumption, while in both of those years there were practically no imports. Thus there was less rye than was needed and rye could only help out wheat by reducing still further the amount given to its normal uses.

The annual consumption of corn averaged 1,150,000 tons, about one-half being imported. The proportion of imports in 1916 had risen to two-thirds.

The annual consumption of oats before the war was 5,500,000 tons, of which 500,000 tons were imported. In 1916 the imports rose to over 1,000,000 tons and the stock was still short 500,000 tons.

Agricultural Labor Shortage.

When one travels over France one speedily learns the reason for the shortage in the grain crops. It is because there is not the labor to do the farm work. Cultivation has to be left to the old men, the women and the children. All others have been taken for the armies and the defense of the country.

In crossing and recrossing the French agricultural regions it has been a continual source of wonder to me how the few workers in the fields have been able to produce the crops they have achieved. One see plows with the handles held by women and the horses led by small boys, women stooping among the long rows of corn, cultivating the ground, groups of women slowly crossing the fields, creeping on their knees, painfully tending the newly-planted crops. Occasionally one sees a white bearded patriarch among the women. I should say that the proportion is roughly one man to six women. This, however, is by no means an official figure. It is only my own rough guess. There is no wonder that with this tremendous shortage in labor fields are left bare, while those that can be cultivated produce less than the normal amount per acre. What would our western farmers think of turning the land in the spring with long-bladed hoes? Yet I have seen this very thing being done in many parts of France because of the dearth of agricultural machinery.

Farm Implement Shortage.

Most of the farm implements of France before the war were of Amer-

(Continued on page 10)

Six Million Dollar Pay Day to Beet Farmers

Written for the Utah Farmer.

Thursday November the fifteenth will be remembered by the farmers in Utah and Southern Idaho as one of the largest pay days in the history of the sugar industry.

On this day payment will be made for all beets delivered during the month of October. According to estimates given out the Utah-Idaho Sugar Company will pay out $2,500,000 to $3,000,000. The Amalgamated Sugar Company's payment will total $2,225,000, the Layton Sugar Company about $250,000. Add to these the payments made to farmers by the Delta Sugar Company, The People's Sugar Company and the West Cache Company and you will have a total which makes the largest pay day every given the farmers on one day for sugar beets. The pay day for December for beets delivered this month will not be quite so large as it is estimated that more than half of the beets were harvested during October.

The money paid the farmers for beets can be added the payments of workmen and factory hands and one can realize what the sugar industry means to our state.

The season this year has been very favorable for the harvesting of sugar beets nearly every one was anxious to get their beets out of the ground because of last years experience when so many were frozen in the ground and could not be harvested. The favorable weather conditions with beets harvested will permit of a great deal of fall plowing, so necessary to successful beet growing.

This great amount of money will soon find its way into business channels and all will feel the effects of so much money.

Many more than the farmers will be benefited by this great pay day as once this amount of money starts to move many debts will be paid. Local merchants in beet growing districts have planned beet harvest sales and will profit by the farmers business. Taxes and bankers will get their share of the money, in fact such a pay day will help the whole state as the spending or investing of this money means a big thing.

DAIRYING

FEEDS FOR DAIRY COWS

Prof. S. G. Carlyle.

To get the best results, dairy cows should not only be fed protein and carbohydrates in the right proportion, but these feeds should be palatable, digestible and bulky, and as succulent as it is possible to get them. The cow also relishes and does better on a variety of feeds. The problem confronting the dairyman in this province is to supply the variety and succulence through the long winter months.

The feeds that are generally used by the dairyman in this province, after the cows are stabled, are for roughage—green feed or oats cut before they have matured, prairie hay, and in some parts timothy hay. For concentrates—ground oats, barley, frozen wheat, bran, and flax or oil cake; and some are provident enough to grow a few roots to supply succulence.

Our roughage feeds are high in carbohydrates, and low in protein—green feed having about nine pounds protein out of every 100 pounds, prairie hay six pounds, and timothy hay five and a half pounds; but of this amount only about half of this protein is digestible. If alfalfa can be grown, as I believe it can, over the greater part of Alberta, it will do much to balance the rough feeds. Alfalfa contains about 14 pounds of protein out of every 100 pounds, of which 10 pounds is digestible.

But if we are to get the best results some concentrates must be fed, because a cow cannot consume enough of the rough feeds to produce a large amount of milk, and she will not get the variety to stimulate her appetite. The concentrates grown in this country are fortunately high in digestible protein besides being very palatable.

Oats is one of the most largely grown crops in the west, and is one of the best feeds for any kind of stock, and is especially good for the dairy cow. It is bulky and palatable, and though containing a larger percentage of indigestible material than the other grains, owing to the heavy hull, it also contains a larger percentage of digestible protein and fat, and has a nutritive ratio of 1 to 6, which, according to chemical analysis, is almost a balanced ration. Oats are especially beneficial in fattening cows after they are dry for next year's work; and this is where many dairymen fail in not getting cows in good condition before freshening. As soon as a cow dries she should be fed liberally on feeds high in protein and fat, such as oats, bran, and oil meal, to store up future energy for herself, and also to develop the unborn calf.

Another feed largely grown in this western country, and which should command more attention by the dairyman, is barley. Barley, according to analysis, is very similar to corn, and for this reason forms a large part of the fattening hog's ration in this country. However, it can be fed very profitably to dairy cows, but should only be fed in limited quantities, because, like corn and other heavy, compact feeds lacking bulk, it is harder to regurgitate for remastication, consequently it is not well mixed with the saliva. The ptyalin contained in the saliva acts upon the starch, changing it into sugar and leaving it in condition so that the other digestive juices can further work upon it. Barley adds variety and is very valuable ground and mixed with more bulky feeds, as ground oats and bran. It is highly digestible, containing 75 per cent digestible nutrients against 66 per cent in oats. It is lower in protein and fat, but higher is carbohydrates.

Wheat is valuable for feed for dairy cows, but on account of the high value placed upon it for human food, is not much used. Shrunken and frozen wheat is plentiful some seasons and can therefore be profitably utilized. Wheat is equal pound for pound to barley, and should occupy the same place in the ration. But the great value of wheat for feeding purposes is in its by-products, of which bran is the most important to the dairyman. Bran is not so highly digestible as some of the other feeds, but is extremely valuable for its physical nature, being bulky, palatable, and has a cooling effect on the digestive system. It also has a laxative effect, owing to a large amount of phosphorus or mineral matter present. It contains only 56 per cent digestible nutrients and would be an expensive feed were it not for the reasons already mentioned. However, it is high in digestible protein, containing 12 per cent.

Another feed worthy of mention is flax, but on account of containing a large percentage of oil it is rather expensive. Like wheat its chief value as a dairy feed is in its by-products, the chief of which is oil meal. This feed also has a high physical value, especially when animals are fed on dry feeds, in keeping the digestive apparatus in healthy working condition. It is highly digestible and contains a larger amount of protein and fat than any of the feeds spoken of. It contains about 30 per cent protein and 6 per cent fat, and for this reason should only be fed in small quantities in conjunction with bulky feeds.

Rye is another feed grown extensively in the west, and has a high value for fattening hogs. It is carbonaceous in character and is palatable, but its chief objection in the dairy ration is the disagreeable flavor it imparts to milk and the bitter taste it develops in butter, if fed in any considerable quantity. The danger from it is the likelihood of ergot being present, which causes abortion. The best way to use it for dairy cows is to sow it for pasture in the month of July, when it will be ready to turn the stock on the middle of August or first of September, thus supplying green, succulent feed when the other grasses are dried up. It also comes on early in the spring, and can be pastured up to June, the cattle taken off when the rye starts heading out to escape the effect of ergot which may be present. The rye can then be left either for grain or to be plowed down.

The greatest drawback to winter dairying in the west up to the present is the absence of succulent feed. Roots can be grown in large quantities in every part of the province, but the chief objection is the cost of labor in handling them. Corn has proved a success in some parts of the province, and already silos have been built, thus solving the problem in these sections, and more will be grown every year.

The most common feed for Alberta for stock during the winter months is green feed or oats cut before being matured. This makes excellent fodder, but it may be greatly improved by sowing with the oats a bushel of peas per acre. The peas and oats together make a better balanced ration, the peas being rich in protein. This makes excellent feed when the oats are cut in the dough stage, shocked, stacked and fed throughout the winter, and a still better feed when put in a silo as soon as cut and fed as ensilage. This has been tried on two of our demonstration farms, and the ensilage found very satisfactory.

COWS FOR EVERY FARMER

I do not know of any one thing that contributes more largely and successfully toward having a good farm than the keeping of a few good cows. It must be remembered that it is not always the large dairy herd that pays the most profit, but rather the small dairy, and where the farmer can give this part of the work some extra care and attention.

I do not want to leave the impression, however, that every farmer should be a dairyman. While this would no doubt be excellent, yet there are farmers that would never make good dairymen. Their farms perhaps would not be suitable for carrying on a profitable dairy business, but I do want to say this: that every farmer, no matter where located, should try to keep at least a few good dairy cows in order to supply his own table throughout the year with milk and butter.

Before going into the dairy business there are a few things that we must give very careful consideration if we would be successful from the beginning. In the first place, the owner must have a natural liking to his herd and take an interest in the work. This is all-important. Selecting a breed of cattle suitable to his needs and condi-

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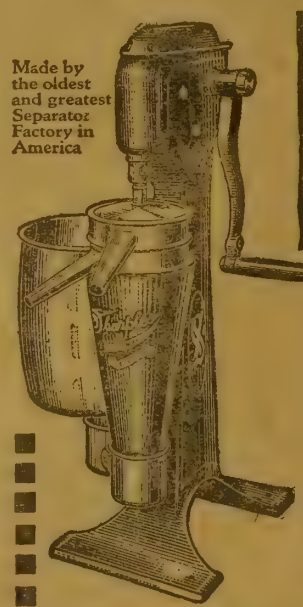

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tions is another thing of importance.

A farmer must be able to ascertain how much feed he is able to produce profitably for the purpose of running a small dairy. He must also take into consideration his market conditions —what they are and also where located. He must determine whether it pays him to buy his dairy cows or raise them. There is a great difference of opinion on this subject.

I have always preferred to raise my dairy cows, but I have also known practical dairymen who are successful that usually buy up their herds, or at least a few cows, to make up the full quota for their requirements.

There is one advantage at least in raising our own dairy cows, and this is the fact that we are less liable to introduce some disease into the herd. If we purchase cows from outside, or from a distance, we are running a risk of introducing some disease that may affect the entire herd.

A record should be kept of all the cows. This, if carefully done, will determine which cows are producing profitably and those that are not. Those that are not producing what they should after a good trial, should be sold at once and before another dollar is wasted. This is strictly a matter of business, where dollars and cents are involved, and must be treated as such.

The health of the herd is of importance, and we must see to it that the barn is laid out and built to proper requirements. A barn must be dry, built so as to give an abundance of light and the proper amount of ventilation, also roomy, as cattle require a great deal of space. Some have also advocated cement floors, but I am inclined to think this is not perhaps the best of practice. Even if it is perhaps possible to keep the stables a little more sanitary and tidy, yet cement floors are conducive to rheumatism.

Several herds, from my own personal observation, have become affected, and I trace the cause—a possible cause, at least—of producing rheumatism. Wood floors, or even a dry dirt floor, is the most practical, and these are the two types of floors most commonly found in use the country over.

Last, but not least, comes cleanliness about the dairy in order to produce clean milk. The milker must be cleanly in his habits, the cows must be in a healthy condition, the milking vessels must be scrupulously clean and the drinking water of the herd must be free from bacteria.

If the stable is well lighted, ventilated and the cows are cared for as they should be each day, there will be no trouble in turning out a product that is not only clean, but will win friends wherever put on the market.—H. W. Swope.

Save the Wheat

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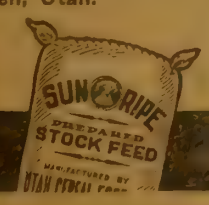


CONCRETE MANURE PITS

As stored on many farms, awaiting a convenient time for spreading over the land, manure loses a very large portion of its fertilizing value. Every one who has had opportunity to compare the old way of keeping manure stacked in an unprotected pile alongside of the stable, with the modern way in a concrete manure pit, has realized how soon the losses resulting from the old method would have paid for the modern concrete pit.

A concrete manure pit which has been planned with a view to permitting backing a wagon into the pit for loading. The portion of the floor beyond the incline in the pit is given a gentle slope of ¼ inch to the foot toward a gutter at the end, which in turn slopes toward a sump placed at one corner of the pit. This sump is for the purpose of receiving the liquid content of the manure and holding this liquid until convenient to pump it out and dispose of it by sprinkling on the land or otherwise.

For convenience in packing manure properly in a pit of this kind and to better control or regulate decomposition, the inside face of walls should be given a batter or slope as shown in the drawing. The incline at the entrance end is shown with grooves in the surface to provide a better foothold for teams when starting a heavily-loaded wagon out of the pit. If this surface is not steeper than 15 degrees with the horizontal probably such grooves will not be necessary.

This pit is 3 feet deep in the main portion and 16 by 31 feet, outside dimensions. The floor of this pit should be reinforced with round rods.

Where this size is to large a smaller one could be built useing figures and drawing as a guide.

AN EYE TO THE MACHINERY

J. C. Taylor

The needless depreciation of farm machinery runs high every year, and the western farmer is not to be criticised any more than his fellow farmer in eastern states, for this same fact holds true to a greater or less extent in every farm community. However, with a little extra time on the part of the owner when putting away his machinery in the fall, a large proportion of this annual loss can be avoided. It is not necessary to travel many miles to count a half dozen plows standing out in the field, perhaps four or five binders, three or four harrows, and that many mowing machines. These same machines cost conisderable money in these war times and it is not very good conservation to leave them out. The depreciation amounts to fully ten per cent annually and runs into dollars quite rapidly.

The annual loss can be eliminated to a great degree by building a machine shed, when a man can spare the money to patronize the lumber trust, or by using some paint to go over all the wood work before putting away the machinery in the fall. Unless a man can build a substantial shed, one that turns rain and snow and is closed up tightly to keep stock out, he might just as well store his machinery outside. On the average farm of 160 acres a building 20x30 feet can be made to house all the machinery used on the place and a number of other farm implements besides. The cost of such a building will soon be saved by additional years of service of the implements and reduction in annual repair bills. The average life of a mowing machine or binder exposed to the elements is only four or five years, while if properly cared for it should double the time.

When capital is the limiting factor and a shed is not available, the longevity of machinery can be increased by a good coat of paint and tightening of all loose bolts, which prevents moisture accumulating under the plates and crevices. Whether the machinery is to be housed or not, it should be cleaned and thoroughly oiled at the end of the season. At the same time an examination for any broken parts maye be made and noted. Then during the slack season such repairs as needed may be obtained and replaced. Much unnecessary delay next season may be saved by having every machine in readiness when the time comes to use it and the scarcity of labor is something to emphasize this point. When the boys have gone to war we must look out for war at home.

Oftentimes a new machine is practically ruined by running without oil. On account of paint in the bearings of new machinery, the moving parts often run hard for the first few days. On assembling or starting the machine this paint can be easily removed by an application of kerosene or a mixture of equal parts of kerosene and machine oil. Many farmers give their outfit excellent care when in use, but very little between seasons, and vice versa. At least one-half of good care consists in keeping the machinery properly repaired, in good adjustment, and thoroughly oiled when in use. The neglect of any of these lines mentioned means serious damage and a big reduction in the life of a machine.

THE LOW DOWN WAGON.

When the bicycles and automobiles first came into use they had high wheels. The first ones that came with low wheels looked queer and caused one to smile, but they have proved the best. Now a bicycle or an automobile with high wheels would look queer indeed.

Farmers have been accustomed to using wagons with high wheels for so long they have come to believe that high wheels are best. But they are not, with our modern roads and modern farming conditions. With bad roads, wagons with high wheels run easier than wagons with low wheels. On good roads low wheels are better in every way.

The modern low down farm wagons are fitted with wide tired wheels. This kind of wheels tends to smooth and make the roads good. They preserve good roads after they have been made.

For farm use only the wide tire is much better than the narrow tire. The wide tire holds up the load on soft field soil, preventing the cutting of ruts and making draft easier. Private roads on the farm are thereby made smooth and can be kept in good condition at slight cost. For hauling in soft fields and on plowed ground wide tires can be used when it is not possible to go into the field and haul loads on any size with wagons having wheels with narrow tires.

Wagons fitted with wide tired wheels are ideal for use in hayfields when the ground is soft, and the low down wagon is the only economical wagon in use for haying, hauling sheaf wheat, manure, fodder and farm feeds in general. The lift to the low-down wagon is light and saves labor, the equivalent of saving money. Owing to the short life and general convenience of the vehicle, one man can load and haul as much fodder in one day with a low-down wagon as two men can haul with a high wagon. The low-down wagon is that coming universal wagon for general farm use.—H. P. Williams.

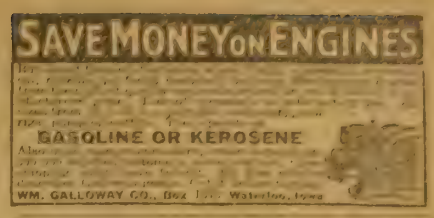
REAL ECONOMY

A canny Scot was sitting in the smoking compartment of the train, and after filling his pipe, he turned to the man on his left and asked: "Hae ye a match?"

The man went through his pockets and said: "I am sorry, but I have not."

Turning to the man on his right he asked the same question, and after a search this man also said: "I am very sorry, but I have used my last one."

"Ah, weel," said the Scot with a sigh, as he reached into his own pocket, "I'll hae to use one o' mi ain."



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Did you read the article on the shipping of Utah wheat to primary interior markets. Just at the present many of our farmers are interested in the selling of their wheat.

Dry-farming has become an important factor in the production of grain in this state. The feature story this week will interest every one who is doing any dry-farming.

Keep your tractor going. Do all the fall plowing possible. Anyone who has a tractor not in use should report to county agent and they will help you to keep it going. Help is a big thing these days, and the tractor is doing its part to solve it.

One farmer said, that fall plowed land would produce three to four tons more of sugar beets. According to this it pays to plow your land in the fall. Do all the plowing you can now, it means that much time saved in the spring besides a better production.

HOW TO SELL YOUR WHEAT.

If farmers can not sell their wheat to local buyers they can sell it direct to the government. Join together in making up a car or number of cars, when wheat is ready for shipment the Zone manager of the Grain Co-operation at Kansas City will give you shipping directions. You will be paid according to the quality of wheat you ship and on the basis of the nearest terminal market. Government will send wheat where they desire, but this will make no difference to you as to price because you are paid according to the nearest or best basis price less the freight and the one per-cent for handling it. There is a market for all the wheat we have, it is just a question of getting a car to load it in and shipping direction where to send it. The price is sent and will not be changed until next year.

HAVE YOU PLENTY OF SEED FOR NEXT YEAR

Possibly no other one thing will influence the increased production of food stuff so much as the use of good seed.

It is important that every one who will plant seed of any kind next year, secure as soon as possible the needed supply and of the very best quality.

When the purchasing of seed is left until spring or near seeding time one can not expect to get as good a quality as when more time and care is used.

Start now and plan your crops for next year and secure the kind of seed you need. Buy only the best even if you have to pay a little more for it. If you are going to use seed that you have grown, select it with care. Time and money are well spent when you get the right kind of seed.

UNFAIR TO THE FARMERS

When a man does all in his power to help in the production of food and because a frost distroys his crop on account of not being able to harvest it, he resents the statement that it was done willfully to keep up the price of farm products.

Much food has been wasted and destroyed for two reasons—the frost which came two or three weeks earlier than usual and the lack of help and equipment to handle and ship it.

The farmers are just as patriotic as any other class of men and want to do their "bit" to help win the war.

It was very unfortunate that food should be wasted but help was out of the question and the farmers have worked day and night, they know no hour limit, to save and properly harvest their crops.

Those who made the statement must have been misinformed or did not understand the details on which their remarks were made.

WILL HOGS WIN WAR?

The world is short of meat and fats. No other animal can be made to produce like the hog. We must not underestimate the influence the hog will have on the war. One of the government officials says: "The one most important in winning the war is the production of pork. * * * * Our need of hogs is far greater than that of men, munitions or money."

What a responsibility the swine growers have. We must produce 20,000,000 more hogs next year than we did this, and it is up to the men who know how to do it to produce them.

Such a statement should bring home to us the seriousness of the condition. Think of the hog being compared with men, money and munitions in this great conflict.

The farmer has met every call in the hour of need and he will do it again. If hogs are the urgent need, hogs are what the farmer will produce.

If it takes hogs to win the war, we will win.

WOOD WILL HELP SAVE COAL

In many sections of our country the coal problem can be helped by using more wood. Years ago we went to the nearby hills or canyons and secured our winters wood. After the rush of harvest is over it will be a patriotic service to go and haul your wood so that you can save the coal, allowing some one to use it who can not get any wood to burn.

Government officials have said that dry wood can be taken from the Forest Reserve by asking the one in charge.

Many of the trees on our farms could be cut down and used for fire wood.

In many instances we use coal just because it has become a custom to use it, even though wood might be more economical and easier obtained. If every one saves a little coal, the total saving will be considerable.

ONLY A REASONABLE PROFIT

Some one is going to pay the penalty for taking more than a reasonable profit in their business. This statement refers as much to the grocer, the miller or any one who is buying and selling food stuff of any kind. Mr. Hoover and his assistants have made it very plain, but some do not seem to realize it, that no one should take more than a reasonable profit.

Any one who does this will have to pay the penalty, he may escape for a while but when Uncle Sam goes after a proposition of this kind, they will know it. The right thing to do, is be fair, let every one work together and win the war. It is not fair that any firm or individual should profit out of this war, when so many are called to make sacrifices. Some may have to give their lives. Lets be reasonable and work together.

HIRED PATRIOTS.

A very great deal has been said about the famer's patriotism in the present national crisis. He has been urged to labor unceasingly to increase the national food supply and almost without exception he has done his level best with the odds against him. The increase of crops has increased his need of hired help, especially when his sons have been called to the battle front. He has paid high wages for unskilled city men who have frequently wasted more than they have earned. He has uncomplainingly endured foreign labor that rarely does more than it is driven to do, but the most trying thing of all has been the homegrown hired help that many farmers have had to put up with. True, most home-grown boys and men who hire out for wages have done their part, but there is a class who, knowing help must be had, are as worthless as it is possible to be, refusing to take work at contract prices, and when given a daily wage proceed to do as little as possible for their employer. Many a farmer has paid out hard-earned cash to men who have been wilfully worthless because they knew the farmer had to have help. And yet these men would resent being called unpatriotic.

We do not expect much patriotism from foreigners, but native-born citizens of the above described worthless class are un-American worthless trash second only to the I. W. W.'s.

Some have suggested that such should be sent to the battle front. God forbid! That is a place for honorable men who can be depended upon to do their full duty and more, not for a slacker who draws the pay and consumes the food of the man who feeds the world.—A Farmer in West Millard Farm Bureau News.

THE DAIRY SITUATION

We are aware that there is a feeling of unrest among the dairymen in certain sections on account of the unsettled conditions. Some complain that with the present prices of feed there is no profit in the production of milk and butter fat. This may be true in some cases, but we are inclined to take an optomistic view of the situation. There never was a time, perhaps, when the margin of profit has been smaller and it will probably crowd out the dairymen who do not take advantage of introducing better business methods, such as: keeping a record of the production of his cows so that low producers may be culled out, and providing silage for them during the winter. These two moves are absolutely necessary to obtain the efficiency that is called for at this time. Every effort should be made to cut down the cost of production, which means the same in the end as an advance in price for the products.

Reports coming from the East, the Middle West and the Pacific Coast, all seem to indicate that there will be an increase in prices for dairy products before many weeks. The prices for dairy stock are not lower than a year ago and the indications are that they will be higher.

A sale held in Sacramento, California, last week brought an average of $274.00 per head for Holsteins. The demand for good dairy cows is just as great as ever and at good prices all over the country.

It would be one of the greatest calamities imaginable to have the good dairy cows of the country slaughtered just at the time when they are so badly needed. They are necessary for the successful prosecution of the war. Milk is needed for children, invalids and the soldiers at the front and in hospitals.

Dairy cows are being slaughtered in Europe in great numbers because of necessity. It has not become necessary here and it should be avoided, because when this war is over the dairymen will be called upon to restock Europe with dairy cows. It seems to us like it would be good business to hold onto the dairy cows and heifers so that we will be prepared for the big demand that will surely come.

FEEDING YOUNG CHICKENS

(Continued from page 2)

chickens a good start in life. The mixtures should be fed in a crumbly mash and not in a sloppy condition. Johnnycake composed of the following ingredients in the proportions named is a very good feed for young chicks: One dozen infertile eggs or 1 pound of sifted beef scrap to 10 pounds of corn meal; add enough milk to make a pasty mash, and 1 tablespoonful of baking soda, and bake until done. Dry bread crumbs may be mixed with hardboiled eggs, making about one-fourth of the mixture eggs, or rolled oats may be used in place of the bread crumbs. Feed the bread crumbs, rolled oats, or Johnnycake mixtures five times daily for the first week ,then gradually substitute for one or two feeds of the mixture finely cracked grains of equal parts by weight of cracked wheat, finely cracked corn, and pinhead oatmeal or hulled oats, to which about 5 per cent of cracked peas or broken rice and 2 per cent of charcoal or millet or rape seed may be added. A commercial chick feed may be substituted if desired. The above ration can be fed until the chicks are two weeks old, when they should be placed on grain and a dry or wet mash mixture.

After the chicks are 10 days old, a good growing mash, composed of 2 parts by weight of bran, 2 parts middlings, 1 part cornmeal, 1 part low-grade wheat flour or red-dog middlings, and 10 per cent sifted beef scrap, may be placed in a hopper and left before them all the time. The mash may be fed either wet or dry; if wet, only enough moisture (either milk or water) should be added to make the feed crumbly, but in no sense sloppy. When this growing mash or mixture is not used, a hopper containing bran should be accessible to the chickens at all times.

After the chickens are two months old they may be fed four times daily, with good results. After they are three months old, three feedings a day are enough.

When one has only a few chickens, it is less trouble to purchase the prepared chick feeds, but where a considerable number are reared it is sometimes cheaper to buy the finely cracked grains and mix them together. Some chick feeds contain a large quantity of grit and may contain grains of poor quality, so that they should be carefully examined and guaranty as to quality secured before purchase.

As soon as the chickens will eat the whole wheat (usually in about eight weeks), cracked corn, and other grains, the smallsized chick feed can be eliminated. In addition to the above feeds the chickens' growth can be hastened if they are given sour milk, skim milk, or buttermilk to drink. Growing chickens kept on a good range may be given all their feed in a hopper, mixing 2 parts by weight of cracked corn with 1 part of wheat, or equal parts of cracked corn, wheat, and oats in one hopper and the dry mash for chickens in another. The beef scrap may be left out of the dry mash and fed in a separate hopper, so that the chickens can eat all of this feed they desire. If the beef scrap is to be fed separately it is advisable to wait until the chicks are 10 days old, although some poultrymen put the beef scrap before the young chickens at the start without bad results.

Chickens confined to small yards should always be supplied with green feed, such as lettuce, sprouted oats, alfalfa, or clover, but the best place to raise chickens successfully is on a good range where no extra green feed is required. Where the chickens are kept in small bare yards, fine charcoal, grit, and oyster shell should be kept before the chickens all of the time, and cracked or ground bone may be fed. The bone is not necessary for chickens that have a good range.

USE APPLES FOR THE NERVES

According to Dr. Josiah Oldfield, senior medical officer to the Lady Margaret's Fruitarian Hospital, London, the allies may have to call in the apple to help win the war. This is because the apple contains elements which furnish nutrition for the nerves.

Dr. Oldfield says that Germany is having no food troubles from the calorific point of view; that is, they are getting plenty of energy furnishing foods in concentrated forms such as meats, cereals, and potatoes. But what they do lack is nerve foods, furnished by fats, fruits, and salads. He states further that already the Germans are showing signs of this lack, in that certain resulting diseases are appearing. These diseases will "become worse and worse as winter comes on unless fresh fruit and salads and seed oils can be introduced largely into Germany."

Since these are the facts in case, Dr. Oldfield warns the allied nations that unless they also seek these nerve foods for their people and their soldiers, they also may acquire these diseases and lose that wonderful stamina, courage, and endurance which is so characteristic of the English fighters. He says that, weight for weight and bulk for bulk—the apple is the best nerve food that they can import.

Since the American government is urging the people to use less concentrates like wheat, meat, fats and sugar, we should eat more nuts and fruit, especially apples. Besides being valued as a nerve food, the apple has other good qualities. It contains some carbohydrates, the same food elements found in wheat and sugar; therefore it is an energy producing food. Due to its pleasant flavor and acid content, the apple aids digestion.

Eat an apple a day. It will not only furnish food for your body, but give you courage to see the war through.—T. H. Abell, Department of Horticulture, Utah Agricultural College.

NAVY BEANS THRESHED BY MACHINE OR HAND

Many have grown the navy bean this season for the first time and how to thresh them is proving a problem. Few localities have yet a regular bean threshing outfit, so that if the work is to be done by machinery the ordinary threshing outfit must be adjusted to meet the requirements of the crop. The essential point in making such adjustment is first to reduce the speed of the cylinder one-third or one-half of normal by substituting a larger pulley for the small one. Also the number of concaves must be reduced, six rows being about right for a low speed of cylinder, and if the concaves can be lowered somewhat it is an advantage.

If the thresherman can be induced to make the proper adjustments and use reasonable care, the loss by cracked beans will be small. The charge for threshing beans is generally slightly more per bushel than for wheat; ranging from five to eight cents, depending upon the amount to be threshed, the yield and the condition of the vines. Some threshmen have a special cylinder for bean threshing, or where the acreage is large there is a special machine. Suitable machinery for harvesting will do much to make bean growing permanent.

When a threshing machine is not available, the old-fashioned flail may be resorted to. If time and labor are available during the winter, as well as room for storage and threshing, moderate amounts of beans can be as cheaply threshed by hand as by machine, as the loss of high-priced seed from cracking is reduced to a minimum.

By any method of threshing, there is always dirt to be removed. If an ordinary fanning mill is not available the old method of allowing the wind to remove the trash when the beans are allowed to drop slowly from a basket raised to about the height of a man's shoulder may be employed. If the beans are to be sold directly to the grocer or consumer, further cleaning by hand is necessary to remove all cracked and discolored beans, small pebbles and other foreign matter.

The Preferred Stock of Your Light Company

The 300,000 residents of the great and thriving territory we serve, embracing northern and central Utah, southeastern Idaho and western Colorado, depend for one of the most important factors in the economy, comfort and convenience of their everyday life upon the service rendered by the Utah Power & Light Company. Consequently our business is a matter of personal concern to each one of our customers.

On the other hand, the growth and prosperity of our company depends very largely upon the good-will and support of our customers. With so many interests in common, the Utah Power & Light Company and its customers are natural partners. We want it to be an actual partnership. We want our customers to be stockholders in the Company so that they will have the larger interest that comes with ownership.

Before the announcement made several weeks ago of the company's offer to sell its 7% Cumulative Preferred Stock to them direct, our customers had already acquired this stock to the extent of more than $1,300,000 by purchase in the open market. Since that announcement others of our customers have purchased from the company direct $70,000 of this stock.

We have formulated a plan by which this 7% Preferred Stock may be secured on small monthly payments, as well as by full cash payment at the time of subscription. Briefly, these two plans of payment are as follows:

PLAN No. 1
(Cash Payment)
Under this plan you can busy as many shares of the 7% Preferred Stock of the Company as you desire, at par ($100 a share) plus accrued dividend to date of purchase.

PLAN No. 2
(Time Payment)
Under this plan you may buy from 1 to 25 shares, paying $10 per share down and $10 per share each month for 9 months, the final payment to include dividend accrued from last dividend date.

The soundness of an investment in the 7% Cumulative Preferred Stock of the Utah Power & Light Company, both as to safety of principal and certainty of income, cannot be questioned.

Figures That Show The Company's Growth

	Sept. 1, 1917	Percentage of increase in 4½ years
Number of Power Plants	45	18%
Capacity of Power Plants (Kilowatts)	152,022	55%
Total Connected Load (Kilowatts)	181,606	161%
Miles of Transmission Lines	1,274	24%
Miles of Distribution Lines	1,751	25%
Number of Customers Served	61,843	65%
Population of Territory Served	292,482	34%

We call your attention to the following pertinent facts:

1. The territory we serve is large and is rapidly growing, both in development and population.
2. In this territory we are now supplying electric current to 57 communities which were not receiving such service before the organization of the Utah Power & Light Company.
3. New purposes for which electric current can be used efficiently and economically are being constantly developed, which insures an ever-increasing demand for our product.
4. Since its organization the Utah Power & Light Company has not failed to pay regular dividends on its Preferred Stock.
5. Our business today is greater than ever before, as the result of a steady and uninterrupted growth.
6. The product we supply is absolutely indispensable to the communities we serve. The discontinuance of such service is unthinkable. This means that our business is permanent and stable.

As one of our customers, you are in an excellent position to judge our methods of management, our standard of physical upkeep, the character of our organization and the quality of the service we maintain.

Upon request at any of our offices or to any of our employes, we shall be glad to furnish you complete information regarding the Preferred Stock and the properties and holdings of the Utah Power & Light Company.

Utah Power & Light Co.

Efficient Public Service

HOME

SOME THICK SOUPS A MEAL IN THEMSELVES

It may be that the housewife is tiring of preparing vegetables in about the same way and she would like a new way of using the vegetables in the diet. A well made cream soup would be palatable and filling these cool nights.

Soup is not necessarily made from meat stock. Vegetable soup or purees are made by boiling potatoes, beans, peas or other vegetables until soft, mashing them through a sieve and then heating with a little liquid (water, milk, stock, or combination) and flavoring. Milk soups which are really milk thickened and flavored with some vegetable, fish or other food, and perhaps thickened still more with a little flour, as in white sauce, or stale bread crumbs, are both nutritious and appetizing. They furnish an excellent means of using skim milk.

In soup-making it should not be forgotten that vegetables are necessary to keep the body in health, because they are relatively rich in mineral matter. Since soups offer an excellent way of utilizing odds and ends of vegetables and especially left overs and parts which otherwise would be wasted, the use of vegetable soup is often a real economy.

Tomato Soup.

2 cups tomato, 3 cups milk, 1 slice onion, 2 tbs. butter, 3 tbs. flour, 1 tsp. sugar, ⅛ tsp. soda, 1 tsp. salt, ⅛ tsp. paprika.

Cook the tomatoes, sugar, salt and pepper for 10 minutes, then remove from heat and add soda. Scald the milk and onion. Rub butter and flour together, add litle milk, making a white sauce and combine with scalded milk and cook few minutes. Strain the tomato mixture slowly into the white sauce and serve at once.—Inga M. K. Allison.

MAKE THE RABBIT DO HIS BIT

We are asked to conserve our meat supply this does not apply to rabbits. It will be a good thing to use many of the rabbits that are now destroying our crops. Why not secure some? Here are some suggestions after you get the rabbit:

The rabbit has such possibilities that you can hardly go wrong when you have once caught your rabbit. What can you do with a rabbit? Exactly what you can do with a chicken—roast, pan, fry fricassee, and a dozen ways besides. Try one of these for your Thanksgiving dinner.

Roast Rabbit.

Wash the rabbit with soda water. Lay in salted water for an hour. Stuff the rabbit with onion, celary or chestnut dressing and sew up. Line a baking pan with the following; one onion and one carrot cut up, a few cloves, whole peppercorns and one bay leaf. Rub rabbit with salt and pepper and lay it upon this dressing, putting fat of oleo here and there over the rabbit. Sift a little flour over the top and pour a cup of stock or hot water into the pan. Cover tight and roast, basting frequently. When ready to serve, put on a hot platter and garnish with slices of lemon and cranberry jelly or currant jelly.

Spiced Rabbit

Wash rabbit in soda water. Disjoint hind legs; cut off the saddle; remove the forequarters, making in all nine pieces. Lay in salt water about an hour. Place rabbit in dish with vinegar poured over it and let it remain over night. Remove from pickle, salt each piece lightly and arrange in baking pan. Cut up an onion in it, adding one bay leaf, a dozen pepper corns, part of a celery root, a cup of stock, and a little vinegar from the pickle. Cover with another pan, put in a quick oven and bake an hour. Remove upper pan, and brown, basting frequently. When brown, remove and arrange pieces on a hot dish. To the pan add a tablespoon of flour browned in fat drippings and a cup of stock. If not spiced enough, add pepper and a very little mace. If desired, add a can of mushrooms that have been drained and washed. Pour the gravy over the rabbit, dust with chopped parsley, and send to the table.

Chestnut Stuffing.

Shell one quart of Italian chestnuts. Boil until skin is softened, then drain and remove the skins; put back in water and boil until soft and rub through a sieve while hot. Season the mashed chestnuts with one tablespoon bacon fat, one teaspoon each of salt, grated lemon rind and chopped parsley. Add three tablespoons of grated bread crumbs and two well-beaten eggs. Be sure the stuffing is not too wet.

NOON MEAL FOR CHILD.

There is no reason why the ordinary family dinner should not be suitable for school children or served in a way that adapts it to their needs. The usual first course of meat and vegetables contains nothing, except the meat, which can not be given even to the youngest children. The vegetables, provided they are carefully prepared by simple methods, are specially needed and can often be made attractive to children by being served with a little meat gravy. As a substitute for the meat itself, milk can be provided in the case of the younger children. These articles, with the bread and butter, provide most of the food needed.

The dessert course is suitable for children as well as for grown people, unless it consists of rich pastries or puddings. The latter are not considered wholesome for children, if for no other reason than that they are likely to lead to overeating. Such desserts as fruit, fresh or cooked, with cake; cereals with milk, or cream, and sugar; custards and custard puddings; gelation dishes; simple ice cream; water ices; and other simple desserts may be given.

Whether or not the family meal is healthful for children depends not only on the food materials selected but also on the way in which they are cooked. Simple methods are to be preferred from the standpoint of health as well as from that of the housekeeper's time. All dishes that are likely to contain overheated and scorched fats, such as foods carelessly fried in a pan in a small amount of fat, should be avoided. Deep-fat frying is open to fewer objections, since, if properly done, foods will absorb little fat and the fat will not scorch. Vegetables cooked in water or in their own juices and seasoned with salt and a little butter or cream are easier to prepare than those that are served with white sauce, scalloped, or cooked in other elaborate ways.

What is said above applies equally to all meals. There is, however, one special precaution that applies to the noon meal when it is hurried. This refers to tough, hard foods that are likely to escape proper mastication. It is a mistake to think that the foods given to children must always be soft or finely divided, for children's teeth need exercise quite as much as their muscles do. When time for eating is limited, however, it is well to omit foods that are difficult to chew, and in extreme cases it may be necessary to serve only soft or finely divided foods—sandwiches made from crustless bread with finely chopped fillings, for example. Before resorting to this, however, it is well to make sure that the time for eating and for insistence on good table manners is not unnecessarily cut short. The advantage of putting the meal on the table promptly and of having foods served in individual portions, or at least ready to eat when they are brought to the table, should be kept in mind. To have the meal already sliced and the dessert in cups instead of in one large dish from which individual portions must be served, and to follow the same general plan with other foods, may change a hurried meal into one at which there is plenty of time for attention to details essential to health and good manners.

If special lunches, different from those prepared for the family in general, are to be given to school children, the following are suggested as bills of fare. They are only typical and many others might be given which might be just as good.

Suggested Bills of Fare for the Home Lunch.

1. Eggs, boiled, coddled, poached, or scrambled; bread and butter; spinach or other greens; cake.
2. Beef stew with vegetables; milk; crisp, thin tea biscuits; honey.
3. Dried bean or pea puree; toast; baked apple; cookies.
4. Vegetable-milk soup; zwieback; rice with maple sugar and butter or with milk or cream.
5. Potato chowder; crackers; jelly sandwiches.
6. Cold meat; creamed potatoes; peas; bread and butter; frozen custard or plain ice cream and plain cake.
7. Lamb chop; baked potatoes; bread and butter; sliced mixed fruits; cookies.
8. Baked omelet with spinach, kale, or other greens; bread and butter; apple sauce; cake.
9. Milk toast; string beans; stewed fruit; cake.
10. Boiled potatoes; codfish gravy; bread and butter; lettuce; custard.

SOME GOOD RECIPES

Hashed Browned Potatoes.

Put one and one-half tablespoonfuls of butter into a frying pan; chop up six cold boiled potatoes, season them with salt and pepper and moisten them with about six tablespoonfuls of cream. Spread the moistened potatoes in the frying pan as soon as the butter is melted. Draw to the back of the stove, where the potatoes will brown slowly. In a half an hour examine them, and if they are a golden brown fold over like an omelet and serve at once.

Corn Fritters

Take twelve ears of corn, cut the grain down the middle, scrape off the corn, stir in gradually two tablespoonsful of flour, three eggs, beaten light, salt and pepper to taste, mix all well together and allow one tablespoonful for each fritter and fry in deep fat.

Steamed Corn Bread.

Two cupfuls of sour milk, one cupful of sweet milk, one-half cupful of stoned prunes, two cupfuls of cornmeal, one-half cupful of white flour, one-half cupful of graham flour, one-half cupful of molasses, one-half cupful of brown sugar, two tablespoonfuls of butter, one-half teaspoonful of salt, one teaspoonful of baking soda. Cover the prunes with cold water and soak them until soft; then remove the stones and dry the fruit. Add them to the other ingredients and mix the whole thoroughly. Place in a dish and steam steadily for about four hours. Be sure to have plenty of water boiling constantly in the vessel under the steamer.

Cream Pie.

One cup sugar, two eggs, one-third

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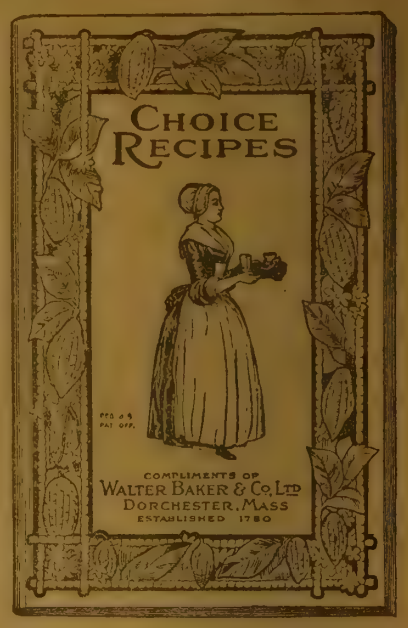

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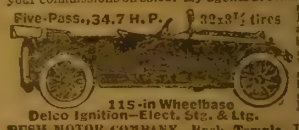

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cup butter, half cup milk, one and a half cups pastry flour and one and a half teaspoons baking soda. Use half pint jar cream, whipped.

Graham Muffins.

Mix together one cup graham flour unsifted, half a cup of white flour, one heaping teaspoon Indian meal, two heaping teaspoons baking powder, half or two-thirds cup sugar and one teaspon salt. Then add one full cup milk, one beaten egg and one tablespoon melted butter. Bake in moderate oven. This makes little over one dozen.

Beef and Rice Croquettes.

Mix one cup of raw beef from top of round, cut fine, with one-third cup of washed rice, add half teaspoon salt, quarter teaspoon of pepper and a little cayenne. Wrap the mixture in cabbage leaves which have been boiled two minutes and stew one hour in tomato sauce. Brown four tablespoons of butter, add five tablespoons of flour, and brown. Add one and a half cups each of brown stock and stewed and strained tomato, one slice each of carrot and onion, a bit of bay leaf, a sprig of parsley, four cloves, three-quarter teaspoon salt, one-quarter teaspoon pepper and a little cayenne. Cook ten minutes and strain.

Puree of Carrots.

Boil enough carrots to make a pint after being run through colander. Put one and a half pints of milk and carrots on stove, when boiling, add three small tablespoons of flour wet in little cold milk. Stir constantly as it boils and, last, a little pepper, butter and saltspoon of salt.

SUGAR-SAVING DESSERTS

Saving sugar is imperative at this stage of the war, and we offer the following recipes, tested by practical housekeepers, as ways for the thrifty housewife to aid in the national sugar economy campaign:

Pumpkin Pudding

2 cups stewed pumpkin, ½ cup brown sugar, ½ cup honey or maple sirup, 2 eggs, 1 tablespoon flour, 1 teaspoon cinnamon, ½ teaspoon nutmeg, ½ teaspoon cloves, ⅛ teaspoon ginger, 1 teaspoon vanilla, 1 pinch of salt, 2 cups milk.

Mix all ingredients and bake in greased pudding dish. Serve hot or cold.

Indian Pudding.

5 cups milk, 1-3 cup cornmeal, 1 teaspoon ginger, ½ cup honey, 1 teaspoon salt.

Cook milk and meal in double boiler 20 minutes. Add honey, salt, and ginger. Pour into buttered pudding dish and bake two hours slowly. Serve with tart jelly or preserves.

Cheese Custard.

1½ cups cottage cheese, ½ cup maple sirup or honey, 2 tablespoons milk, 3 eggs, 1 teaspoon melted fat.

Press the cheese through a colander; beat the eggs until light; add them with all the other ingredinets to the cheese; mix until smooth. Place in a baking dish and bake in a moderate oven about 30 minutes.

Peach Souffle.

1 quart canned peaches, ½ cup honey or sirup, 3 eggs.

Drain and mash through colander one quart of canned peaches. Add one-half cup of honey or sirup and well beaten yolks. Beat thoroughly, then beat whites stiff and fold carefully into the peach mixture. Turn the whole into a greased baking dish and bake in a quick oven six minutes.

Apples and Dates.

Steam until tender in a covered pan one and one-half quarts of sliced apples, with one-half cup of water, and the grated peel of one lemon. Add one-half cup of chopped dates. Simmer the fruits together for six minutes. Serve cold.

GET RID OF RUBBISH

W. F. Purdue.

Did you ever notice a barnyard or an orchard which seemed to be literally covered with piles of old boards, stone and rubbish of all sorts? Such premises are pretty sure to be well-stocked with rats, and unless the rubbish is removed it is almost impossible to clean the rats out.

A general cleaning up of the premises will also help in the fight against insect enemies. Some of the worst insect pests spend the winter under rubbish, around grass roots, in fact shelter of all kinds. Remove as many of these wintering places as possible, and some of the bugs are sure to perish. All shelters, of course, can not be destroyed but much may be done. Clean up all boards and rubbish heaps, clear out the fence corners and destroy as many of the weed patches as possible.

What to do with the old rubbish is sometimes a perplexing problem. Rubbish of all sorts, such as worn-out machinery, old tin cans, broken window panes and glassware of various sorts, broken crockery and dishes, old shoes, etc., will accumulate around all premises slowly but surely, and in time will make a considerable pile. As has been said, it is advisable to keep all this cleared away yet often one does not know how to dispose of it.

Worn-out machinery and tools can be broken up and the pieces of wood converted into fuel and the metal parts sold for junk, if worthless. Old shoes can be burned. As for the tin cans and glassware, about the only thing to do with this stuff is to haul it to some unused corner of the farm, or else dig a deep hole and bury it. The latter method is probably the better way of solving the problem, as the rubbish is then out of the way for all time, while if it is piled in some corner of the farm it will probably be in the way of someone at some time.

SERIOUS TIMES AHEAD

An optimist is always more welcome than a pessimist but at this particular time it is well to sound a note of warning and draw from the experience of others to enable one to avoid some of the sorrows which are sure to come if we do not mend our ways as a people.

War is here. On that the American people can no longer deceive themselves. The hosts of the hun are not only holding their foes in check, but are blasting their way through the Italian and Russion lines so that it is absolutely essential that those countries be given help. That means that the American soldiers must get into the trenches at once—the press dispatches tell us they are already there. Our boys will be wounded and killed and soon the death lists will be coming back home. This will bring sorrow into the homes of the people. But that is not all. The food crop is way below the amount needed to meet the requirements in our own country and those of our suffering and fighting allies. This situation entails a responsibility upon every individual that he cannot escape. Wheat, meat and sugar are the three essential products in sustaining life in man and of these three articles of food not a single kernel nor ounce must be wasted by the American people, the most profligate wasters in the world. We not only waste by throwing good food into the garbage can but we waste by eating more than we need to sustain our energy. This must all be stopped and especially must we cut down on our consumption of bread, meat and sugar. The National Food Administration is working out this problem as fast as possible and the promise is made that it will not be long before the people everywhere throughout the country will be brought face to face with the actual situation and confronted with their responsibilities in the matter. It is a good time to begin to anticipate these things and begin right now to retrench. Eliminate waste in purchasing expensive wearing apparel, eating costly foods, indulging in pleasures that can be foregone and in every other way possible for we will need every resource to meet the strenuous experience that is awaiting us.—Box Elder News.

The best flagpole American farmers can erect is the silo. But why not put up a flag-pole too?

Talk Over Rubber Footwear

with any man who wears "Ball-Band" and find out why he wears it.

About nine and one-half million people buy "Ball-Band" because they have found out that its low cost per days wear makes it a money-saving footwear.

"BALL (Red Ball) BAND"

Rubber Footwear

is made in sizes for men and boys and sold by 55,000 dealers. It's no trouble to find a store that sells it. Write for free booklet "More Days Wear" that pictures and describes the different kinds of "Ball-Band" Rubber Footwear. Look for the Red Ball Trade Mark when buying.

MISHAWAKA WOOLEN MFG. CO., 370 Water St., Mishawaka, Indiana

"The House That Pays Millions for Quality"

WANTED

Skilled Tractor Engineers BIG PAY

The fast growing importance of the Tractor has caused a great demand for trained tractor operators and repair men. Competent men are making big money and there are nowhere near enough men to fill the positions open. We have just added a course of Tractioneering. You learn how to operate and repair tractors, plow, etc. You get practical instructions on the famous Holt Caterpillar "30." We also give thorough courses in Auto Repairing, Machine Work, Ignition, Batteries, Oxy-Acetylene Welding, Vulcanizing. Expert Instructors. We help students earn room and board.

$50 TRACTOR COURSE FREE

For a very limited time we are giving the partcical Tractor course free to every man who enrolls for our general auto repairing and driving course. Write TODAY for our free 64-page illustrated catalog and full information.

NATIONAL AUTOMOTIVE SCHOOL

ESTABLISHED 1905

THE PACIFIC TRACTOR SCHOOL IN THE WEST

823 FIGUEROA ST Los Angeles

100 POUND UNIT FOR POTATOES

No standard measure for the handling of potatoes is uniformly accepted in the United States. In certain states various units of measurements have been established through usage. For instance, Maine has adopted the 165 pound barrel; Washington, the ton; New York, Michigan, Wisconsin and others, the bushel; and Colorado, Idaho and Oregon, 100 pounds as the basis. The confusion caused by the wide difference of units of measurement has led to the demand for a uniform standard to be adopted for the entire United States.

A joint committee representing the growers and the shippers and distributers held a conference in Washington recently. This committee went on record as recommending that the Bureau of Standards be urged to take the necessary steps as soon as possible toward the establishment of 100 pounds as the unit upon which price quotations existed and the buying and selling of potatoes shall be based throughout the United States.

On the 15th of November this rule will go into effect and all quotations will be based on the 100 pound unit.

Killing cattle ticks is cheaper than feeding them.

TRUTH OF FOOD SITUATION IN FRANCE

(Continued from page 3)

ican make. One saw the American mark on the plows, harrows, the rakes and reapers and binders and threshers all over France. Since the war much of this machinery has deteriorated sadly and a great part of it is entirely unfit for use, because there are not the mechanics to keep it in repair, and there has not been the importation of new machines and parts to replace the old and worn-out pieces.

France is a country at war, very really and terribly at war. The invader is on her soil. Her mines and furnaces and factories are in German hands. Her richest manufacturing provinces are held by the enemy. Her men must go to the trenches to defend their country and drive back the hordes from across the Rhine. And those men of the armies must be fed and have the means to fight. Above all, they must have arms and munitions, big guns and shells.

Resources Have Suffered.

Every thought of France for three long years of a bloody and sacrificial war has been given to "les braves" at the front. Little has remained for the civilians at the rear, who have borne their trials in stoic calm for the sake of the soldiers in the trenches. And in those years the resources of France have suffered, especially the farm resources, for imports have had to be directed to the army. The steel brought in has been for shells, the machinery to make more shells an guns. The plowshare has been beaten into a sword, while the reaper has rotted idle in the fields with only the hands of women and children to tend it.

Now, France needs grain. She must have grain to make bread both for soldiers and civilians. And only America can supply it. The burden of victory lies as heavily on our western farmers as on the soldiers on the battle fields of France.

In his third and last article, which will appear in the Farmer next week, Mr. Pitney points out that the French people are very much like Americans to the extent that they prize their independence and resent efforts of the government to dictate methods of eating and living. They have also been liberal in feeding refugees without thought of their own future welfare. Hence they now face a dire shortage which official figures clearly prove. Farmers in America have a wonderful opportunity in helping to restore the agriculture of France by furnishing livestock, both now and after the war.

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BIG CROP PROBLEM IS MET BY GAS TRACTOR

W. H. Sanders.

The farmer of today faces the problem of raising more crops than he has ever produced before.

"To meet this problem of increased production, the farmer must have more power for the cultivation of crops' Six horses is the maximum number that can be handled by one man and this number cannot give sufficient power. The gas tractor is rapidly coming to fill this lack of power because of its great amount of pulling strength and because it can be easily operated by one man.

"The gas tractor is being used more extensively because it makes possible the cultivation of more than could be cultivated by horses. The gas tractor is rapidly replacing the steam engine in threshing because there is less danger from fire from a gas engine.

"Another important use of the gas tractor is in road building. A tractor can easily pull two road graders. With the agitation for good roads the system of using tractors in grading should appeal to every man. In cities the tractor is used in removing earth from the streets where paving is to be laid. By the use of a machine to elevate the dirt into wagons a section of earth one foot thick can be removed from the top of the roadbed. The tractor is used in cutting drainage ditches on flat land at a smaller cost than any other excavating machine.

"The extensive use of the tractor is shown by the large number of tractor factories in the United States. At present there are perhaps more than 125 of these factories in this country. Enormous orders for tractors are being placed in our factories by European countries for the cultivation of this year's crops."

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WINTER RULES

Protect your animals from the cold. This will make them more comfortable, and will save you feed.

Stop the holes in your barn. Board in your tie-up.

An old horse, especially, like an old man, feels the cold.

Blanket your horses on frosty nights in the Fall, when their coats are short.

Give your horses and cattle a good bed. Bedding is cheap.

Water your horses at least three times a day. The stomach of the horse is very small.

Punctuality in feeding and watering the stock is very important. They will worry and lose flesh if kept waiting beyond the regular time.

A good grooming costs no money, and is equal to two quarts of oats.

A horse cannot thrive on hay alone. He needs oats or corn for strength; and grass, bran or potatoes to keep his bowels right.

Keep your horse's feet soft, and have him shod often. More feet are ruined in the stable than on the road.

Do not degrade your family by using a lame horse.

Kill the worn-out or incurably lame horse. If you sell him, the money that you receive is blood money.

Used Car Bargains

We offer, subject to very liberal terms, the best used cars in America. The standard values of the automobile world. We refer directly to the Oldsmobile and Buick cars.

We have these cars, in stock, ready for immediate delivery, newly painted, in first-class mechanical condition. Exceptional values—many of the cars offered have run less than 5,000 miles.

Write us stating your car requirements, Department F.

THE RANDAL-DODD AUTO CO.
Automobile Row
Salt Lake City, Utah.

Distributors — Buicks, Oldsmobiles, National cars. G. M. C. trucks.

FREE TRIAL
NO DEPOSIT
EASY TERMS

This style COLUMBIA GRAFONOLA has been sold for years to more people than any other instrument, regardless of name, price or make. We offer to send you this instrument and your choice of records on FREE TRIAL without a cent in advance. Think what it would mean to have the World's Greatest Singers and Musicians right in Your Own Home, ready to entertain you hour after hour. Remember, the outfit is sent on FREE TRIAL, and if you don't want to keep it after trial we will pay the charges back to Salt Lake. You're free to make your own decision. No salesman or canvassers will bother you. Catalogue and further particulars free.

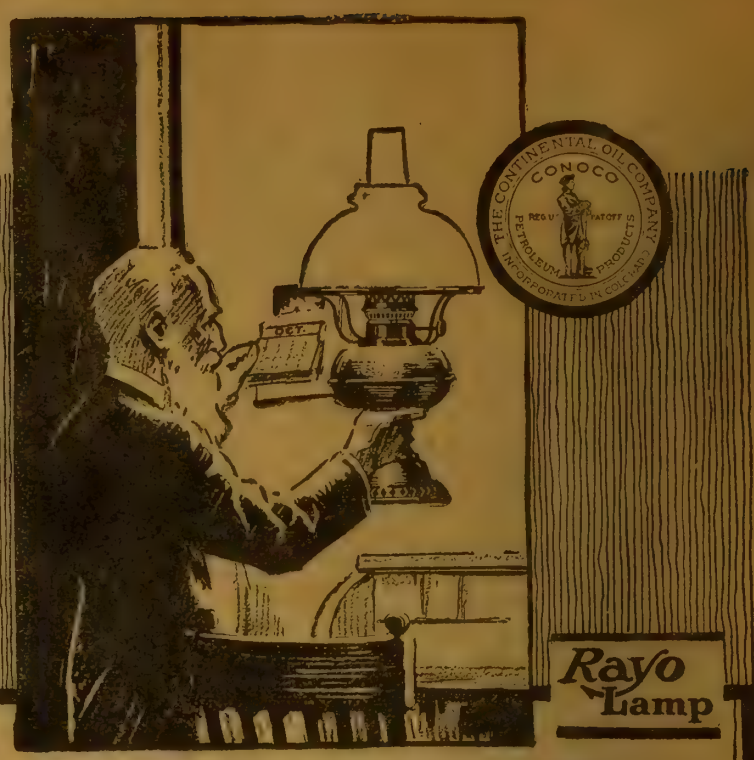
SEND COUPON

DAYNES-BEEBE MUSIC CO. (UF)
61-3-5 Main Street,
Salt Lake, Utah.

Gentlemen: Please send me beautifully illustrated catalogue showing all styles of COLUMBIA GRAFONOLAS (in colors) also 424-page catalog and prices, terms and full particulars of your FREE TRIAL OFFER. All done at obligation free.

Name ...

Address ...



LIKE MELLOW SUNLIGHT

"Specs" were for old folks when grandpa was young. He wears specs now but often forgets to use them in the mellow sunlight of his Rayo Lamp.

The RAYO LAMP

can be lighted as easily as a gas jet, without taking off either the chimney or the shade. Strong, simple construction. Artistic in design. It gives a soft, steady light that saves eye-strain.

Ask for it by name. If your dealer does not have it write to our nearest station.

Conoco Safety Oil gives best results.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Albuquerque Pueblo Butte Boise
Denver Salt Lake City Cheyenne

The Greatest Holstein Sale

of the season will be the complete dispersion of the Holstein herd of
THE PIONEER STOCK AND DAIRY FARM, AT BUHL, IDAHO
NOVEMBER 21 and 22

This herd represents many years of study and careful selection, together with the use of the very best blood in the Holstein breed, with the result that today it stands head and shoulder above any herd in the state and possibly the West for profiatble production.

The last year's records of the Buhl Pioneer Cow Testing Association shows that:

This was the only herd to have a cow that produced over 14,650 pounds of milk during the year,

That it was the only herd to have three cows that gave over 14,210 pounds,

That it was the only herd of Holsteins to have a cow produce over 100 pounds of butter in 29 days, or one that produced 683 pounds of butter in the year.

That it was the only herd to have five cows that averaged 600 pounds of butter during the year, and seven to average over 14,120 pounds of milk.

That it was the only herd to have a three year old produce 2,442 pounds of milk in 30 days, and one that produced over 575 pounds of butter during the year.

This herd with 65 per cent of the cows only two years old or under, averaged 472.1 pounds of butter for the year.

This is the class of stuff that will be offered to you at your own price. Cows of this class have never before been offered you at public auction.

The entire herd of 60 females, including twelve head of Registered Holsteins, many with creditable A. R. O. records, will be sold without reservation, together with the herd bulls.

Daisy Pontiac Lad, 107258 now stands at the head of the herd. He is bred along lines that have produced many past and present champions. The dam and A. R. O. cow is by King Pontiac Ted, from a daughter of Sir Korndyke Triromia De Kol, who is by a son of Sir Korndyke Manor De Kol, one of the greatest transmitting sires that ever lived.

The herd carries more blood of the famous KING of the PONTIACS than any other herd in the Northwest. Every female of breeding age is either bred to a son or grandson, or carries some of his blood.

DON'T FORGET THE DATE—NOVEMBER 21ST AND 22ND.

Purchasers from a distance will be our guests at the Buhl Hotel. Transportation from the hotel to the ranch will be arranged.

Write the owner, A. A. Stauffacher, or the clerk S. J. Hammel, both of Buhl, Idaho, for tabulated list, or any further information.

Auctioneers—Colonels, Walter and Clayton.

MEAT PRODUCTION AND CONSERVATION

(Continued from page 3)

One note of warning should be sounded in this increase of livestock: livestock may eat grains and other products which are suitable for human food. This should be permitted only when absolutely necessary. Most of the meat should be produced from range and pasture lands not suited to the production of crops which can be used directly by man, and from hay and by-products such as bran and shorts, beet pulp, the various oil meals, tankage and other by-products of human industry. Livestock appear in their highest roll of service only when they are made to yield their refined products so valuable to mankind chiefly from coarse, low-grade materials which man has not the capacity to utilize directly.

ELYMUS CONDENSATUS

Utah Farmer:

Can you recommend the planting of Elymus Condensatus.

Answered by Dr. Geo. Stewart, Utah Agricultural College.

"Elymus Condensatus" is a native grass of this region. It is coarse and makes good grazing for cattle and sheep. Horses eat it but do not do well on it. It resists drought and alkali and does fairly well under conditions that are too severe for most ordinary crop grasses. Ordinarily it is not to be recommended for sowing on farms because generally other plants are more adapted for such use. Under certain conditions, however, such a hillside pasture or rough lowland pasture it may be advisable to plant. Even this, however, is questionable.

GOVERNMENT CROP REPORT

A summary of preliminary estimates of crop production for the State of Utah, and for the United States, as compiled by the Bureau of Crop Estimates ,and transmitted through the Weather Bureau), U. S. Department of Agriculture, is as follows:

Crops	Utah	United States
WHEAT		
Production this year, bu.	6,955,000	659,797,000
Production last year, Dec. est., bu.	6,900,000	639,886,000
OATS		
Production this year, bu.	4,488,000	1,580,714,000
Production last year, Dec. est., bu.	4,480,000	1,251,992,000
BARLEY		
Production this year, bu.	1,221,000	201,659,000
Production last year, Dec. est., bu.	1,224,000	180,927,000
POTATOES		
Production this year, bu.	4,850,000	440,000,000
Production last year, Dec. est., bu.	3,600,000	285,437,000
ALL HAY		
Production this year, tons	1,334,000	91,715,000
Production last year, Dec. est., tons	947,000	109,786,000
SUGAR BEETS		
November 1 forecast, tons	1,110,000	7,620,000
Production last year, Dec. est., tons	708,000	5,920,000
PRICES*		
Wheat, cents per bushel	180	200.0
	142	158.4
Corn, cents per bushel	170	146.0
	106	85.0
Oats, cents per bushel	79	61.7
	55	49.0
Potatoes, cents per bushel	66	128.0
	102	135.7
Hay, dollars per ton	12.20	15.20
	13.00	9.99
Eggs, cents per dozen	43	39.4
	35	32.2

*The first price given is the average on November 1 this year, and the second the average of November 1 last year.

FEED THE ALLIES BY SAVING POUND OF FLOUR A WEEK

The United States Food Administration issues the following:

Your Government asks you to use 1 pound less of wheat flour a week. These are the reasons:

The wheat crop of our allies is short. Our allies look to us to save them from a wheat famine. They must have 220,000,000 bushels from the United States.

If famine comes, they can't fight. Then we would have to carry on the war alone.

We have only 88,000,000 bushels of wheat more than we use each year. This we can send them, but it isn't sufficient. We can't send them corn meal, for it doesn't keep in shipping. We can't send them corn, for they haven't the necessary mills to grind it. Where must these 132,000,000 other bushels of wheat come from?

From our savings—from you!

There are 100,000,000 of us, using an average of 5 pounds of wheat flour a week per person.

If you by the hundred million, use only 4 pounds a week—1 pound less—we can ship those 132,000,000 bushels of wheat. And your pound is easily saved:

By having one wheatless meal a day—more, if you can—eating rye bread, corn bread, barley bread, and other kinds, instead of wheat bread, and by serving less pie and cake;

By ordering your bread a day in advance; then the baker will not bake too much and have it go stale.

By cutting the loaf on the table as each slice is needed; then none will go stale;

By making into puddings or toasting every crust or piece that does go stale.

You are the guard over the soldier's ration; he will attend to the enemy.

NO PRICE IS FIXED ON BEANS BY THE FOOD ADMINISTRATION

In answer to inquiries from the important bean-producing sections the United States Food Administration announces that it has fixed no price on beans and does not contemplate doing so.

The Army and Navy have recently purchased specific lots of beans to be shipped before November 15. The Federal Trade Commission advised as to costs of beans in the hands of dealers and the Food Administration advised as to where these orders might be placed, but the purchases were made by the properly constituted authorities, i. e., the Quartermaster General of the Army and the Paymaster General of the Navy.

Orders Placed With Dealers.

The Food Administration is informed that these orders were placed almost entirely with dealers, and that while these prices may have been below market value, they represented fair profit to dealers, based on Federal Trade Commission reports.

The food-control act does not authorize the Food Administration to fix prices to the grower of beans, but it has the responsibility of preventing the various agencies in distribution from exacting unreasonable profits, to the end that beans may reach the consumer at as reasonable a price as is consistent with a reasonable profit to any necessary factor in distribution. Speculating and hoarding and reselling within the trade must be discontinued, and dealers are required to sell at a reasonable profit over actual cost at the time of sale, without regard to the market or replacement value.

Protects Producer and Consumer.

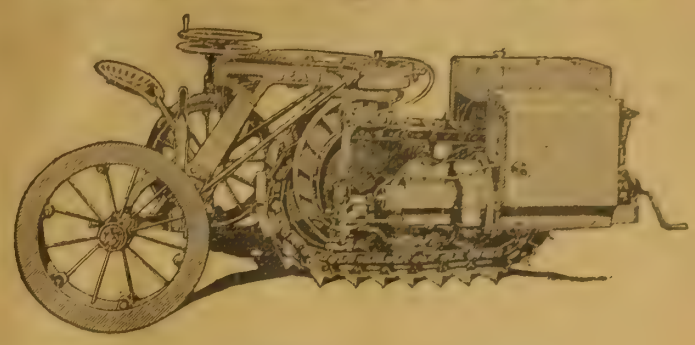
This policy is adopted for the protection of the producer as well as for the consumer, and it is much to be desired that every bean grower using soil adapted for bean growing and exercising due care and diligence should receive a fair profit over the cost of production. Of course, no agency of the Government could undertake to protect individuals or districts which have been unfortunate in weather and crop conditions if the general supply operates in such a way as to make the market values disappointing for particular sections. While the crops in New York State and Michigan are disappointing, the enormous increase in Colorado, New Mexico, and California far more than offset these shortages and must necessarily affect the general market values.

Imports from Manchuria.

In recent years large importations of Manchurian beans of good quality have been brought into this country, and the reports now are that the Manchurian crop is vastly increased over any previous year. By reason of the shortage of tonnage and the dangers in the submarine zone the Manchurian beans are very naturally seeking a market in this country. They could hardly move in any other direction.

The Food Administration proposes to help wherever possible in the campaign to encourage the farmer and increase production, but the economic conditions above referred to are the real couses of the present unsettled conditions of the market and must be reckoned with.

Make two blade of grass grow where one grew before



TrackPULL Tractor

Here are some reasons why you should buy a Bean TrackPULL Tractor:

1. Pulls instead of pushes itself over the ground.
2. Can be "gee-ed" and "haw-ed" out of holes and soft places like a team.
3. Has full-power pull on turns as well as on the straight-away.
4. Turns clear around in a 10-foot circle (5-foot radius).
4. Plows or harrows as close up in the corners of fields as a team.
6. Plows as close to vines and trees as a team.
7. Makes little difference how far off center you hitch.
8. Goes under branches of trees that no team can get under.
9. Runs stationary machinery up to 10 H. P. when not plowing.
10. Weighs less and costs less to run than wheel-type tractors of same ability.
11. Pays for itself in what it saves.
12. Light weight on long track surface.
13. Cultivates 10 to 15 acres in 10 hours.
14. Plows from 4 to 7 acres in 10 hours.
15. Little power required to pull tractor—power all goes to pull.

A post card will bring full description, price and terms.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Home Visitors Excursions

EAST

Via

UNION PACIFIC SYSTEM — OVERLAND ROUTE — O.S.L.R.R.

Tickets solds—
November 24; 27;
December 20, 22, 24

LIMIT—
Three months from date of sale.

Following Round Trip fares will apply from Salt Lake City, or Ogden. (Rates subject to war tax after November 1, 1917)

Denver	$27.50
Colorado Springs	27.50
Pueblo	27.50
Omaha or Kansas City	42.50
St. Louis	53.70
Memphis	62.50
Chicago	61.50
Minneapolis or St. Paul	58.94

Correspondingly low rates from many other points to many other points. See Agents for details.

L. J. KEYES,
District Passenger Agent,
Hotel Utah.
D. S. SPENCER,
General Passenger Agent,
Salt Lake City, Utah.

TAKING THE JOY FROM LIFE THE PERFECT COME-BACK

"Willie, your master's report of your work is very bad. Do you know when Woodrow Wilson was your age he was head of the school?"

"Yes, pa; and when he was your age he was President of the United States."

LIVE STOCK

GETTING PROFIT FROM HOGS

Government assurance that the price of hogs will not be below $15 per hundred pounds and the establishment of this minimum price brings the hog industry prominently to the forefront. Men who know the ins and the outs of the hog industry declare that any good farmer, and even some others, can produce pork at a cost of eight cents per pound, through usual feeding. But if the farmer utilizes waste, his profits increase. The result is that many farmers raise hogs for less than eight cents a pound and will, as a result of the minimum price schedule, make a profit of 100 per cent on their livestock during the war period.

There are good profits in the hog industry and Utah is excellently situated for the business. That has been proven by hundreds of farmers. However there is a general shortage of pork in the world and this is also true of the intermountain states as well as practically every other state and nation of the world.

A shortage of pork necessarily means that the price will remain high, probably higher than the government minimum. Especially must this be anticipated when one finds that the exports of pork on a three-year prewar average was 992,-885,500 pounds and increased in the fiscal year of 1916-17 to 1,501,271,000 pounds, considerable more than 50 per cent while the domestic consumption increased from 72.08 pounds per capita to 75.77 pounds.

At the same time the decrease in the hog supply over the world was 32,425,000 as shown by the comparative pre-war estimates and war-time figures.

The nations of the world are still slaughtering their livestock, particularly their hogs. They are depending on America to ship meat, for that takes less ship space than does the fodder and feed with which to develop the animals. The result is that, while America is not rapidly increasing its herds and flocks, the world supply is being swiftly reduced. A large Chicago commission house says:

"The price of hog products today is proof that we are slaughtering, consuming at home and exporting more hog products than we are producing. It is interesting to note that we have increased our consumption despite high prices."

There is only one answer to the problems of the hog industry—that is that American farmers must raise more hogs. They will reap, under the government rules, an excellent harvest of hard cash from their sales. Utah farmers should be among the first to develop the industry and assure themselves of this benefit.

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REDUCING LOSSES FROM HOG CHOLERA

What Is Needed for Control of Hog Cholera.

A farming community that knows hog cholera, the ways in which it is spread, and the best methods of combating it.

A community so organized that every farmer will be ready to help his neighbors by informing them and the proper State officials of the existence of cholera whenever this may come to his notice, and where every farmer knows where to get good serum quickly.

Readily available serum at reasonable prices.

A sufficient number of skilled men to administer the serum.

Although hog cholera can not be completely eradicated from the United States under present conditions, losses from the disease can be materially reduced by education and organization of hog raisers in the application of proper sanitary measures and the proper treatment of hogs with anti-hog-cholera serum. This has been shown by the results obtained by the Bureau of Animal Industry of the United States Department of Agriculture, in experimental work in hog-cholera control carried on in a number of counties during the past four years. The work and its results are described in Department Bulletin 584, "The Control of Hog Cholera," recently published by the department.

Hog Raising Thrives Under Control

One of the important results, according to the bulletin, is the fact that the work while effective in reducing the disease, was not repressive while in progress on the hog-raising industry. On the contrary the industry thrived in the experimental counties to a greater degree than in adjacent counties in which no control work was under way.

Actual statistics were taken in the experiments counties and careful estimates were made in the adjacent counties. These show that in one group of three counties where the control work has been under way four years, the percentage of loss from hog cholera has remained constantly from ¼ to 2-5 the percentage of loss in the 15 surrounding counties. In another group of experimental counties the average percentage of loss as compared with that in ⅛ surrounding counties was reduced from approximately 9-10 in 1913 to less than 1-3 in 1914 and to about 1-16 in 1915.

Community Needs in Combating Cholera.

Specialists who have supervised the control work of the department reach the conclusion that while the eradication of hog cholera can not be expected for a considerable time, the material reduction by the use of serum of the enormous losses which annually are caused by the disease, is entirely practicable. The essentials for success in combating the disease, they point out, are interest on the part of hog raisers and knowledge of the disease; organization which will facilitate exchange of information as to outbreaks, and secure assistence; serum at reasonable prices and easy of access; and the available service in the community of persons skilled in administrating serum.

—o—

The nation's brood sows are needed in breeding pens far more than in pork barrels.

RATS AND MICE—THE WORLD'S WORST PESTS

Rats and mice are among the worst animal pests in the world.

From their home among filth they visit dwellings and storerooms to pollute and destroy human food.

The rat carries bubonic plague and many other diseases fatal to man and has no doubt been responsible for more untimely deaths among human beings than all wars of history.

In the United States rats and mice destroy each year in homes, in factories, stores, and warehouses, in cars and on ships, crops, poultry, and other property valued at more than $200,-000,000—an amount equivalent to the gross earnings of an army of 200,000 men.

Grain, eaten and wasted by rats and mice on many farms, would pay all the farmer's taxes.

Rats and mice breed from 6 to 10 times a year, producing their destructive kind at an alarmnig rate.

They are parasites without a single redeeming characteristic.

How States, Communities and Individuals Can Help Eliminate Rats and Mice.—Measures Suggested by Biologists of U. S. Department of Agriculture.

By requiring that all new buildings, wharves, and other structures be rat proof, the existing buildings of rat-proof construction be further protected by having basement windows and drains covered with screens, gratings, etc.; and that existing buildings that are not rat proof be made so by remodelling.

By constructing sewers and drains so that they will not provide entrance and retreat for rats.

By insisting on greater cleanliness about markets, stores, and generally throughout cities, villages, and the country districts.

By threshing and marketing grain early so that stacks will not furnish harboring places and food for rats.

By removing piles of straw, trash, and lumber which harbor rats in fields and vacant lots.

By protecting the hawks, owls, and other natural enemies of rats which are not so destructive to poultry as rats themselves.

By keeping well-trained rat dogs on farms and about city warehouses.

By keeping provisions which rats and mice will attack, in rat proof and mouse proof containers.

By destroying rats and mice systematically by poisoning, trapping, and by organized systematic hunts.

By arousing public opinion to the realization of the importance of exterminating rats and mice.

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam

Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Galls, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Louisiana. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. One bottle of Caustic Balsam will last a lifetime. Price $1.50 per bottle, delivered, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc., mailing
The Lawrence-Williams Co., Cleveland, O.

EAR TAGS PERFECT
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address, Numbers if Desired
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

ABORTION IN CATTLE
PREVENTED AND CURED PERMANENTLY
YOUR COWS MADE PROMPT, REGULAR BREEDERS BY
STERILOID

STOP LOSING CALVES
TREATMENT: If STERILOID is used at the first sign of abortion the cow will go her full time and have a healthy calf. If your cows or heifers do not come in season, or fail to get with calf, use STERILOID. Cows get with calf after only one treatment. Write today for FREE BOOK. It explains the causes and symptoms of Abortion and tells how to cure Abortion, and make your cows regular, healthy breeders with STERILOID. Also contains letters from breeders who have used STERILOID successfully.
GUARANTEE: We will refund money in every case when STERILOID FAILS to make good. PRICE $1.00. Mailed Postpaid, in plain wrapper.
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the largest house in the World dealing exclusively in NORTH AMERICAN RAW FURS, a reliable—responsible—safe Fur House with an unblemished reputation existing for "more than a third of a century," a long successful record of sending Fur Shippers prompt, SATISFACTORY AND PROFITABLE returns. Write for "The Shubert Shipper," the only reliable, accurate market report and price list of its kind published.
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WOLVES—the Highest Prices Paid in History.
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Send us your hides or furs, and we'll tan and make Fur Coats, Robes, Mits, etc., of them
ALL WORK GUARANTEED
All kinds of repair work and taxidermy. Also tanning harness and lace. The only Tannery in the Kansas City's.
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NORTHWESTERN HIDE & FUR CO.
Minneapolis, Minn. Est. 1890.

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Get more cash for your furs by shipping to Hill Bros. Fur Co.—"Fastest Growing Fur House in America".
We Charge No Commission
Try us—let us prove our claims.
FREE For Price List, Trappers' Guide, Game Laws, Catalogue and particulars of our $250.00 Cash Prizes to trappers only. Write for them TODAY.
HILL BROS. FUR CO. 396 N. MAIN ST. ST. LOUIS, MO.

SELDOM SEE
a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.
ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.
will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. $2 per bottle delivered. Describe your case for special instructions and Book 8 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price $1 and $2 a bottle at druggists or delivered. Made in the U. S. A. by
W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

THE DAY OF THE TRACTOR IS HERE

Alfred Jones.

"Every dog has its day" is an old but true adage. Oxen had their day, and then were replaced by faster, more efficient, farm power—the horse. Now, however, the call for even more efficient farm power, to cope with an immensely increased demand for food stuffs, due in large measure to war conditions, brings the tractor to the front with a rush, on an errand not only of mercy for the horse, but also to bring even greater production than the over-worked horse is capable of producing.

The farmer who fails to consider and understand the trend of the times in this respect will no doubt soon be classed with the farmer of by-gone days, whose sentiment in regard to the old ox team overcame his better judgment in replacing it with a span of good horses.

When our president told us that the result of the war might depend largely upon the ability of the farmer to produce more crops; and that every means at the command of the farmer should be employed to increase production, it seems as if he said almost plainer than words "get a tractor."

Quite naturally the farmer of eighty acres or more is puzzled to know how the tractor can be employed profitably by him. He knows that unless the tractor will be a profitable investment that he can do more for his country by not buying it than he can with its help.

This is a point we want to give special attention, because the vast majority of American farmers operate average size farms and talk which refers to tractors on ranches of 1,000 acre farms is of no benefit to them. However, there are now on the market, tractors which are built especially for the small farmer. These tractors are light in weight and of simple design so that one man can operate them as easy as a team.

These tractors make their strongest appeal because of the fact that they do 75 per cent to even 100 per cent of the farm work that horses formerly did, thus permitting you to eliminate a large per cent of your horses. When you can get a tractor like this—one that cuts down feeding expense 75 per cent to 100 per cent—one that eats only when at work—that starts with you on the first furrow in the spring and plows, discs, harrows, plants cultivates, runs the mower, and binder and fills your silo—you've got a tractor that is as much more efficient than the horse as the modern loom is more efficient than the old spinning wheel.

If you are a small farmer, keep your eyes open for the tractor that meets the requirements of your farm—note how many horses the tractor you propose to buy will eliminate—note how many of the things it will do that horses did before.

If you get the tractor that exactly meets your needs you'll agree that the tractor is now going to have its "day" and that when it does have its day, farming will not only hold out fewer drawbacks and drudgeries, but will be far more profitable and pleasurable.

SAVE THE MACHINERY

The loss in farm machinery by exposure to weather has always been tremendous. Unless unusual precautions are taken this loss will be greatly increased this year. All kinds of farm machinery have increased in price but it takes no more exposure to put a high priced implement out of commission than it does a similar implement that cost much less. The greater the investment the greater the time and expense that can profitably be spent in protecting it. A man can probably spend more to protect a machine that costs $175 than he could have spent to protect the same machine when he could buy it for $75.

Furthermore, the protection of farm machinery is of utmost importance this year for a reason that it has never been necessary to consider. Heretofore a man could always purchase a new machine as soon as his old one failed to work, provided he had the price. Whether or not it will be possible next year for all to purchase farm implements and machines, who desire to do so, is a question. Manufacturers are experiencing great difficulty in obtaining material and there is great possibility that they will not be able to meet the demand which is likely to be considerably greater than normal. Every machine or implement that with good care will render service for another season should receive the best of care.

To put machines under cover as soon as the season's work with them is over is one of the most effective means for lengthening their lives. Each additional hour of use obtained from a machine is an equivalent to reducing the price of that machine.

Other protective measures which are worthy of special attention at this time are to go over every machine carefully, tightening the bolts, replacing broken parts, and oiling all parts that are likely to rust. Paint is also an economical preserver of farm machinery.

REPAIR WORN MACHINERY

Scarcity of Implements Must Be Met by Putting Old Ones into Shape for Work.

The great outcry for farm production and the scarcity of machinery points to the need of some way to repair a great many implements that are now useless largely because of the neglect with which they have been treated, says the United States Department of Agriculture, which adds that the machinery manufacturers and their local sales agents should help to perform this repair service.

Throughout the country there are thousands of binders, mowers, and other farm machines rusting in the fence corners, and many of these might be made available for further valuable service. The manufacturers of farm machinery are admittedly unable to furnish all the new machines required and are paying for full-page advertisements to influence governmental authorities to insure them necessary raw materials and transportation in competition with the demand for machines of war.

The railroads of the country, according to one of their officials, are being compelled in the present emergency to rescue practically every scrap locomotive from the old iron graveyards and rebuild them for active service. A similar plan should be adopted, says the department, for the reclamation of this cast-off farm equipment through the agency of central repair shops where the work could be done. Many of the machines might be made available for further service with repairs of comparatively small cost.

Added to the almost sinful carelessness of some farmers there has been the attitude on the part of farm machinery manufacturers in years past to favor the abandonment of worn and disabled machines in order to sell new ones; but now the time has arrived when it is difficult to supply the market with the necessary new machinery. The department suggests that representatives of the manufacturers, on the one hand, and of the farmers—such as farm bureau agents or county agents—on the other hand, should get together to establish the necessary farm machinery repair stations in convenient localities.

GET THE SELLING HABIT

Farming is a business as well as a science. The business of the farmer is to produce things and sell them for profit. This is also the business of all the manufacturing plants throughout the world. A farmer is not only a business man, but also a manufacturer, and might be considered a merchant, since his income is dependent on the products that he sells for profit. If nothing is sold from the farm, naturally there will be no income, hence the marketing end of the game is fully as important, and in many cases even more so, than the producing end.

It has been my observation for many years that the progressive farmer, the one that forges ahead—has no mortgages, but enjoys a good bank account—is the one who has always something to sell. He manages to have a load of cattle, hogs, grain, sheep, some wool or potatoes, or perhaps some fruit or dairy products to market every month, or even better, something every week in the year which brings in a constant income. Of course, this kind of farmer is familiar with the marketing game and knows where and when to dispose of his products at the best time when they will return the largest profit.

With the available cash he is constantly making improvements both on the farm and in the house, and is materially increasing the value of his place. This kind of farmer is not worrying about farm credits or where he can raise a mortgage at a low rate of interest, because he has cash on hand to use when needed. If he hears of some live stock in the neighborhood that is to be sold below their actual value, he has the cash with which to buy them the grain and forage to feed, with the result that he realizes a handsome profit when the stock is ready to market.—Western Farm Life.

BETTER THAN MEDICINE

Folks with the price in their pockets and a fashionable disease somewhere about them spend small-sized fortunes traveling to Europe, Hot Springs, French Lick or West Baden in search of the water cure. For centuries good water and plenty of it has been recognized as one of the best medicines within the reach of man.

The reason why those living in our own blessed portion of the universe are so healthy is no doubt due to the excellence of the water which underlies our limestone soils. What, under normal conditions, however, should be regarded as a blessing, can very easily with a little neglect become a curse. The very waters which come to our wells and springs from long distances underground may carry with them the deadly typhoid and other ills almost as deadly.

Every precaution should be taken to see that the source of water supply of the family is not only pure but protected in every way from contamination. To many, any clear, cold water is regarded as pure, even though it may have an odor which to the stranger is particularly offensive. Poor platforms and well curbs, bad locations and lack of common-sense precautions in the location of outhouses are more to blame for unsanitary drinking water than anything else.

Frequently an entire family can be found, every member of which seems to be in poor health, due to some mysterious cause. Rarely is contaminated water blamed for the trouble, yet the chances are that were pure water provided many of these ills would cease.

Now that the use of concrete is so fully understood there is practically no excuse for the unsanitary well curb. Not only can water-tight wells be built but collars of concrete so planned as to make absolutely impossible the entrance of a single drop of surface water.

Locking the stable door after the horse has disappeared is about as wise as cleaning out the well and repairing a death or two from typhoid or a long illness due to some mysterious stomach trouble.

Fortunately good, pure water is very easily secured on most farms. No expense should be spared in protecting it, for it is much cheaper than doctor's bills.

One way to increase poultry production is to banish the chicken mites from infested hen roosts.

Help Your Boy

It is every father's business to advise and help his boy.

To guide and start him out right in life.

Can you help him in any greater way than to find the work for which he is best fitted?

To do so means his success.

Get one of Dr. F. S. Harris' new books.

The Young Man and His Vocation

It explains the various sides of every kind of work—tells the preparation for each, the opportunities of each and the pay from each.

It points out, suggests, encourages.

It will help you to help your boy. It will help your boy to choose for himself.

Send $1.25 to

Book Department

THE UTAH FARMER

Lehi, Utah

CALIFORNIA EXCURSIONS

ACCOUNT "HOME VISITORS"

TO

Los Angeles
San Diego
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San Francisco

GREATLY REDUCED RATES

SALE DATES

Nov. 24-27

SALE DATES

Dec. 20-22
24 and 29th.

Tickets sold in November Return Limit Jan. 31, 1918

Tickets sold in December Return Limit Feb. 28, 1918

For tickets and further particulars see Agents, Salt Lake Route or address

Wm. Warner, A. G. P. A., Salt Lake City, Utah.

WATCHING THE WEATHER —FOR DRY-FARMING

(Continued from page 1)

The autumns of 1891, 1902, 1906, and 1915, were dry though not quite as dry as the autumn of 1917. Does the dry farmer remember how his grain fared in those years? has he a record of his plantings, cultivations and harvestings? very similar weather conditions are ushering in the present winter and a record of past experiences would help in the present emergency.

The weather statistics should be watched by the dry farmer for the same reason that he watches his bank account. The published weather data for the state show the accumulations of temperature and precipitation, the excesses or surpluses above normal, or the deficiencies, as the case may be, month by month for the state, and day by day for Salt Lake City. And just as surely as a growing bank account brings its blessing and advantage, so will a winter's excesses of precipitation and temperature; and as the bank account must be known in its units of dollars and cents rather than in such general terms as "much" or "little", so must the weather be known in its units of inches and degrees and its relation to usual needs.

PUTTING SHOTS AT THE KAISER

By E. E. Richards, President American Poultry Association.

We are going to win this war. It is going to cost our treasury billions of dollars besides the lives of hundreds of thousands of our bright young manhood, but we shall win. To win this war the quickest, and with the least loss of lives we must provide the food, for as Napoleon said: "An army marches on its stomach." This means that an army must be well provisioned to reach its greatest efficiency. In the war times that are passed, an army could largely subsist upon the country through which it passed, but there is no living upon the country through which modern armies are passing. There is no living upon the Greek or Balkan states, nor on Salonica, so that as Lloyd George said some time ago, the food supply is one of this war's greatest necessities. The greater part of the food supply must come from the United States not only for our 1,760,000 and more boys in the army and navy, but we shall have to feed our people at home, and must also supply the Allies who are fighting this world's greatest battles.

Mr. Herbert Hoover, the nation's food administrator, asks for more poultry, chickens, turkeys, ducks, and geese. Mr. Hoover pleads as follows:

Important Message to Every Poulterer from Herbert Hoover, Head of the Food Administration.

To the American Poultry Association and Producers of Poultry and Eggs in the United States:

We are short of red meat. Our soldiers and our Allies require more than ever before. We are advocating in every household, every hotel and restaurant in this country the substitution of poultry for red meat. Increased production of poultry can be effected much faster than beef, pork, and mutton. While we want increase in all the latter, we must have a quick response in poultry and poultry products. There is a great waste of poultry feeds from every household and every farm. It requires little labor. Cannot the poultry raisers of the country help us by providing the increased supply we need?

Herbert Hoover.

What can you do to help in this worldwide meat emergency?

"Every farmer can raise more and better poultry and do it far more profitably by disposing of all surplus males, by keeping only the yearling hens, and the earliest and best matured pullets, thus keeping no deadheads or "slackers" to consume what should go to the profitable producers. It is a crime to dispose of a laying hen or a pullet that is just about to lay. Keep the hen house neat and clean. Repair the roof, the windows, and stop any direct drafts that are possible by knot holes or cracks. Too much glass and not enough open front is bad. Write your state experiment station for needed information. Every state in the Union except Florida and Wyoming, maintain poultry departments which are pleased to aid the home folks with their poultry problems.

Poultry is profitable. No source of meat supply is as rapid or as cheap. Every pound of poultry produced will help in sending a pound of meat across to the boys that are fighting your battles. Every farm should have a carefully culled flock of not less than two hundred fowls. The larger the farm, the larger the flock, and such a flock should be maintained largely from economical reasons. Poultry will pick up ninety per cent of its living from scattered and wasted grains. They act as scavengers in consuming a large part of what would otherwise be lost. Poultry will prove valuable in eating obnoxious bugs, grasshoppers, worms and insect pests, that would otherwise destroy food that is valuable. To the dweller in a village, town or city, a well kept flock of a dozen or twenty-five good laying hens will prove profitable. They can be kept from the lawn, garden, kitchen and table offal, all of which makes the choicest kind of poultry feed with but a small addition of grain.

During this next year every effort should be made to raise and consume every pound of poultry flesh possible. It is one of the easiest and quickest ways of helping to increase food production, and that is what every red-blooded American must do to help his country during the period of the war. Every pound of meat produced will help put a bullet at the kaiser. Do your bit.

BEFORE THE H. C. L.

"My wife," said Mr. Clarke, "sent two dollars in answer to an advertisement of a sure method of getting rid of superfluous fat."

"And what did she get for the money? Was the information what she wanted?" asked Mr. Simmons.

"Well, she got a reply telling her to sell it to the soap man."

NO PLAY ABOUT THAT

"Oh, Willie, Willie!" exclaimed the mother, shocked and grieved; "how often have I told you not to play with that naughty Johnson boy!"

Willie, who was in a regrettable state of disorder, with a badly bruised face, looked at his mother in utter disgust.

"Maw," he said, "do I look as though I had been playin' with anybody?"

Nearly eight per cent of the eggs marketed in the United States are lost through spoilage or breakage. Much of this loss could be prevented through community egg circles.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF Y OU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta Irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
604 Dooly Building,
Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful be , also the grand prize contest,

H. A. PINEGAR
Wellington Utah

IN DANGER

"Jedge," said the colored witness, "I wish you'd please make that lawyer stop pesterin' me."

"But he has a right to question you."

"Dat may be, jedge, but I'se got a rattlin' in my head, en ef he worry me much more, fust t'ing you know I'll up and tell de truth 'bout dis matter!"

RELIABLE FARM BARGAINS

WE WILL ACCEPT LIBERTY BONDS ON THESE FARMS.

In Cache Valley we have one of the best ranches in that part of the state, containing 244 acres. This ranch is under high state of cultivation and has been farmed for sixty years. There is a good house containing six rooms, large barn that will hold ten head of stock, cow sheds, granary, chicken houses, hog pens; in fact, all buildings necessary on a farm and ranch. There is a first-class spring of water piped into the house and to the barn. All kinds of plows, harrows, grain drills, disc harrows, threshing machine, hay derricks and other tools too numerous to mention; twenty-five head of cows, twelve head of first-class horses. This property is on the main county road and right near one of the best towns in Cache Valley, and has an independent water right maintenance absolutely free. This farm is planted to grain, alfalfa, timothy and clover, two acres of orchard, about one-eighth of an acre in small fruit. The farm is particularly adapted for stock raising, dairying and dry farming. However, there is a lot of first-class sugar beet land on this farm. We are offering this farm at the rediculously low price of $85.50 per acre. In addition to the 244 acres there is eighty acres of pasture land adjoining that will be thrown in with this sale free of cost to the purchaser.

Just below 15th South, on the five-cent car line, we have one acre with a new two-room house for $800.00.

In the Bear River valley we have a first-class farm containing 185 acres. This farm is on the main road and right near the town of Tremonton. It is under a high state of cultivation; has a first-class modern house, eight rooms, hot water heat, good barns, granaries and other outbuildings, two acres planted to orchard, fenced with a woven wire fence, large shade trees and lawn around the place, water piped to the house and barn; in fact, every modern convenience necessary on a farm. This property has been under a high state of cultvialton for a good many years and can be had for $150 per acre, on terms. Will consider Salt Lake City property in part exchange.

$115.00 per acre will purchase a forty-acre tract right near the town of Tremonton. This farm has been under cultivation for a good many years and at the present time, one of the best buys that we have ever offered in that valley. This land is situated in the heart of the best farming district and is under a high state of cultivation. This property can be had at one-fourth down and ten years on the balance, six per cent interest.

KIMBALL & RICHARDS
"Land Merchants."
54 Main Street,
Salt Lake City, Utah.
Phone Wasatch 963.

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

FEDERAL LAND COMPANY
Ogden Utah

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

STANDARD SEWING MACHINES

Sold on easy payments by mail. We repair any make machine.

GUARANTEED DROP HEAD MACHINES

$8.00 and up

All standard makes handled.

Walker Electric Supply Co.

159 So. State St.
Salt Lake City, Utah.

BUY FURNITURE

SAVE MONEY
WE PAY THE FREIGHT
Write us for prices.

Axelrad Furniture Co.

42 W Broadway St.
Salt Lake City, Utah.

Save Grain For Human Food

Feed your livestock

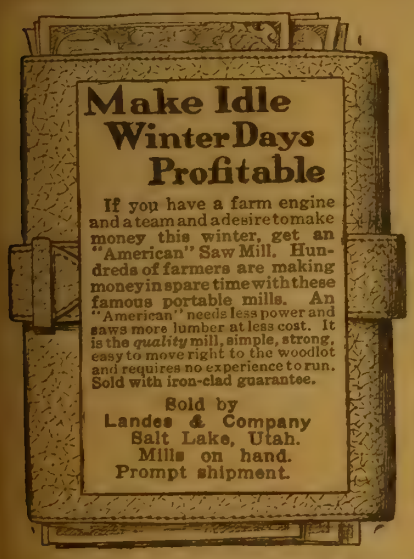
COTTONSEED CAKE AND SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,
Salt Lake City, Utah.



Better anticipate your requirments now.

Cotton Seed Cake—Corn Sunripe Stock Food—Hay

BROWN BROKERAGE CO.
Ogden, Utah.

Shipping Utah Wheat to Primary Interior Markets

(Continued from page 1)

ation of $2.20 for No. 1 Northern Spring wheat at Chicago, or its equivalent:

Prices at Interior Primary Market

No. 1 Hard Winter, No. 1 Red Winter, basic grades, equivalent of No. 1 Northern Spring.

		Per bushel
No 1	Dark Hard Winter	$2.24
No. 1	Hard Winter, basic	2.20
No. 1	Red Winter, basic	2.20
No. 1	Yellow Hard Winter	2.16
No. 1	Soft Red Winter	2.18
No. 1	Dark Northern Spring	2.24
No. 1	Northern Spring, basic	2.20
No. 1	Red Spring	2.18
No. 1	Humpback	2.10
No. 1	Amber Durum	2.24
No. 1	Red Walla	2.13
No. 1	Durum, basic	2.20
No. 1	Red Durum	2.13
No. 1	Hard White, basic	2.20
No. 1	Soft White	2.18
No. 2	of grade 3 cents less	
No. 3	of grade 6 cents less	

Wheat below No. 3 grade will be bought on sample.

Relative Market Basis.

	Per bushel
Kansas City, 5 cents less or	$2.15
Omaha, 5 cents less or	2.15
Duluth, 3 cents less or	2.17
Minneapolis, 3 cents less or	2.17
St. Louis, 2 cents less or	2.18
Chicago, basis	2.20
New Orleans, basis	2.20
Galveston, basis	2.20
Buffalo, 5 cents more or	2.25
Baltimore, 9 cents more or	2.29
Philadelphia, 9 cents more or	2.29
New York, 10 cents more	2.30
Portland, 15 cents less or	2.05
Seattle, 15 cents less or	2.05
Tacoma, 15 cents less	2.05
San Francisco, 10 cents less	2.10
Los Angeles, 10 cents less or	2.10

Freight Rates on Wheat from Various Stations on the Salt Lake Route to the Los Angeles and Chicago Markets.—Carlot Basis.

Station	Freight rate per 100 lbs. Los Angeles	Chicago	Prices received per bushel for No. 1 Northern or its equivalent at: Los Angeles	Chicago
Modena	$ .30	$ .77	$1.92	$1.74
Lund	.30	.77	1.92	1.74
Milford	.30	.72	1.92	1.77
Oasis	.30	.67	1.92	1.80
Delta	.30	.67	1.92	1.80
Lynndyl	.30	.67	1.92	1.80
Tintic	.30	.60	1.92	1.84
Stockton	.32	.60	1.91	1.84
Tooele Junc.	.33	.59	1.90	1.85
Nephi	.30	.57	1.92	1.86
Payson	.37	.52	1.88	1.89
Provo	.40	.52	1.86	1.89
Lehi	.40	.52	1.86	1.89
Murray	.40	.52	1.86	1.89
Salt Lake	.40	.52	1.86	1.89
Eureka	.34	.52	1.90	1.89
Mammoth	.34	.52	1.90	1.89
Rush Valley	.31	.52	1.91	1.89
Fairfield	.33	.52	1.90	1.89
Cedar Fort	.36	.52	1.88	1.89

The Union Pacific Railroad System makes a rate of 52 cents per 100 pounds wheat for a car of 50,000 pounds minimum weight and a rate of 50 cents per 100 pounds wheat for a car 80,0000 pounds minimum.

OREGON SHORT LINE R. R.

	Los Angeles Freight Rate	Per Bu.	Chicago Freight Rate	Per Bu.	Portland Freight Rate	Per Bu.	San Francisco Freight Rate	Per Bu.
Lewiston	$ .40	$1.86	$ .52	$1.89	$ .40	$1.81	$ .39	$1.87
Logan	.40	1.86	.52	1.89	.40	1.81	.38	1.87
Brigham	.40	1.86	.52	1.89	.40	1.81	.35	1.89
Ogden	.40	1.86	.52	1.89	.40	1.81	.35	1.89
Fielding	.40	1.86	.52	1.89	.40	1.81	.35	1.89
Tremonton	.40	1.86	.52	1.89	.40	1.81	.35	1.89
Garland	.40	1.86	.52	1.89	.40	1.81	.35	1.89
Cache Junction	.40	1.86	.52	1.89	.40	1.81	.38	1.87
Cornish	.40	1.86	.52	1.89	.40	1.81	.38	1.87
Salt Lake to Ogden	.40	1.86	.52	1.89	.40	1.81	.35	1.89

DENVER & RIO GRANDE RAILROAD

Station	Freight rate per 100 lbs. San Francisco	Los Angeles	Value of wheat per bu. at San Francisco	Los Angeles
Provo	$ .35	$ .40	$1.89	$1.86
Fairview	.47½	.47½	1.81½	1.81½
Ephraim	.47½	.47½	1.81½	1.81½
Manti	.47½	.47½	1.81½	1.81½
Salina	.49	.49	1.81	1.81
Richfield	.52½	.52½	1.78½	1.78½
Marysvale	.52½	.52½	1.78½	1.78½
Price	.49	.49	1.81	1.81
Green River	.52½	.52½	1.78½	1.78½

SOUTHERN PACIFIC COMPANY

Station	Freight rate per 100 lbs. Chicago	San Francisco	Value of wheat per bu. at Chicago	San-Francisco
Corrine	$ .78	$ .35	$1.73	$1.89
Kelton	.81	.35	1.71	1.89
Peplin	.95	.35	1.63	1.89
Matlin	.95	.35	1.63	1.89
Terrace	.95	.35	1.63	1.89
Umbria Junction	.95	.35	1.63	1.89
Lucin	.95	.35	1.63	1.89
Beppo	.95	.35	1.63	1.89

Minimum Weight 30,000 pounds.

WESTERN PACIFIC COMPANY

Station	Freight rate per 100 lbs. Chicago	San Francisco	Value of wheat per bu. at Chicago	San-Francisco
Wendover	$ .62½	$ .35	$1.82½	$1.89

Minimum weight 50,000 pounds.

MEAT ANIMALS GAIN IN PRICE AT THE FARM

The prices received by producers for cattle, sheep, and hogs, September 15, and chickens, October 1, have gained 52.7 per cent in the general average from 1916 to 1917, according to the latest report of the United States Department of Agriculture. The advance for beef cattle per 100 pounds, live weight, was from $6.55 to $8.40, or 28 per cent; for veal calves per 100 pounds, from $8.77 to $11.08, or 26 per cent; sheep per 100 pounds, from $6.25 to $10.05, or 61 per cent; lambs per 100 pounds, from $8.22 to $13.06, or 59 per cent; hogs per 100 pounds, from $9.22 to $15.69, or 70 per cent, and chickens, from 14.3 to 18.1 cents per pound, or 27 per cent. Sheep, lambs, and hogs have far exceeded beef cattle, veal calves, and chickens in the upward price movement at the point of production.

The highest price at the farm per 100 lbs., live weight reached during the year under review, was $8.70 for beef cattle in May, $11.08 for veal calves in last September, $10.15 for sheep in May, $13.06 for lambs in last September, $15.69 for hogs in last September, and 18.1 cents per pound for chickens October 1 of this year. The latest farm price reported is the highest one of the year for veal calves, lambs, hogs, and chickens; the May price was the highest for beef cattle and sheep.

TWO MILES TOO MUCH

A German farmer was in search of a horse.

"I've got just the horse for you," said the liveryman. "He's five years old, sound as a dollar and goes ten miles without stopping."

The German threw his hands skyward. "Not for me," he said, "not for me. I live eight miles from town, und mit dot horse I hat to valk back two miles.

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.

Virginia, Idaho.
"Home of the Champion Durocs"

CHOICE REGISTERED DUROC JERSEY PIGS

Now ready FOR SALE. From Richards' "Pathfinder" and "Defender," and prize-winning sows. My junior yearling boar, from "Defender," won [illegible] at recent fairs at Boise and Salt Lake. Prices very reasonable.

V. R. FISHER

Oxford Idaho

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction, to others we desire to make you acquaintance. See these animals before buying elsewhere

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.

Mailing bags for samples sent free.

THE MANGELSDORF SEED CO.
Atchison, Kansas.

FOR SALE

Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.

H. E. WALKER
Box 964, Salt Lake City, Utah.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

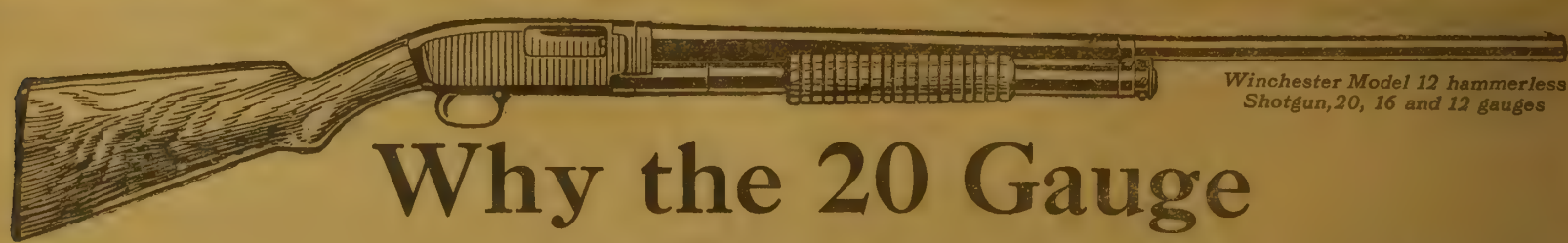
WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.



Winchester Model 12 hammerless Shotgun, 20, 16 and 12 gauges

Why the 20 Gauge is Gaining in Popularity

Back in the '90s the 10 gauge was the weapon that had the call among American sportsmen.

But as the game became scarcer, there came a better sense of sportsmanship. The 10 gauge yielded to the 12 gauge.

Today, hunters who are in it for "Sport's Sake" are taking to the light 20 and 16 gauges—the true sportman's guns.

When you carry a 20 gauge, you're *playing the game* and you *earn* every bird you bring down.

Quicker action and better pattern with the 20 gauge

In the hands of a good shot, the 20 gauge has proved almost as effective a field gun as the 12 gauge. This is because in the first place, being lighter, it permits of quicker handling; you get onto your game faster.

Then, too, if you're quick, most of your shots at quail, snipe and prairie chicken will be at from 15 to 25 yards; at these distances the properly bored 20 gauge makes its best pattern, while the 12 gauge does not open up so as to give the shooter the full benefit of its larger load of shot until close to 40 yards.

The 20 gauge then can give you as good a bag as a 12 gauge if you handle it fast and get onto your game quickly. It's a sportier gun to work with.

A gun that few sportsmen can resist

The nicely balanced Model 12, Winchester 20 gauge with its slim, graceful barrel is a beautiful weapon and has a fascination about it few sportsmen can resist.

Quick feeder, sure ejector. Throws empty shell to the side out of your way.

Dense, even, hard hitting, quick opening pattern of the Winchester 20 gauge.

It works smoothly in whatever position it is held.

A man who has used this Model 12, 20 gauge Winchester; or its duplicate in the Model 97, 16 gauge—for those whose prefer a hammer action gun—for a few days of shooting, finds it hard to go back to his heavier 12 gauge.

The barrel *is* the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard of quality of the barrels on the highest or lowest priced Winchester guns. With Winchester the barrel *is* the gun and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel.

The Winchester barrel

The barrels of the Winchester Models 12 and 97 have been scientifically bored to micrometer measurements for the pattern they are meant to make. The degree of choke exactly offsets the tendency of the shot to spread. Until the pattern proves up to Winchester standard, the guns cannot leave the factory.

The Nickel Steel construction preserves the original accuracy forever. The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that, with proper care, will last a lifetime.

What (P W) means

This mark on the barrel means *Viewed and Proved Winchester.* This stamp stands for Winchester's guarantee of quality, with fifty years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times for smooth action and accuracy, and with excess loads for strength. At every stage of Winchester manufacture machine production is supplemented by human craftsmanship. It is a *test and adjustment process.*

It is this care in manufacturing that has produced in these two light gauge models, guns that have won the admiration of all true sportsmen who follow *Sport for Sport's Sake.*

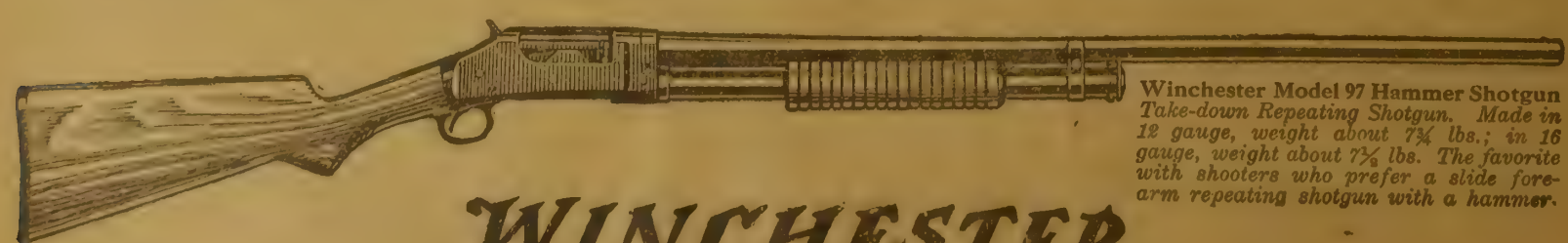
Write for details of Winchester shotguns, rifles and ammunition

The Winchester catalog is an encyclopedia on shotguns, rifles and ammunition. Every hunter should have one. It gives detailed specifications of the Model 12 and describes at length the principles on which every one of the world-famous Winchester rifles and shotguns is built. Write today. We will mail you a copy free, postpaid.

WINCHESTER REPEATING ARMS CO.
Dept. W D-4 New Haven, Conn.

Home Defense Leagues!

We have a Winchester for County and Home Defense Leagues which is meeting with universal approval. Many Home Defense Leagues throughout the United States have already been equipped with this gun.



Winchester Model 97 Hammer Shotgun
Take-down Repeating Shotgun. Made in 12 gauge, weight about 7¾ lbs.; in 16 gauge, weight about 7½ lbs. The favorite with shooters who prefer a slide forearm repeating shotgun with a hammer.

WINCHESTER

World Standard Guns and Ammunition

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 17 NOVEMBER 24, 1917

Sheep Raising Can Be Made Profitable

Henry Peterson, Utah County.

THE OPPORTUNITY TO GRAZE SHEEP ON FOREST RESERVES IS LIMITED TO ONLY A CERTAIN NUMBER, AND INCREASED PRODUCTION MUST COME UPON THE FARM.

A flock of sheep when judiciously managed usually proves one of the most profitable variety of livestock on the farm.

Our sheep have been diminishing steadily since the war began. We produced in 1916 only 35 per cent of the wool that we used. In providing uniforms for millions and millions of men the world is using more wool than ever before in its history. We have never seen such a price of wool as it exists today. There is practically famine in wool at the present moment. There is every reason in outlook and in profit for the increase of our sheep.

Where is this increase to come from? On the small farms where 5 to 25 sheep can be feed upon the feed that would otherwise go to waste. Think what it would mean if many of our farmers where to do this. We would have the greatest lot of sheep in the world. We need them and the prospects are that the price on wool and mutton will not be any lower than the present prices for some time. Our government is trying to impress us with this fact, that we need more livestock sheep, hogs and cattle.

One man who has had considerable experience with sheep reecntly said: "that while farm-raised sheep have often not been profitable, this has usually been because of lack of proper attenion and management. Variations in price of wool and mutton have stood in the way of such general interest in sheep as would cause them to be regarded as highly as they should be in the future. Ranges all over the world are now carrying about as many sheep as they can support under a strict range system, and an increase in the production of sheep products must come mainly from farms. Here, then, is the farmer's opportunity to take advantage of the increased consumption of these products."

While mutton can be produced at low cost and there is a growing demand for it, difficulty in selling may be experienced in sections where the amount of livestock produced has not been sufficient to make it worth while for regular buyers to operate.

If there is a co-operative spirit among the farmers so that a sufficient number of neighbors combine together to ship there livestock, there is a possibility that buyers will visit them and make purchases.

In counties where economy in farm management has been studied a long time, the sheep is considered to be necessary in utilizing vegetation on such waste lands as are not wet or marshy. But the sheep can hold its place on high-priced land as a meat producer alone. Compared with larger animals it has some important advantages. First, the lambs mature very rapidly, being marketable at four months of age or later, according to breeding and feeding. This is an economy because a large proportion of the total feed goes into increase of weight than in slower growing animals.

Second, the sheep consumes a greater variety of plants than do other animals. Many of such plants are detrimental to pastures and would otherwise require hand labor to hold them in check. Third, grain waste in harvesting can be entirely recovered by sheep. These facts prompt some farmers to claim that the summer food of sheep costs nothing, because what they consume would otherwise bring no returns.

Compared with hogs the sheep has an advantage in the wider variety of materials it consumes. Being a ruminant it makes its gain with a minimum of grain and expensive concentrates.

If there ever was a time when it is not only profitable but patriotic to produce more livestock it is right now. If one lacks experience he must be careful and profit by the other fellows loss.

Like the hog, the sheep has its peculiar ailments which sometimes result in loss as well as discouragement.

(Continued on page 13)

DAIRYING

GIVING THE FALL CALVES A GOOD START

John Underwood.

Most of us have to live some time before we can appreciate the worth of "a good start." When we were boys we were not as careful about the way in which we began an important piece of work as we learned to be later in life. We have all heard that "a thing well begun is half done," but I fear that few of us learn even in later life to rightly value the initial steps in any undertaking. It is probable that the interest in dairying was never so great as at the present time. There are few people now who milk cows who are not anxious to improve their herds. They realize that no matter how well their cows are paying them there is opportunity for improvement. The hope of every good dairyman is in the calves for which he is breeding to the best sires obtainable and for which more than one who reads this is looking anxiously at the present time. We may choose good cows for the mothers of our future herd, we may breed them to great sires, but if the young calves are not properly fed and cared for our success will be limited, to say the least. Every cow is a product of inheritance and environment. The better she is bred the more may we reasonably spend of time and labor to make her surroundings what they ought to be from the day she is born until the end of her life. The calf from a "scrub bull" might claim extra care upon the ground that therein lay the only chance of proving its right to live in this progressive age, but surely the up-to-date breeder will have much stronger reasons for giving to his calves the best of care and the ration that will best develop them into profitable animals later on.

A large number of the cows in dairy sections are smaller than they should be. The feeder of young animals for beef readily realizes the value of rapid growth, but the man who is growing calves for future use in the dairy is far too apt to think that, "Any cow will give milk," and underestimate the greater value of a large and robust specimen of the particular breed he has chosen. Of course, we do not expect the dairy calf to grow into the type of a beef animal, we do not expect the Jersey or Guernsey calf to ever resemble either in size or form the animals of larger breeds designed for beef purposes, but we should strive for large and healthy animals of the breed we happen to be keeping. I am perfectly sure that many dairymen are annually losing a great deal of money because of their cows being under size. Not that these small cows may not be paying a profit but the profit is smaller than it would have been if they had been so fed and cared for when they were calves as to have grown them into fine, large specimens of their breed. I have grown some of these small cows myself and so come in for a share of the advice I am giving.

My pratcice is to let the calf stay with the cow and do its own milking until it is three days old, then I take it away from her and feed it 2 pounds of whole milk each day until it is six weeks old. Nature's food for the young calf is whole milk and there is nothing like it. It is not necessary, though, that it should be very rich in fat. The Holstein calf will grow as fast and keep just as healthy upon very thin milk as upon that which is much richer, but nature demands some fat for the calf and there is none so good as that secreted in the milk. I know a great many people don't feed their calves whole milk for more than half as long a time as I do, as they want to sell the cream, but I know that feeding whole milk for six weeks pays me well. I don't hesitate putting some extra expense into the ration of a well bred calf. In changing from whole to skim milk I do so gradually. I decrease the former and increase the latter a little at each feeding till the calf is receiving no whole milk at all. There is often a tendency to feed too much milk after it has passed through the separator. We are apt to reason that it is cheap and so give the calves more than they can well take care of. Ten to twelve pounds is usually sufficient for a calf six or seven weeks old, and double that amount will do nicely for a 3-month-old calf. There is a great difference, however, in the amount of milk that can be safely fed, depending upon the individuality of the calf.

I give all grain feed in a dry form. The less solid feed fed in the milk the less trouble will there be with digestive disorders. I get the calves to eating nicely cured clover or alfalfa hay just as soon as possible. I give them all they will eat of it, none to waste, however, but all they will eat. I have used prepared calf feeds and they are very good, but they cost more than home grown feeds. There are several kinds of grain that can be fed to a calf with good results. Wheat middlings are all right, corn meal is good, ground wheat will give excellent satisfaction, and ground oats are also good. The calf may also be fed whole grains, oats or corn, and will make good growth on these. I would never feed cotton seed meal to a calf, but aside from that I would feed calves almost any sound grain that they like. A little ground flaxseed with the other feed is good. Blood meal in very small quantities is sometimes of use and prepared calf foods will give good results.

It is, of course very important that the feeding receptacles be kept perfectly clean at all times. Regularity in feeding is a necessity. The calves will do better fed at regular periods than if fed irregularly. A little salt kept within reach of the calf will be of essential aid. The calf's quarters should be kept clean and dry and a plentiful supply of good bedding provided, bright straw being excellent for this purpose. As exercise is an important feature in the proper growth of the calf the youngster should have a lot or paddock in which to move about as much as it pleases. The drinking water for the calf should be of the purest and cleanest obtainable, and in the winter when the water becomes very cold it should be warmed enough to take the chill off.

The person who feeds and cares for the calf must be ever on the watch. He must study his business. He must use his head all the time in his work He must watch the animals he is feeding and learn to know what he sees while watching.

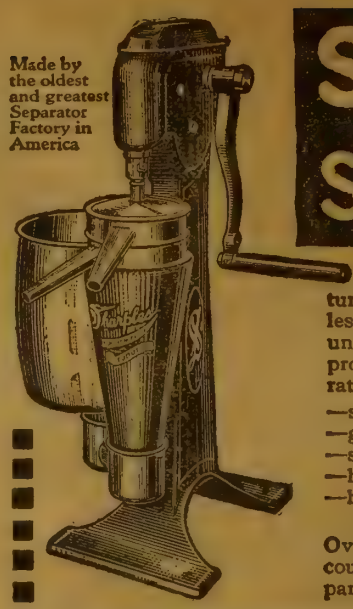
One of the most common troubles in calf raising is the disease known as scours. This is nothing more or less than indigestion. Every attack of the malady pulls the calf down and hinders its growth and development. The type of scours most prevalent among dairy calves is the one known as common scours. Another and more serious type is white scours, which is an infection disease and often fatal. White scours is caused by germ infection of the little calf through the naval cord, due, usually, to being dropped in an insanitary stall with unclean surroundings or where there has previously been an infection of the same nature so the germs are present. There are a number of causes which are very apt to produce common scours. Improper feeding, insanitary stalls, unclean bedding, sour feeding pails, boxes or utensils used in handling the milk or other feed, lack of sunlight and pure air, feeding milk that is beginning to turn or is sour, and variation in the temperature of the milk, are all causes that are very apt to produce common scours. At first the milk should be fed at a temperature of from 95 to 100 degrees F., this being about the same temperature it is when it comes from the cow. After the calf is on skim milk the temperature need not be quite so high, but it should be the same for each feeding. I find it best to run the milk from the separator into a large milk can then pour out in separate pails for the calves. In this way feeding foam caused by separation is largely avoiued.

If a case of scours develops I immediately cut down half of the ration for a time. I have tried several remedies recommended for scours, but the best treatment I have ever employed is to reduce the ration one-half and give the calf one ounce of olive oil and a fresh egg beaten in the milk once a day. I also give the calf a little charcoal in its feed twice daily. By treating the calf in this way it is but a short time until it is in good condition again. I am enabled to say, from considerable experience in raising calves, that the sort of feeding and management here mentioned will insure normal development, which means larger and better animals later on. If we want to get the most out of our progressive methods in breeding we must take good care of the calves after we get them. We can never look for the best results from the progeny of the most prepotent sire unless we give his daughters a chance to develop in the best sense of the word.

Comfortable barns keep dairy cows warm for more cheaply than high priced feed.

WARM WATER SAVES FEED

Warm drinking water for the dairy stock will save feed and also benefit the milk flow. It saves feed because it does not draw on the vitality of the cow as does cold water. It benefits the milk flow because a cow will not reach her maximum production unless she drinks water abundantly. This she will not do if it is ice cold.



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"Skims clean at any Speed"
SEPARATOR

Experiment stations and separator manufacturers all admit that all separators (except Sharples) lose considerable cream when turned slow or unevenly. Thousands of investigations have proved that 19 people out of 20 turn their separators too slow. Sharples is the *only* separator that:

—skims clean at widely varying speeds
—gives cream of unchanging thickness—all speeds
—skims your milk quicker when you turn faster
—has just *one* piece in the bowl—no discs
—has knee-low supply tank and once-a-month oiling

Over a million Sharples users in every dairying country of the world. Write for catalog to Department 104

The Sharples Separator Co. - - - West Chester, Pa.
Sharples Milkers—used on over 300,000 cows daily
Branches: Chicago San Francisco Toronto S101

Stockmen and Feeders

The Hochenauer Alfalfa and all Products Grinder will grind all kinds of Hay, Grain, Straw, Corn Fodder and any dry forage in such form that the stock eat it all with no waste whatever and is guaranteed to

SAVE 35% OF YOUR FEEDING COST

It is very simple in design and operation and requires no experienced labor to operate. Over fifty large feeders in the intermountain territory are now using them.

Made in various sizes for large and small feeders. Write us for samples of grinding and additional information.

Landes & Company
SALT LAKE CITY, UTAH.

SAVE MONEY ON SPREADERS

Buy direct from my factories where I build the lightest draft, easily handled, expertly designed spreader from highest quality materials and sell to you at lowest manufacturers price—less than wholesale! Thousands upon thousands of Galloway Spreaders giving satisfaction. Nine styles and sizes. Also build engines and cream separators. 300,000 satisfied customers—some in your vicinity. Close shipping points save freight. My free catalog honestly describes Galloway goods. Get it before buying. Please mention implement wanted.
WM. GALLOWAY CO., Box 1579 WATERLOO, IOWA

Used Car Bargains

We offer, subject to very liberal terms, the best used cars in America. The standard values of the automobile world. We refer directly to the Oldsmobile and Buick cars.

We have these cars, in stock, ready for immediate delivery, newly painted, in first-class mechanical condition. Exceptional values—many of the cars offered have run less than 5,000 miles.

Write us stating your car requirements, Department F.

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Light Weight Cushman Engines

Built light, built right—for farmers who want an engine to do **many jobs in many places**, instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. **Throttle Governed.** Schebler Carburetor. Friction clutch pulley Runs at any speed.

4 H. P. Weighs Only 190 lbs.

Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is original and successful **engine for Binder.** Also used on Corn Binders and Potato Diggers. Engines distributed from Salt Lake City. Engine book free.

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For All Farm Work
4 to 20 H.P.

UTAH IMPLEMENT & VEHICLE CO.
Salt Lake City, Utah.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, NOVEMBER 24, 1917 No. 17

Thanksgiving Day November 29

Written for the Utah Farmer.

Possibly no other religious festival will be so generally observed as Thanksgiving Day. Christians, Mohammedans, Jews, and all other religious people will join in their own way of expressing their thankfulness for the blessing we enjoy this day.

Nov. 18, 1787, was our first national Thanksgiving day, ordained by the act of the Continental congress and proclaimed by George Washington. The day was set apart in the words of the resolution to express gratitude that God had been pleased to "smile on us in the prosecution of a just and necessary war for the defense and establishment of our unalienable rights and liberty."

It was our civil war which brought the people to a new sense of national oneness and since 1863 the president of the United States has annually issued a proclamation of thanksgiving.

The first proclamation for the observance of Thanksgiving Day was one by our First President George Washington.

THANKSGIVING DAY

First Presidential Thanksgiving Proclamation.

And also, that we may then unite in most humbly offering our prayers and supplication to the great Lord and Ruler of Nations, and beseech him to pardon our national and other transgressions; to enable us all, whether in public or private stations, to perform our several and relative duties properly and punctually; to render our national government a blessing to all the people, by constantly being a government of wise, just and constitutional laws, directly and faithfully obeyed; to protect and guide all sovereigns and nations (especially such as have shown kindness unto us) and to bless them with good government, peace and concord; to promote the knowledge of true religion and virtue and to increase science among them and us; and generally to grant unto all mankind such a degree of temporal prosperity as He alone knows to be best.

—GEORGE WASHINGTON

As individual members of this great nation—the most blessed of earth—we should be happy indeed for the freedom that we enjoy, for the splendid crops we have been able to harvest, for the many blessings that have come to us.

This nation is composed of a good people. Wherever one goes, he meets those who are just, honorable and God-fearing, and although there may be differences of opinions, yet nearly all men and women are perfectly willing, that others should worship or believe as they please, and that, too, without any hinderance. All have a voice directly or indirectly in the affairs of the government. The people may decide the nature of the laws necessary for their peace and happiness; they may choose who shall preside over them and execute these laws. The very basic principles of this Nation are founded upon religious and political freedom, and well, under the guidance of a loving Father, has it been maintained, and so shall it ever be as long as its citizens live honorably and upright lives. By so doing there is a natur-

(Continued on page 10)

Thanksgiving Proclamations

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A Proclamation.

IT HAS long been the honored custom of our people to turn in the fruitful autumn of the year in praise and thanksgiving to Almighty God for His many blessings and mercies to us as a nation. That custom we can follow now even in the midst of the tragedy of a world shaken by war and immeasurable disaster, in the midst of sorrow and greal peril, because even amidst the darkness that has gathered about us we can see great blessings God has bestowed upon us, blessings that are better than mere peace of mind and prosperity of enterprise.

We have been given the opportunity to serve mankind as we once served ourselves in the great day of our Declaration of Independence, by taking up arms against a tyranny that threatened to master and debase men everywhere and joining with other free peoples in demanding for all the nations of the world what we then demanded and obtained ourselves. In this day of the revelation of our duty not only to defend our own rights as a nation but to defend also the rights of free men throughout the world, there has been vouchsafed us in full and inspiring measure the resolution and spirit of united action. We have been brought to one mind and purpose. A new vigor of common counsel and common action has been revealed in us. We should especially thank God that in such circumstances, in the midst of the greatest enterprise the spirits of men have ever entered upon, we have, if we but observe a reasonable and practicable economy, abundance with which to supply the needs to those associated with us as well as our own. A new light shines about us. The great duties of a new day awaken a new and greater national spirit in us. We shall never again be divided or wonder what stuff we are made of.

And while we render thanks for these things let us pray Almighty God that in all humbleness of spirit we may look always to Him for guidance; that we may be kept constant in the spirit and purpose of service; and that by His grace our minds maybe directed and our hands strengthened; and that in His good time liberty and security and peace and the comradeship of a common justice may be vouchsafed all the nations of the earth.

WHEREFORE, I, Woodrow Wilson, President of the United States of America, do hereby designate Thursday, the twenty-ninth day of November next, as a day of thanksgiving and prayer, and invite the people throughout the land to cease upon that day from their ordinary occupations and in their several homes and places of worship to render thanks to God, the great ruler of nations.

IN WITNESS WHEREOF I have hereunto set my hand and caused the seal of the United States to be offixed.

Done in the District of Columbia this seventh day of November in the year of our Lord one thousand nine hundred and seventeen and of the Independence of the United States of America the one hundred and forty-second.

WOODROW WILSON.

By the President:
ROBERT LANSING,
Secretary of State.

BY THE GOVERNOR OF THE STATE OF UTAH.

A Proclamation.

ANNUALLY it has been the custom of the people of Utah to follow the beautiful precedent established by the Pilgrim fathers to set aside a day in the autumn of each year to return thanks to God for the bountiful fruits of the harvest.

In the midst of war, when depressing news of conflict and suffering assails, we may still find much in the state of Utah for which to return thanks to a beneficent and divine providence.

Let us assemble in our places of worship and thank God as did the Pilgrim fathers for the harvest. Never before have the fields and the orchards yielded in such abundance their grains and their fruits to the toil of the husbandman. Let us be thankful for the privilege of thus contributing to our beloved country and to the nations allied with ours the foodstuffs that will supply our armies in the field and in camp and ward off famine among the civilian population of the civilized world.

Let us return thanks for the opportunities this terrible struggle brings to the United States to abolish tyranny, absolutism and the law of might, and to aid in the establishment of democracy in every civilized nation.

Let us thank God for the safety from serious disaster of the brave men in the army and navy of the United States and let us pray that this comparative safety may continue.

While giving thanks to God for the manifold blessings we have received, let us also resolve that we will do our full duty toward our country in this hour of need, and subordinate all private interests in the interest of the government in this emergency.

In view of these considerations and in conformity with proclamation of the Honorable Woodrow Wilson, president of the United States,

I, Simon Bamberger, governor of the State of Utah, do hereby proclaim and set aside Thursday, November 29, 1917, as Thanksgiving day, and, in the observance of this holiday, I call upon all God-fearing, patriotic liberty-loving citizens to forego business and to gather in their respective places of worship to thank God for his bounteous blessings and to pray for the safety of the republic.

SIMON BAMBERGER,
Governor.

Fall Plowing Is Helpful

Wm. Olsen.

Does fall plowing pay? My neighbor answered the question when he said, that fall plowed land would produce three to four tons more sugar beets per acre. All farmers may not agree with this but one thing sure fall plowed land that is well worked in the spring will pay well for the work done on it, with the increased crop that it produces.

There are several reasons why fall plowing of land intendea for spring crops is desirable. First, whatever can be done in the way of plowing in the fall will not have to be done in the spring when time is precious. In the case of land intended for spring crops, fall plowing may make it possible to get the seed in the ground a week or ten days earlier, which frequently proves advantageous. Then, too, fall plowing helps to distribute the labor, another thing that should be given careful consideration in these days of labor scarcity. Land intended for many of our crops may be fall plowed to advantage, especially so if it is desirable, and in most instances it is, to plow deeply.

Most of our land has been plowed too shallow in the past, and the sooner we can get an inch or two below the usual depth of plowing the better. Deep plowing in the spring is not nearly so desirable as in the fall. To turn a lot of raw soil up in the spring and convert it into a seed bed is not a good plan, to say the least; besides, if the land is intended for small grain, sugar beets, deep plowing in the spring is out of the question because a firm seed bed, such as the small grains, beets and grasses require, cannot then be obtained. In most soils plowed shallow hertofore, one can go two inches deeper than usual in the fall of the year, because there is opportunity for the frost to act upon the new soil during the winter season and get it in shape for a seed bed in the spring.

Then, again, fall plowing helps to kill insects, such as chinch bugs, cutworms, wireworms, white grubs, etc. This in itself is reason enough for fall plowing, especially when it comes to grass land or alfalfa fields that are to be broken up.

It is surprising how much of the organic matter that may be turned under in the fall will have gotten a good start toward decaying by seeding time in the spring. During the fall months, decay sets in and continues during warm days in winter and early spring, and much organic matter is thus converted into soluble compounds for the use of next season's crop.

Never can I remember seeing so many farmers plowing in the fall as one can see right now. The weather conditions have been fairly good, lack of moisture has prevented fall plowing in some sections but it seems as if the lesson of last year has not been forgotten. Our land was frozen so we could not plow and every one seems to realize the advantage of fall plowed land, judging by the number who are doing it.

Fall plowed land should not be harrowed after plowing; let it lay in the rough so that the frost will have a better chance at it. Rain and snow will soak into the ground much better where it is left in the rough. The water will not run off and this is an advantage to most of our land.

Report of County Agent Work State of Utah

October, 1917.

Beaver County.

Hans A. Christiansen, County Agent, Beaver.

Farm Management Demonstration Project: A number of co-operators were visited in company with the Farm Management Demonstrator, and those visited were found keeping their records in good shape.

Organization, Canal and Distribution of Irrigation Water Project: In company with the State Irrigation Specialist and his assistant, arrangements were made for measuring the water loss in the Manderfield Canal, and instructions given on methods for stopping the leakage at the reservoir.

Miscellaneous: Two demonstrations on the use of blackleg vaccine have been conducted and 500 doses of Government vaccine distributed.

A campaign is being waged for a co-operative cheese factory and silos for Beaver County. Three co-operators for building silos have been secured for next year. The Dairy Specialist assisted in the work.

All the local Farm Bureaus have elected their new officers.

Box Elder County.

Robert H. Stewart, County Agent, Brigham City.

Dairy Project: The Dairy Specialist and County Agent visited every dairy section in the county and plans were formulated for carrying on a winter campaign.

Sugar Beet Project: Two records were obtained on the value of fall plowing as compared with disking as a preparation for a seed bed for sugar beets.

Pure Bred Cattle Project: Twenty-five Holstein cows and one Holstein bull, also two Hereford bulls were imported into the County this month.

Cache County.

Robert L. Wrigley, County Agent, Logan.

Miscellaneous: Considerable time has been spent in demonstrating methods of seed selection for potatoes and corn.

A number of farmers are making preparations for securing old ewes and lambs for fall and winter feeding.

With the assistance of the Dairy Specialist, about one hundred cows were added to the Wellsville Cow Testing Association.

One pure bred Jersey bull has been secured. Efforts are being made to organize a bull association in one district.

Eight records have been secured on the value of fall plowing as compared with disking as a preparation of a seed bed for sugar beets.

Carbon County

Lew Mar Price, County Agent, Price.

Potato Project: In a field where a check plot was planted, an increase of 29 per cent by weight was shown in favor of the treated seed.

A number of demonstrations on hill selection for next year's seed have been given.

Feeding Project: A number of co-operators are keeping records on feeding sheep and cattle have been secured. Efforts are being made to foster this industry.

Duchesne County.

George M. Hess, County Agent, Roosevlet.

Miscellaneous: About twenty demonstrations on hill selection for seed potatoes have been given this month.

Farmers are being urged to increase the number of hogs on the farms, and to use better bulls.

The County Agent Leader spent five days with the Agent assisting in lining up the work.

Emery County.

Orson P. Madsen, County Agent, Castledale.

More and Better Livestock Project: Five silos were built in the county this year and all are now filled. The County Agent assisted in filling two of them.

Five hundred old ewes have been brought in for feed and one thousand lambs ordered.

Thirty-two head of dairy cattle have been placed.

Potato Project: Several demonstrations on hill selection for seed potatoes have been given.

Miscellaneous: About three cars of horses for the War Department have been lined up and are ready for delivery.

Two demonstrations on the use of blackleg vaccine have been held.

Garfield-Piute Counti s.

Archie D. Egbert, County Agent, Panquitch.

Miscellaneous: A general campaign for eradication of wolves and coyotes is being planned for winter work. One thousand baits have been made.

Demonstrations on use of blackleg vaccine have been given. About ten thousand head will be treated this fall.

The Dry-Farm Specialist spent a number of days in the county.

The committee working on a co-operative cheese factory is being favorably received.

Iron County.

Alma Esplin, County Agent, Cedar City.

Livestock Improvement Project: Farmers are preparing to feed lambs and ewes this season instead of selling their hay.

Demonstrations on use of blackleg vaccine have been given and farmers in every district urged to use it when the cattle come from the mountains.

The Farm Management Demonstrator, with the County Agent visited the co-operating farmers this month.

Millard County.

Joseph P. Welch, County Agent, Hinckley.

Live Stock Project: Committees are at work arranging for farmers to procure feeders for this season.

Drainage Project: Assistance has been given by the U. S. D. A. Drainage Expert this month. One district is advertising bonds for sale. One new district is in process of formation.

Morgan-Summit Counties.

Aaron F. Bracken, County Agent, Coalville.

Dairy Project: The co-operation of the three High Schools has been secured in testing dairy cows, and the work has commenced.

Potato Project: A demonstration on hill selection of seed potatoes has been held in every town in the counties and fifty farmers are co-operating in carrying on the work.

Livestock Project: A number of farmers are making preparations to feed old ewes on their farms. Fifteen hundred have already been placed.

Salt Lake County.

Heber J. Webb, County Agent, Sandy.

Miscellaneous: A number of demonstrations on seed. selection of potatoes have been held. It has been found that yields from local seed are as good as from imported seed.

Cnsiderable time has been spent on collecting data on the different projects, but the work is not finished as yet.

San Pete County.

Theron W. Bennion, County Agent, Manti.

Pumping for Irrigation Project:

Remember the heavy snows of last winter?

Don't be caught napping!

The COMMON SENSE sled is simple and durable in construction, yet priced unusually low. We guarantee the COMMON SENSE to give long and unfailing service. It comes in 5 models.

The next time you are in Murray, drop in and let us show you the Common Sense. We can make immediate deliveries.

Miller-Cahoon Co.

Murray Idaho Falls

Pioneer implement dealers of Utah.

DRINK

BECCO

BETTER THAN BEER

A delicious beverage that satisfies your natural appetite pleasantly, wholesomely. A beverage with snap and sparkle—a tang that delights.

"Better by test than all the rest."

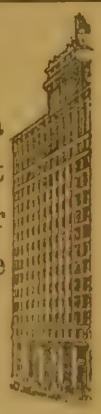
Becker's Becco

makes you glad that the state did go dry.

If your local dealer hasn't BECCO order from

Becker Mfg. Co., Ogden, Utah.

You will find a cordial, helpful spirit at this bank, whether your account be large or small.



Resources over $8,000,000.

Walker Brothers Bankers

SALT LAKE CITY

Several pumping plants are being constructed for use next year. A large number of acres will be bought under cultivation.

Livestock Project: A large number of farmers will feed beef, lambs and old ewes this season, and accurate data will be collected on the results.

Farmers are being urged to use vaccine for blackleg.

Sevier County.

William White Owens, County Agent Richfield.

Crop Standardization: On all data collected, potatoes from treated seed are yielding better than the untreated check plot.

Swedish Select Oats are out yielding any other variety grown.

Miscellaneous: Some time has been spent in securing sugar beet labor. Farmers are being urged to use blackleg vaccine. Co-operators are being secured for keeping data on the feeding project.

Uintah County.

John Hyrum Wittwer, County Agent, Vernal.

Dairy Project: A campaign for dairying has been carried on this month with the assistance of the Dairy Specialist. Co-operators for keeping records are being signed up. The first silo in the county, a pit silo, has been completed and filled with corn.

A bull association is in process of formation, and arrangements are being made to import a number of pure bred dairy animals.

Livestock Project: Several farmers are making preparations to feed sheep this season and maintain a small farm flock. Much interest is being shown in increasing the number of hogs kept on the farm.

Miscellaneous: An investigation of the dry-farming possibilities in the basin was made in connection with the Dry-Farm Specialist.

A field excursion by some farmers and High School students was conducted this month.

Utah County.

David S. Jennings, County Agent, Provo.

Standardization Project: Considerable time has been spent in collecting data on results of the corn and potato variety tests. Results are not tabulated as yet.

Miscellaneous: Considerable time was spent in collecting and preparing exhibits at the State Fair. Assistance has also been given at three local fairs. About fifty schol students were placed with farmers in helping harvest the fruit crop.

Wasatch County.

Ezra R. Price, County Agent, Heber City.

Miscellaneous: A number of demonstrations on hill selection for seed potatoes have been given.

Considerable time has been spent in getting acquainted with farmers, and crop conditions in the county.

Washington County.

David Gourley, County Agent, St. George.

Dry-Farm Project: A number of demonstrations on treating wheat for smut for fall planting were given.

Miscellaneous: Considerable time has been spent in assisting farmers find a market for their beans and molasses.

Some work has been given to organizing Farm Bureaus in the county, and sentiment is very favorable.

Six demonstrations on selecting seed potatoes and corn have been given.

Weber County.

W. P. Thomas, County Agent, Ogden.

Potato Project: Data is being collected on results of treating the seed, and every demonstration shows an increase of at least 20 per cent.

Dairying Project: An organized effort to increase the price of milk paid the farmer has been very successful. In every instance, where an increase was asked as an organization, the price has been advanced. A campaign for better and cleaner milk has been carried on with the assistance of the Dairy Specialist.

Miscellaneous: Considerable time has been spent in collecting data on the different projects. Thirty-seven people have been given assistance in building proper storage for farm crops. The Bureau has placed 120 men on farms during the month. The Bureau has sold nine cars of potatoes and seven cars of apples.

THE FARMERS WAR RESPONSIBILITY

The war has given to the American farmer the greatest responsibility, the greatest privilege and the greatest task any man or any class of men have ever known.

The American farmer in large degree will determine the trend of human history for all time to come, because the enormous ultimate consequences of this conflict rest primarily upon the farmers' production of food and feed to sustain the fighting forces. They might fail even with an adequate food supply; without it they are certain to fail.

But in his field, far from the fury of battle, far from either the adventures or the horrors of the firing-line, the American farmer will say whether autocracy or democracy shall rule the world during the seasons that are to come.

In a sense the war will be won or lost in the fields, gardens, orchards, pastures and hog lots of the American farmer.

The hope of the American citizen, not a farmer, also hinges upon adequate agricultural production. Our aeroplanes are useless, our guns are spiked and our rifles jammed, our shells are but as harmless baubles, if the farmer fails. This must be understood in all its grim force by every man, woman and child in America; by farmers and by those who are not farmers.

With food we can win the war.

Lack of food will lose the war.

Whether or not we produce the food depends upon whether or not each and every individual farmer does his level best on his farm produces its maximum.

The Consumers' Part.

But the "agricultural problem" means not merely the production of foodstuffs and feedstuffs and livestock. It means the conservation of the food after it is produced. That puts the "agricultural problem" squarely up to everyone from the man on a forty-acre field to the man whose fertile lands run farther than he can see; from the tenement cavedweller to the occupant of the costliest mansion.

The agricultural problem today means to every American, and indeed to every civilized person on earth, simply whether he shall, when this strife ends, be a free person in a free land, or whether he shall be bossed from Berlin.

That is the precise interest that you, now reading these lines, have in the agricultural problem in America today. You may have been a farmer all your life or you may not know the difference between a straight furrow and a threshing machine—no matter what your condition may be, one of the two divisions of the agricultural problem is yours; to produce food or to conserve food.

Many people have thought of the war as "far away," as a remote, impersonal thing, a sort of dreadful nightmare—but not as a spectre menacing our immediate persons and property. Our appreciation of the actuality is more poignant now, with our own flesh and blood upon the firing line. That firing-line is in France today. It will come to America if the farmer fails.

No matter what course military strategy may take, the final battlefield of the war is already fixed. The Waterloo of the Prussian atuocrat and all he stands for, or the Waterloo of American liberty—the end of autocracy or the end of democracy—the end of Prussianism or the end of freedom—will be wrought on the battlefield of the American farm—every American farm.

Another Battlefield.

But even victory there will not avail if we lose in another equally fateful battlefield—the American kitchen. If we produce to the limit of farm resources and energies and do not conserve what we produce we may lose by waste.

No conceivable responsibility could be more grave, no privilege more proud, no opportunity more rich for significant service than the American farmer has today. The war has sounded a call to duty to every individual throughout civilization. The course of the individual life is not now to be considered in terms of self. The question dominating every individual is for what service can he be used—what can he best do to help win the war. To some the call comes to march away with uniform and gun, to some it comes for the organization and administration of parts of the great war machine—to the American farmer comes the call to feed the forces fighting for liberty. To every other man, woman and child comes the call to save.

That about sizes up your personal interest in the Nation's agricultural production and conservation program.

THAT SKIM MILK—SAVE IT

Save every drop of skim milk. It is a valuable food. Use it in your kitchen and on your table.

It is valuable as a beverage, in cookery, as cottage cheese—too valuable to waste, whether it comes through your own separator or the separator at the creamery—too valuable to be thrown away, or fed to farm animals, if it can be used for human food.

At creameries where whole milk is handled, skim milk is often thrown down the drains. Creameries ought to make their skim milk into cottage cheese.

Farmers ought to make cottage cheese at home. Skim milk so used will supplement our meat supply, for cottage cheese is one of the best substitutes for meat. Use it in your cooking.

Make and eat cottage cheese and encourage others to use it.

Make puddings and soups and bread with skim milk.

EAR TAGS PERFECT

Samples Free

ATTACHED INSTANTANEOUSLY

Name and Address. Numbered if Desired.

LEG BANDS for Poultry, Pigeons, Turkeys

SALT LAKE STAMP CO. Salt Lake, Utah.

CUTTER'S

BLACKLEG PILLS

"California's Favorite" for nearly 20 years

For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:

10 dose pkge. Single pills	$1.00
50 dose pkge. Single pills	4.00
10 dose pkge. Double Pills	1.50
50 dose pkge. Double Pills	6.00
Cutter's Pill Injector....	1.50

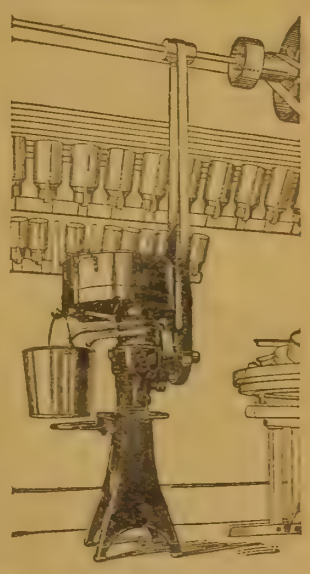
Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent

Pick a Lily or a Primrose—You Can't Lose



CREAM is the fruit of the dairy farm. The land, the equipment, the herd, and the labor of the farm hands find themselves justified chiefly at separating time.

That is why it pays to be very careful in picking a cream-saving, money-making machine. That is why thousands of prospering farmers have built up their herds around **Lily** and **Primrose** cream separators.

Lily and **Primrose** separators have become famous by living up to the slogan "Save all the cream, down to the last drop in each gallon of skim milk." And behind that fact are the other prime qualities that go to make up the satisfactory cream separator. **Lilys** and **Primroses** are of very simple, lasting design, easy to clean around and under, and they can be washed and thoroughly cleaned in a few minutes. When you buy them they are completely adjusted for everyday use except for the one adjustment regulating bowl height—and this one is very easily made on outside of frame. The splendid spray oiling system, the phosphor bronze bushings, the one-piece spindle, the quick-grip quick-releasing clutch, etc., etc., all have their reasons for being built into the **Lily** and **Primrose**.

Our catalogues are bound to interest you; they show why a **Lily** or a **Primrose** will save you money twice a day. Write us or see the dealer, as you prefer.

International Harvester Company of America
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Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

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Devoted to Agriculture in the Rocky Mountain Region

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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OFFICIAL ORGAN
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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Already the war tax is being felt. Soon we will realize we are at war and a war in which every one must take part.

Burn the weed seeds, do not let them get scattered over your farm. This is one way you can reduce your labor.

With a minimum price of $15.50 for hogs every one can afford to raise a few more next year. Raise a hog and help win the war.

Allow no rats or mice around your farm, you can not afford to keep them, they destroy to much. Prompt action is necessary with these pests.

Now is the time to write to the editor of the Utah Farmer. Tell him of your experiences or ask him any questions you are interested in.

Hogs are too valuable and of to much importance to allow any sickness among them. If you do not know how to treat a sick hog find some one at once who can help you.

Put your machinery away. It cost too much to allow of any waste by the winter storms. Save your machinery as well as any other thing on the farm.

Meats, wheats and sweets are what we should produce to help our government. To produce them is patriotic and profitable.

Some of our patriotic citizens are not going to let hotels and eating houses be any more loyal than they are, so meatless Tuesday and wheatless Wednesdays are going to be observed in their homes.

Have we forgotten the hen in all this talk about food production. She can produce food in the way of eggs and meat more quickly than any other livestock. On many farms a small flock of hens are fed on the waste-foods.

As a matter of warning and information to any one who receives a chain-letter for the collection of money the Red Cross do not approve of them. Such methods give no assurance that such donations will ever reach the Red Cross. Pay no money only to recognized persons who have the authority to collect money.

By December 10th all bakers hotels, restaurants and others using over 10 barrels of flour monthly must procure a license. This is only another step to control and conserve food.

We have the largest crop of feeds ever produced in the State. Why not feed this to livestock. Now is the time to increase the number on your farm. Feed livestock rather than sell your hay or grain. There is a great demand for meats and fats. There will be no decline in price from the present outlook.

One large eastern company employing a large number of men have purchased a several thousand bushels of potatoes, storing them and will sell them to their employees at cost as they need them. A good practical way of helping those who serve them and also help to increase the use of potatoes and save the wheat supply for our Allies.

THRIFT AND ECONOMY

Possibly one of the greatest lessons we will learn from the war will be the practice of thrift and economy. Already we are helping by buying bonds saving our money to do it. No serious hardship but a real lesson in thrift.

Learning how to save not only our foods but save time and labor. The scarcity of help will bring home the need of making every act count. There must be no lost motion. Labor saving tools, implements, machinery of all kind both on the farm and in the home must be used to the very best advantage. Better and more results must come from our labor and the time we spend doing any certain thing.

How to save not only food and feeds but our machinery and most of all our farms—save them from becoming non-productive. We must learn to get bigger yields of the same amount of ground. Save the fertility of our farms and make them yield more for the time and labor we put on them.

We have already started in this great work of thrift and economy and as we learn better how to accomplish if we will see the good results and profit by the great lesson that is being brought forciably home to us on account of the war.

ONE WAY OF WASTING FEED.

When there is a shortage of feed, every way to conserve it should be employed. One waste we often over look is the feeding of good hay, and some times grain, to an unprofitable dairy cow. A good dairy cow will produce about four times as much food value in milk as the steer or sheep does in meat, considering the amount of feed consumed. When a farmer has livestock on his farm he can utilize much of the waste products, the rough feed growing on ditch banks and near fences. He can pasture with profit his fields after crops are harvested. All of this can be turned into human food at a good profit if he has a good machine, a profitable dairy cow.

There is a greater demand all the time for dairy products and the good efficient dairy cow is going to be more valuable.

It is the poor cow that does not pay for her feed or care that is a waste and should be weeded out. Not only the waste of food is lost but profitless labor is wasted by keeping such poor cows. Don't guess which are the good or poor cows but find out by testing and keeping an account of milk produced.

PRICE OF HOGS

For the next year or more our government is going to be a large buyer of hog products, for our own use also for our Allies.

After the Food Administration representatives discussed the question of prices for hogs with swine breeders from six of the corn belt states they endorsed a plan to make the price of corn the basis for the price of hogs. In other words Mr. Hoover now assures the farmer that he will be paid for hogs according to the cost of feed. The world needs the hogs and the farmer is willing to raise them if given an assurance that he will get a fair return for feed and time used. When the price of hogs is stabilized there will be a great increase in the number.

A known price for hogs will bring the same results that a guaranteed price did for the increased production of wheat.

We believe that Mr. Hoover and his assistants will work this problem out and any farmer who will increase his production of hogs will be able to make a fair profit on feed and time used.

STOP THE FIRES

During the past six months more than thirteen million dollars worth of food has been destroyed by fire. During the first 16 days of October three and one half millions worth burned up. These figures are for the known fires say nothing of the many small ones not considered in these figures.

This food would have supplied a million men at the front for thirty-three days.

The remedy for all this is greater care, extreme vigilance and providing some protection in the way of preparedness to fight fires.

The spy and friend of our enemy is using this as one of his methods to help win the war. To safe guard your property exercise all the care and vigilance possible.

Prevent a fire if possible, in case one does start be prepared to fight it. The first five minutes does more to extinguish a fire that all the time that comes after.

For your own good and the protection of your property take this fire proposition seriously and do something about it.

GET READY FOR WINTER.

Take advantage of the beautiful weather we are now enjoying and prepare for winter. Repair the barns and buildings and put them in shape for winter use. Good protection for livestock will reduce the feed bill.

The farm machinery should be put away and protected from winter storms. Paint the wood and oil the iron parts, your machinery will last longer if you will do this.

Make every day count, when the first storms come plan some work that can be done in the barn or sheds and in this way keep every one busy.

Clean up around the place, allow no trash or anything that will breed disease to find a place on your farm or near your home.

Paths and walks can be made with a few loads of gravel, will keep your feet out of the mud, and help the wife, for her work is greater when mud is carried into the home.

These suggestions will help you think of others, it is right now you should get ready for winter.

IMPORTANCE OF THE DAIRY COW

Never before in the history of the world has the importance of dairying been brought so forcibly to the attention of the public. Dairy products are absolutely necessary for the successful prosecution of the war, and never before were they needed as much as at present. Milk is needed for the children, for invalids, and for the soldiers at the front and in hospitals. Are the dairymen in the Western States doing their best to keep up the supply and thus help win the war?

Milk contains fat—fat may decide the war. Field Marshall Hindenburg says that if his soldiers do not receive more fat in their food they must stop fighting. A good cow will produce more fat in 12 months than is contained in her carcass. It is necessary that every dairy field man exercise his influence to the fullest extent in maintaining the supply of dairy products.

Some dairymen have sold their dairy cows on account of the high price of feed. Others because of the scarcity of help. Every effort should be made to conserve the dairy herds. Where help is not availbale the dairymen having feed, it would be better to let the calves run with the cows rather than have them slaughtered.

In England the number of dairy cows is being reduced a million a month. It is hoped that the dairymen in the United States will be far sighted enough to avoid such conditions so that when they are called on to restock Europe with dairy cattle, they will be prepared.

UTILIZING BEET TOPS

Their Value to the Stock Raiser for Siloing Purposes.

By J. A. Brock.

Covering the Silo

Another method of covering the silo is by putting manure on the top of a thick layer of fine chaff in place of earth. It is claimed by those who advocate this method of covering that the straw absorbs any liquids coming from the manure. This method of covering has been used by several large feeders.

In no instance should the tops and leaves in the process of siloing be subject to excessive pressure at any one point. In other words, care should be taken to have an equal pressure on the whole mass. For example, if the wagon is driven into the pit care should be taken to avoid driving in the same tracks repeatedly.

Another precaution which the farmer who siloes his leaves should adopt is to exclude all air from coming in contact with the mass after siloing. This is important, for if the air does reach the mass after siloing, there are liable to follow secondary reactions which are favorable to the existence of micro-organisms, the combined action of which ultimately will cause putrefaction to set in.

Several days after siloing, the leaves become heated and lactic fermentation follows, the mass taking on a dark brown color. If the siloing has been carried on in a proper manner, the mass will remain in a perfect state of preservation for a long period.

Some authorities have advocated the placing of cement bottoms in the siloes for the purpose of collecting the liquid. The extra expense involved in this method does not appear to be warranted, as there is no evidence of a resultant increase in the nutritive value of the final product, and it has been found where the liquid has been retained that the palatability of the product has been lessened.

Attention is called to the fact that by the addition of one-half of one per cent of common salt, the conservation of siloed leaves may be increased. If salt is used, the fact should be taken into account when feeding, lest an excess of the condiment be administered to the animals.

The silage will be ready for feeding approximately six weeks after the silo has been closed. In filling the silo care should be taken to do so as quickly as possible. In any event several layer of fresh tops and leaves should be added each day.

QUESTIONS AND ANSWERS

Downey, Idaho.

Utah Farmer:

Gentlemen:—I have read with interest your discussion of beet-top silage, but would like to ask one or two questions further. First—Will this method of storing the tops kill this little white louse or beet aphus that we have in some of our beet fields, are, are we likely to infest new land by using the manure from such feed?

Second—Will frost destroy the tops or prevent them from keeping?

Third—Is the silage good for stock other than cattle and sheep, such as horses, hogs, etc.?

Thanking you in advance, I am

Very respectfully,

E. H. Welling.

Answered by James W. Jones.

Siloing beet tops and crowns may not check the ravages of the aphis but it does aid in subdueing leaf spot, which injures the foliage. The fermentation in the silo appears to destroy the spores. Feeding the tops and then spreading the manure, may possibly distribute the spores which cause leaf spot, if the tops have not gone through the silo. The digestive organs of animals do not necessarily destroy these spores.

Beet top silage has a feeding value corresponding to corn silage. It may be fed in a limited way to horses or hogs but so far as we know,, its chief value is for cattle or sheep feeding.

Woods Cross, Utah.

Utah Farmer:

Dear Sir:—Can you give me a remedy for cream that foams and, after many hours of churning still remains in the same condition, refusing to thicken or break?

Cows are feeding on corn fodder, mangel wurzel beets, and some alfalfa hay. Have had no trouble until recently.

Your truly,

A Subscriber.

Answered by Dr. W. E. Carroll.

Difficult churning is experienced frequently on the farm as the cows come into winter feeding. This is due usually to two general conditions. First, the cows are usually rather far advanced in laxation, though you do not mention this to be the case with yours, and also they change from grain feed to dry ration. Both of these conditions affect the size and hardness of the fat particles in the milk and probably also the viscosity of the milk. Occasionally it has been thought that cows may have a disease which does not trouble them in any way and yet may affect the churning of the cream. This disease has not been named nor is it definite that such a thing does exist.

The ration you are giving your cows especially if they are getting a fairly liberal supply of mangels, is better than the usual winter ration on the farm. As to the remedies for the difficulty, if you are feeding only a limited supply of mangles it would probably be well to increase the allowance to 30 or 40 pounds a day, and if possible introduce some fresh cows into the herd.

The ripening of the cream so it is somewhat more acid than usual before churning will also help. It is rather difficult in the winter time, outside of creameries, to control the cream so it ripens well, but by keeping the cream in a fairly warm place for 24 or 36 hours before churning and not adding any fresh cream during this period, the cream should acquire the proper degree of sourness. It may be that you are churning at too low a temperature, though you probably have tried to remedy your trouble by this means. The proper temperature for churning is from 58 to 65 degrees, though it may be necessary under some conditions to have the temperature even higher than that.

Skimming a fairly thick cream will also help, though cream which will test more than about 40 or 45 per cent might not help any. When you have a churn full of cream which refuses to "break," if you are sure the temperature is right, frequently some warm salt brine thrown in will cause the cream to "break."

Franklin, Idaho.

Utah Farmer:

Gentlemen:—I have a five acre piece of land which I purpose to use next year for a hog pasture. The soil is rich and it can be easily irrigated. How many hogs should this land pasture? I intend to divide it into five plots and change the hogs from one to another as the feed matures. Please advise me as to the best crop to plant in each division.

Kindly discuss, also, the value of sugar beet molasses as feed for young pigs.

Yours very truly,

H. H. Stokes.

Answered by Dr. W. E. Carroll.

The best single crop for hog pasture is alfalfa. Experiments have shown this to have a greater carrying capacity for the season than any other crop. With land not already seeded to alfalfa however, it would not be practicable to seed and pasture it all the same year. Some annual crops such as some of the cereals, oats and peas or rape would be good to plant. If it is possible to plant rye fairly thick early so it will get a good early start, part of the land could be sown to this crop for early pasturing. Later on some oats and peas could be seeded and the hogs turned in before the growth became so old that they will waste much of it. Rape could be seeded in still another patch and used either for summer or fall grazing. These three crops will probably be sufficient and in order to have grazing under best conditions, the other two pastures could be seeded somewhat later so as to have the hogs on fairly young vegetation most of the summer. Rape pastures seem to be somewhat better than cereals according to some experimental work conducted at Eastern Stations.

The carrying capacity of the land will vary considerably, depending upon the stand which is attained. Where the grazing is rotated as you suggest there will be made a second growth on some of this which can be utilized. The carrying capacity per season on 5 acres should be around from 75 to 125 hogs.

Beet molasses has to be fed very cautiously to young pigs. Some difficulty has been experienced at the Station here even when feeding a very small allowance to the animals. Some breeders report very good success with it, while others say they would not have it on the place for hogs. If it is to be fed at all, it probably should be diluted in from 20 to 50 parts of water and the slop mixed using this diluted syrup. Careful watch should be kept of the pigs to be sure that no bad symptoms are produced by the feeding, and if any are noticed they of course should be promptly checked by a decrease of the ration in general and also to decrease in the amount of syrup given.

KEEP TURKEYS UNTIL MATURE

W. F. Priebe.

This year's turkey crop has been so slow in maturing that the U. S. Food Administration is urging farmers to withhold the birds from market until fully fleshed. The average young turkey will weigh from 10 to 15 per cent more on December 15 than on November 15 of this year. Turkeys are unlike other poultry. Chickens can be fattened at any time, but a turkey does not take on much flesh until it has nearly reached maturity. Then it gains in weight rapidly.

Feed is now abundant in most of the turkey raising areas, and to place immature birds on the market means the loss of a large potential supply of turkey meat at a time when it is needed to substitute for the beef, pork and mutton that we must export to feed our army and our Allies. The rapid gain in weight which turkeys make after reaching maturity will more than compensate growers for holding them the additional 30 days.

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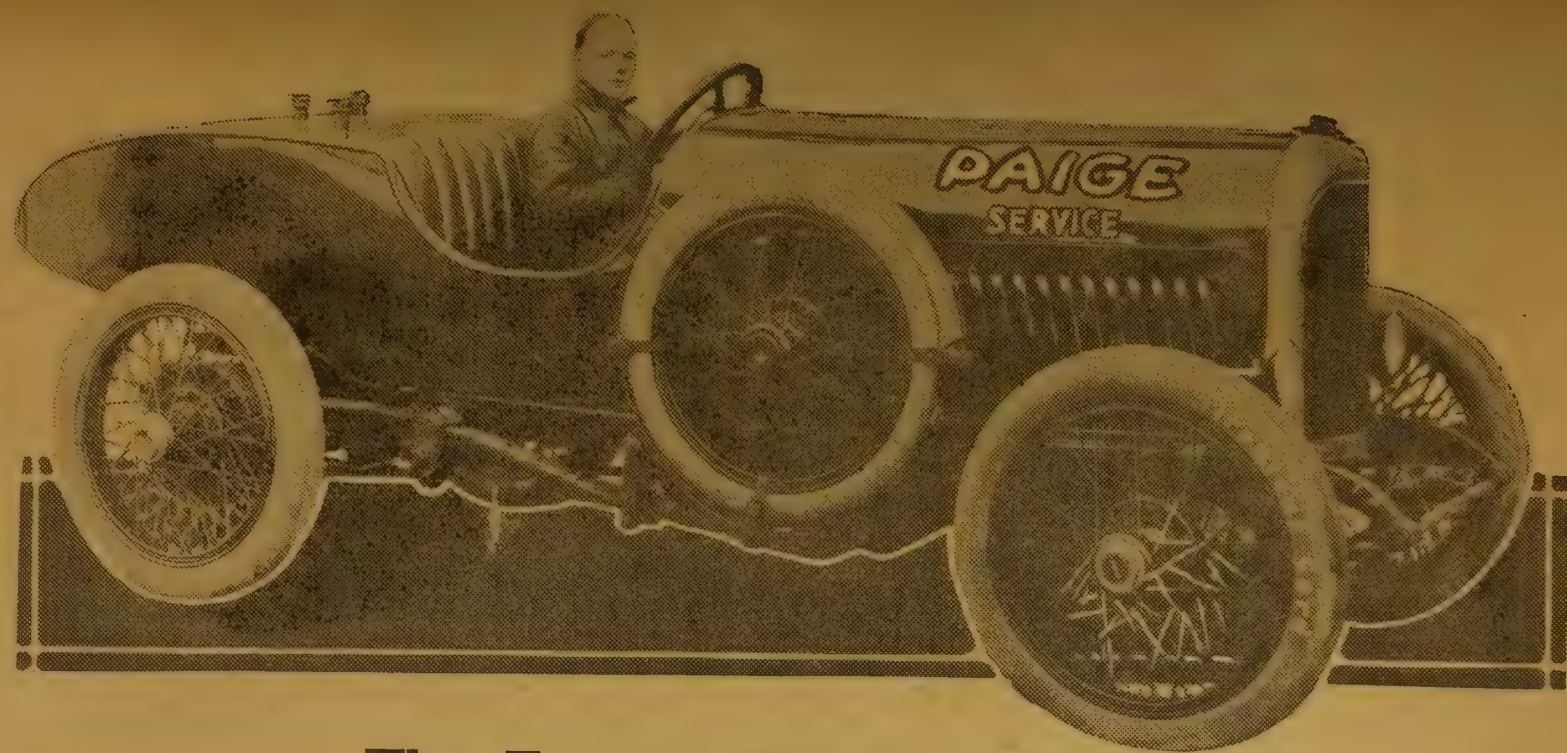

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Thanksgiving Day November 29

(Continued from page 3)

all love within the hearts of all toward all others, and a desire to grant them that freedom and liberty that they themselves desire to enjoy.

Such an expression of love and peace that is manifest everywhere, within the confines of our country, is sufficient evidence, to all the world it sems to us, that here dwells a God-fearing, and liberty-loving people. We only wish that this spirit were diffused among all nations, that "Peace on earth and good will toward men" may be speedily brought about.

Besides the peace and liberty that we enjoy, we have also been blessed with the material things of life all of which have added to our happiness. The flocks and herds upon the thousand hills have been multiplied; fruits and grains have been produced in plenty, not only in sufficient quantities to sustain ourselves, but to assist others; flowers and vegetation have everywhere sprung forth to increase our joy, and nature has smiled upon us to bless. These and all others are the gifts of our Heavenly Father and upon this occasion of thanksgiving we acknowledge the source.

If we could quit thinking of the great war, and all the waste of life and treasure it is causing this would indeed be a Thanksgiving long to be remembered. While we enjoy these manifold blessings let us not forget those who are working with us for the freedom of the world.

Let us reverently and devoutly give thanks, and pray that the President of this great country and those associated with him may be guided by a wisdom greater than human. Let us pray for the success and protection of our army and navy in the battle for peace and liberty.

ECONOMICAL THANKSGIVING DINNER

By Catherine Baker.

The recipes here given are made to serve six people except in a few instances. There will of course be left over chicken, which can be utilized in a number of ways the following day.

The Thanksgiving Pudding as given will serve ten people. Store what is left in a tin receptacle and use for dessert several days later.

All measures are level, using the standard measuring spoon and cup.

There is no need to make of Thanksgiving day a day of drudgery for the "wimmen folks"—much of the preparation can be made the day before. The salted peanuts and pudding can be prepared several days previous; serve the peanuts as they are and reheat the pudding by steaming again for twenty minutes before serving.

The chicken should be dressed the day before and the corn bread baked for the stuffing.

Bake the hot rolls any time Wednesday and reheat in the oven when wanted.

The sweet potatoes can be boiled and mashed while getting dinner the day before. The celery can be washed and put in a wet bag on the ice or hung in a cool place, and the mayonnaise can be made a day or two before and kept in a cool place.

MENU

Meat Loaf Tomato Sauce
Mashed Potatoes Carrots
Spiced Peaches
Slaw
Sour Cream Dressing
Lemon Pie
Coffee

Meat Loaf

1 pound lean beef, ¼ pound lean pork, 1 egg, ½ cup dry bread crumbs, 1 small onion, 1 teaspoon salt, 2 slices fat salt pork, pepper and milk.

Put meat and onion through grinder, add salt, pepper, beaten egg and bread crumbs, mix thoroughly and add sweet milk until just stiff enough to hold shape.

Form into a loaf, put into a roasting pan or skillet, add ½ cup water, cover and bake about one hour, uncover and brown. Lift to platter and pour over it hot tomato sauce, garnish with parsley and serve.

Tomato Sauce

Cook one rounded tablespoon minced onion in 1 tablespoon lard till only slightly colored; add if liked the same amount of minced sweet pepper or parsley, stir in 1¼ teaspoon salt. Add gradually 1 cup of hot stewed tomatoes, cook until thick and pour over the meat loaf.

Mashed Potatoes

Select 5 medium size potatoes, peel and quarter and let stand in cold water for 1 hour. Drain and drop into boiling water, boil rapidly until tender. Pour off water, toss in stew pan before open window for ½ minute, mash thoroughly, add 4 tablespoons butter, salt and pepper to taste and beat, adding hot milk and continue beating until potatoes are light and fluffy.

Be careful not to make too soft.

Slaw

Shave very thin, enough firm white cabbage to make 3 cups, place in cold water to become crisp. When ready to serve, pour off water and drain cabbage on a cloth until dry, mix with sour cream dressing and serve.

A few thinly-sliced rings of red or green sweet pepper added to the cabbage makes a pretty dish.

Sour Cream Dressing.

½ cup thick sour cream, 1 teaspoon salt, few grains cayenne, 2 tablespoons fine sugar, 3 tablespoons vinegar, ¼ teaspoon mustard.

Have the cream very cold and stir in the salt, pepper, sugar and mustard dissolved in vinegar. Beat well and pour over cabbage.

MENU

Cream of Tomato Soup
Salted Peanuts
Roast Chicken Bread Stuffing
Hot Rolls Tart Jelly
Sultana Potatoes
Rice Green Peas
Apple-Celery Salad
Mayonnaise Dressing
Thanksgiving Pudding
Lemon Sauce

Cream of Tomato Soup

1 pint sweet milk, ½ pint tomato pulp, 2 tablespoons flour, 2 tablespoons butter, ½ teaspoon sugar, pinch of soda, a bit of bay leaf, a sprig of parsley, small blade of mace.

Stew 1 can of tomatoes with bay leaf, mace and parsley, 15 minutes, rub through a sieve and measure 1 cupful.

Put the butter in a stew pan and when melted add flour—now add the cold milk stirring constantly, until thick, set aside.

Put the tomato in a stew pan and place on fire, when hot add sugar and soda and stir into the white sauce; do not add salt and serve at once as it will separate if returned to fire after the two mixtures are blended.

Serve with crisp crackers.

Lemon Pie.

1¼ cups sugar, 1-3 cup flour, juice and grated rind 1 large lemon, few grains salt, 3 egg yolks, 1 cup boiling water, 1 tablespoon butter.

Mix sugar, flour, salt, add boiling water. Cook until thick, remove from fire, add egg yolks, lemon juice and rind.

Turn into pie pan lined with pastry, which has been baked a golden brown. Place in a moderate oven and bake until pie is firm. Remove from oven and let cool 10 minutes, then cover with a meringue made as follows:

Beat the 3 egg whites until stiff, add ½ cup of powdered sugar with a teaspoonful of lemon juice and beat until the merginque will stand—spread roughly over the cool pie, return to oven and cook very slowly until the meringue is light brown.

Salted Peanuts.

Peanuts, butter, salt.

Roast peanuts until slightly colored—shell and remove the skins—place in iron frying pan with 2 tablespoons of butter or butter substitute, sprinkle liberally with salt and cook until the peanuts are a golden brown—drain on paper.

Serve in individual nut cases.

Roast Chicken.

Select a plump fat hen, clean, singe, draw and truss in shape the day before wanted for use.

When ready to roast, rub the entire surface with salt and sprinkle with pepper also rub well inside with salt, fill with bread stuffing.

Place in a covered roasting pan, pour in 1 cupful of water, set in a hot oven until brown, then reduce the heat and roast until tender, according to age of fowl.

Corn Bread.

1 egg, 1 cup buttermilk, ½ level teaspoon soda, 1 level teaspoon salt, ½ level teaspoon baking powder, 1 level teaspoon sugar, 1 tablespoon melted shortening, meal.

Break the egg into a mixing bowl, beat until light and add milk. Add soda, salt, baking powder and sugar and enough meal to make a medium thick batter. Add the melted shortening, pour into a sizzling hot greased iron skillet and bake in a quick oven.

Sultana Potatoes

2 pounds sweet potatoes, 4 tablespoons butter, ¼ teaspoon salt, few gratings nutmeg, ¼ cup sugar, ½ cup raisins, 6 or 8 fresh marsamallows.

Boil the potatoes and when tender peel, mash fine, add butter, salt, sugar, nutmeg, and beat thoroughly. If very dry add 2 tablespoons of sweet milk or cream. Add the raisins, slightly floured, put in a greased baking dish and bake 30 minutes in a moderate oven, when ready to serve, place the marshmallows over the top and return to the oven until marshmallows are toasted and slightly colored, serve in baking dish.

Bread Stuffing.

3 cups corn bread crumbs, 1 cup cracker, biscuit or bread crumbs, salt, pepper, sage, 1 tablespoon butter.

Put the crumbs in a bowl or pan and moisten with boiling water, add but-

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ter and cover closely for 30 minutes. Add salt, pepper and sage to taste. Add 1 beaten egg if a firmer stuffing is liked, also add 1 tablespoon of finely ground onion if the flavor is liked.

Giblet Gravy

Put 4 tablespoons of fat, skimmed from the liquid in the roasting pan, in a stew pan, add 4 tablespoons of flour, stir to a smooth paste and brown nicely. Pour on slowly, stirring constantly, 2 cups of stock (liquid from roasting pan together with stock in which head, neck, wing tips, feet and giblets were cooked). Season to taste, chop giblets fine and add to gravy. Bring to boiling point and serve.

Rice.

1 cup rice, 2 cups water, 1 cup sweet milk, 1½ teaspoons salt.

Pick over and wash the rice, bring water and milk to boiling point—add rice and salt—let boil briskly for 5 minutes then place where it just simmers for 30 minutes.

Green Peas.

1 2-pound can green peas, ½ cup water, ½ cup cream or whole milk, salt, butter.

Drain water from peas rinse in fresh water—place in stew pan add ½ cup boiling water and cook until water is nearly evaporated—add 1 tablespoon butter if cream is used—more if milk is used, add cream or milk and salt—when the mixture is hot thicken slightly with flour thickening. Serve hot.

Parker House Rolls.

½ cake compressed yeast, 1 cup milk, scalded and cooled, 1 tablespoon sugar, 2 tablespons lard or butter, 3 cups of sifted flour, ½ teaspoon salt.

Scald the milk and add the shortening, when luke warm add yeast and sugar, set aside for 5 minutes, then add 1½ cups of flour. Beat until smooth. Cover and let rise in a warm place for 1 hour or until light.

Then add salt and remainder of flour. Knead thoroughly. Place in a greased bowl; cover closely and let rise in a warm place 1½ hours or until double in bulk. Roll out ¼ inch thick, cut with 2 inch biscuit cutter, crease through center heavily with back of knife, brush over ½ of each biscuit with melted butter, fold over in pocket book shape. Place in well greased pans 1 inch apart. Cover and let rise until light, about 1 hour. Bake in a hot oven.

This recipe makes 18 or 20 medium size rolls.

Apple Celery Salad.

4 tart apples, celery.

Pare and cut the apples into small pieces and cut the celery (the tender stalks from 1 medium head) into ½ inch lengths—arrange on crisp lettuce on individual salad plates and serve with mayonnaise or boiled dressing.

Mayonnaise Dressing

¼ teaspoon salt, few grains cayenne, yolk, 1 egg, ¾ tablespoon lemon juice or vinegar, scant ½ cup olive oil.

Peanut oil can be used in this recipe. Stir egg yolk—add seasoning and mix thoroughly, add oil drop by drop until 2 tablespoons have been used, after which larger quantities may be added. Stir constantly; as mixture thickens add a little lemon juice or vinegar. Continue adding oil and lemon or vinegar alternately until all is used, stirring constantly. All ingredients should be cold.

Thanksgiving Pudding

2 cups whole wheat flour, ½ level teaspoon soda, ¼ level teaspoon allspice, ½ level teaspoon salt, ½ level teaspoon cinnamon, a pinch of cloves, few gratings of nutmeg, 1 cup seeded and quartered raisins, ½ cup broken pecan meats, ¼ cup finely cut citron if liked, 1 cup sweet milk, ½ cup molasses.

Mix flour, soda, salt and spices, reserving 3 tablespons flour with which to flour the fruit and nuts,—add the milk and molasses and stir in the fruit and nuts.

Grease 2 1-pound coffee cans, half fill with the batter, place on the covers, set in a kettle of boiling water and steam 1½ hours. If water needs to be replenished use boiling water. May be steamed in the roast pan inside the oven. Serve hot with lemon sauce.

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UTAH IDAHO WYOMING NEVADA

LIVE STOCK

MARE AND FOAL

Mother Must Be Fed Carefully at First in Order to Give Colt a Good Start.

"The mare should not be fed heavy grain or hay for the first 24 hours after parturition, and the first feeding should consist of a bran mash with a little cooked flaxseed meal in it," says a new Farmers' Bulletin of the United States Department of Agriculture, No. 803. "Horse Breeding Suggestions for Farmers." A little oatmeal soaked in warm water also is appropriate. If the mare is constipated give laxative feed. In two or three days, if doing well, she may be put back on dry feeds. In a week, if she is put back to work, she can have full feed. The mare may be put in harness, if light work is done, two or three days after foaling, but it is hard on the foal and may injure the mare's udder. It is best to turn the mare and colt in a lot where they can exercise and yet be quiet, but care should be taken at first to see the foal is not chilled by staying out too long in cool, disagreeable weather or by lying on cold, damp ground. They should not be on grass if the mare has not been on grass before.

Use Care in Working Mare.

In a little over a week the mare may be safely put to work provided she previously has been worked. If the foal is left in the stall, the mare should be brought to the stable in the middle of the forenoon and afternoon in order that the foal may get its food, but in no case should a foal suckle a mare that is very warm, as digestive disorders are likely to follow. If possible, do not use the mare for purposes which will keep her away from the farm for a long time, as the foal will either go too long without nursing or else will be worn out by following the mare. When left at the stable the foal should be kept in a roomy, clean box stall in company with another one of about the same age, if possible.

At about 2 months of age the foal will take dry feed, which should be supplied through the dam's grain box. This makes it necessary to furnish her with such feeds as ground oats, corn meal, and bran. A little later on a "creep" should be built in the stall or pasture, inside of which the foal can be supplied with grain without having to share it with its mother. A creep is simply a partition that will keep the mare out of the inclosure, but which is far enough from the ground so that the foal can walk under it. A handful of ground oats should be given at first, and the quantity should be increased slowly as the foal grows. The maximum amount should be about 1 pound a day till weaning time.

Raising the Orphan Foal.

It is not uncommon for a mare to die shortly after foaling, thus leaving her foal dependent on artificial feeding for its sustenance; and some mares furnish an insufficient amount of milk for their colts. Cow's milk furnishes a most logical substitute for mare's milk, but as the composition is somewhat different, certain changes or modifications are necessary in order that the supplied diet be not too dissimilar from the natural. The following table of precentages gives the average composition of the two kinds of milk:

	Water	Protein	Fat	Sugar	Ash
Cow's milk	87.17	3.55	3.69	4.88	0.71
Mare's milk	90.78	1.99	1.21	5.67	.35

Milk from as fresh a cow as possible and which is not rich in butter fat should be diluted about one-fourth with fresh water. A tablespoonful of sugar and about 3 teaspoonfuls of lime water should be added for each pint. This mixture should be supplied to the colt at about body temperature. A bottle with a rubber nipple, or even a finger of a kid glove with a fair-size hole in it fitted over the end of a spout of a vessel, such as a teapot, will serve as a convenient utensil in getting the foal to take the milk. If the finger of a kid glove is used it should be as clean as possible. At first about one-half a cup of milk should be given every hour, the quantity to be increased slightly and the intervals to be lengthened gradually as the foal grows older. In about 2 months skimmed milk may be substituted for whole milk, and in addition one of the following rations should be fed: One part of flaxseed meal boiled to a jelly, and 2 or 3 parts of bran; or 2 parts ground oats, 1 part corn meal, and one-half part flaxseed meal; or 2 parts of bran, 2 parts corn meal, and 1 part oil meal. Feed a double handful a day to start with, and increase the amount gradually.

Raising a foal by hand is not a job for the careless and indifferent. It requires patience, painstaking care, perservance, judgment and cleanliness. The vessel in which the milk is supplied should be scalded thoroughly each time it is used. Unclean receptacles for the milk and irregular intervals for feeding likely will cause scours. The quarters should be very clean and the orphaned foal should have company of some kind. Another foal is desirable, but even a calf is better than no company. A grassy paddock with abundant shade, fresh water, and protection from flies will increase the orphan's chance of proper development.

Scours.

A most common cause of scours in foals is when they get too much milk at irregular intervals; consequently better management is the first step in remedying the trouble. Castor oil often is used to check scours, 1 or 2 ounces being the dose for young foals. Raw eggs also are used successfully Blood meal is considered one of the best remedies, the quantity used being one-tenth to one-sixth of the grain ration. Powdered tannic acid also gives quick relief, the dose being 5 to 15 grains. For other than a mild case a competent veterinarian should be consulted.

Weaning.

Foals belonging to mares that work hard should be weaned earlier than those belonging to mares which are practically idle. While most foals are weaned about 5 or 6 months old, it is well to remember that it is economical to feed a foal through its mother. However, in case the mare is again in foal, if she is allowed to nurse for over 6 months it may decrease the vitality of the next foal. If the foal is getting plenty of nourishment from grain, grass, and roughage, it will not be seriously set back when shut off from its dam's supply of milk. When taken away from its mother it should be placed with another foal of the same sex and age in an inclosure where they can not possibly get out or become injured. Feeding grain is not obsolutely necessary if the foal is on good grass and previously has been accustomed to it, nevertheless it has its advantage, especially with draft animals. Foal feeding always should be practiced with foals belonging to mares that are worked.

The foal should not nurse more than once after it has been taken away. The excess milk from the mare's udder should be taken from 3 to 5 times a day, but enough should be left so that her system will start to absorb the milk, otherwise the drying-up process will be delayed unnecessarily. Not withdrawing sufficient milk will cause the udder to cake and spoil. Vaseline or lard rubbed on the udder will aid in keeping it soft.

The Fate of the Unprepared

Among the remarkable events of this war no fact stands out more startlingly than the tragic sacrifice of Russia's unequipped soldiers.

The army has been victimized by intrigue and treachery. Guns were sent to the front without ammunition and ammunition without guns. Supplies were provided that when unpacked proved to be rubbish. Left stranded by communications that broke down under slight pressure the brave Russian troops hurled themselves again and again against foes perfectly prepared.

From the very verge of victory they doggedly fell back fighting with stones and clubs and iron bars, resisting heroically but ineffectively.

No thought can be more abhorrent to Americans than that of our boys ruthlessly slaughtered because of lack of equipment or support which it is the first business of us at home to supply.

Our Government, never before so powerful, is working prodigiously in the preparation of armies and means of warfare. Throughout the nation there is a unity of purpose that is piling on the altar of liberty every personal ambition and corporate gain.

Mines, factories, farms, shipyards, the counting houses and shops of every industry are laboring day and night to supply the sinews of war.

The Bell System is co-operating to mobilize production, transportation and communication, and is using its every energy to speed up American defense.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy *One System* *Universal Service*

HOG CHOOSES FEED BEST

Experiments Show Good Winter Ration for Pigs.

Corn, shorts, and tankage—free choice—make an excellent ration for the winter feeding of hogs. This has been proved in experiments being conducted by the Kansas Agricultural Experiment station.

In making the calculations, ground corn was charged at $1.68 a bushel, shorts at $57 a ton, and tankage at $80 a ton.

How Costs Compare.

In dry lot with a self feeder, lot 16 was fed corn 70 per cent, shorts 24 per cent, and tankage 6 per cent, mixed,

HORSE EFFICIENCY

Lameness can't be avoided, but its duration can be reduced by using Sloan's Liniment as soon as the horse goes lame. See how quickly this effective liniment relieves stiff, sore muscles, bruises and enlargements and puts your horse back into the 100% class. Thousands of farmers heartily endorse Sloan's Liniment, the universal relief for pains and aches.

Buy it at your dealers. 25c-50c $1.00

Just six times more liniment in the $1.00 bottle than in the 25c size. That's wise economy.

at a cost of $12.69 a hundredweight of gain; lot 17, corn 60 per cent, shorts 32 per cent, and tankage 8 per cent, mixed, $13.30 a hundredweight; and lot 19, corn, shorts, and tankage, free choice, $12.48 a hundred weight.

With alfalfa pasture and self feeders, lot 20 was fed corn 80 per cent, shorts 16 per cent, and tankage 4 per cent, mixed, at a cost of $11.49 a hundredweight of gain; lot 21, shelled corn, shorts, and tankage, free choice, $10.44; lot 23, shelled corn, tankage, and ash, free choice, $10.17; lot 24, corn meal, free choice, $10.65; and lot 25, corn meal 100 per cent, ash 2.5 per cent, mixed, $11.47.

Hogs Turned Down Mineral

In lot 23 the pigs were offered bone ash, rock phosphate, and ground limestone, but none was eaten. The pigs choose from the corn and tankage as their appetites dictated. In this lot the cost of 100 pounds of gain was $10.17, as compared with $10.44 for shelled corn, shorts, tankage, free choice; $10.65 a hundredweight for corn meal alone, free choice; $11.47 for corn meal and ash mixed; and $11.49 for corn meal 80 per cent, shorts 16 per cent, and tankage 4 per cent, mixed. These results indicate that corn and tankage, free choice, furnish most economically all the elements necessary when pigs are allowed alfalfa pasture.

The fact that shorts are not necessary when pigs are allowed alfalfa pasture is of particular value because shorts are usually higher in price than corn and thus add to the cost of production.

Pasture Brings Big Return.

A comparison of lots 19 and 21 emphasizes the value of alfalfa pasture in finishing hogs for the market. In lot 19 without alfalfa pasture, each pig made a gain of 129.05 pounds, the grain costing $.1248 per pound of gain, making the total gain cost $16.10. In lot 21 with alfalfa pasture each pig made a gain of 133.5 pounds, the grain costing $.1044 per pound of gain, making the total gain cost $13.94, a difference of $2.16 a pig in favor of those on alfalfa pasture.

By pasturing the alfalfa at the rate of 20 pigs to the acre as is often done, the alfalfa would have yielded an income in pork production at the rate of $43.20 an acre for the 89 days in [illegible]

The experiment shows that the pig is evidently the best judge of proportions and should be allowed to select the corn and tankage in such proportions as his appetite dictates.

MANURE YIELDS MOST IF USED ON POOR SOIL

Greatest profits may be expected from a ton of manure when it is used on the poorest soil on the farm. The richer the land the less will be the increase in crop yields from the same application of manure if other conditions are the same.

The value of a ton of manure when used on soils of different fertility is illustrated by two series of plots at the Ohio Experiment Station. Corn without any fertilizer or manure has yielded 48.07 bushels per acre for 12 years in a rotation of corn ,oats and clover. In another series not more than 40 rods away, the yield of corn for 19 years has averaged only 35.17 bushels, the other crops of the rotation being wheat and clover. Originally the land was the same, but its treatment previous to the time these experiments began made this difference in fertility.

Eight tons of barnyard manure with 320 pounds of raw phosphate rock per acre has produced an increase in corn yield of 30.98 bushels on the poorer soil. On the rich land the same application with 1,000 pounds of raw phosphate rock has increased the corn crop only 17.89 bushels per acre, even though three times as much of the phosphorus carrier was added. The total yield on the manured land has been nearly the same in both cases.

STEPPING LIVELY

"Did she jump at his offer?"

"Did she! You'd have thought she saw a mouse!"

HOGS AND HEAVEN

Fer thirty years I've had to fight,
To make a bare livin'—no more;
A battle I've waged with all my might,
To keep the wolf from the door.
And durin' that time I've tried every scheme,
That I thot would show me the way,
Of bringin' to me that long cherished dream
Of makin' the blamed farm pay.

I'd figger on corn, then wheat or oats,
Thinkin' now surely, I'd found just the thing;
Or mebbe, 'twas cattle or horses or goats,
That I'd raise fer the money they'd bring.
Month after month, just as regular as fall;
The money I needed, fer a new red barn,
Went to the grocer, the doctor and all.

Then John grew up to the age we'd gave,
As the time he'd oughter learn,
To be somethin' else, beside a slave,
On a farm, that wa'nt fit to burn.
Maw tho't bein' a grocer or a doctor would pay,
Or mebbe he'd like the law;
"Anything at all that'd keep him away,
From a pesky farm," sez Maw.

I balked at first, but Maw wuz stern,
Said the boy should have his chance,
Of learning the thing he wanted to learn—
And, you know who's boss of the ranch,
So 'twas all settled 'tween Maw and me,
That John should go away,
And learn to sell pills or coffee and tea,
And be a big man some day.

But somehow or other we failed to discuss,
The plans John had in his mind;
We supposed, of course, he'd agree with us,
That at farmin' he'd fall behind.
But bless my soul, if he hadn't the face,
To git right up and say,
As how he wuz a'goin' to go to the place,
That taught him how to make farmin' pay.

So off he went to school one day,
And he wa'nt there but a little while,
A'fore he'd wrote, he'd found the way,
Fer us to make our pile.
"It's hogs," sez John, "but good ones, Dad,
The kind that farrow ten or eleven;"
And durn my hide, that pesky lad,
Has made this place a heaven!

—Duroc Bulletin.

SHEEP RAISING CAN BE MADE PROFITABLE

(Continued from page 1)

Unlike the ailments of the hog, however, those of the sheep are ordinarily not contagious, and the means necessary to prevention are the same as should be adopted for the most economical production, even in health.

The most serious menace to continuous thrift in the flock is the presence of internal parasites, chiefly stomach worms. The eggs of the stomach worm are dropped upon the ground with the feces from infected sheep. The small worms are swallowed with the grass three or four days after hatching from the eggs, and reach the stomach. Stomach worms are frequently present in such large numbers as to draw so heavily from the circulation as to cause emaciation and finally death of the lamb. Mature sheep are much less affected by these worms, though they usually scatter the eggs.

Keeping the flock upon crops sown upon plowed land prevents infection. Such practice also furnishes the greatest amount of feed from each acre and the kind and variety of food upon which sheep thrive best. Plowing the land prevents danger from stomach worm eggs dropped upon it. In warm weather the flock should be moved to fresh ground every 10 days or two weeks to prevent infection of lambs by larvae from eggs dropped from the ewes. If lambs are by themselves, the time between changes might be longer, but in most forage crop rotations changes will need to be made every two or three weeks. In the colder climates stomach worms are much less troublesome.

Where land is planted for pasture several crops may be made, fall-sown rye, spring oats, peas, vetches, clovers, etc., planted at intervals, will furnish fresh pasture all the year round. Some of the land can be used twice such as a early spring crop and a fall crop of roots like turnips or possible some quick growing grass.

When land is used this way with sheep it is improved by the manure that is left on the land and usually very evenly distributed.

Surely the sheep industry has not fallen through. In my opinion there is no stock that fits in so nicely with sugar beet and grain farming as a good sized flock of mutton sheep. They will clean those foul weeds out at a profit. If the farmers would stop to think, those lambs are dropped in the spring and shipped in the fall, without cost of a pound of grain to the farmer. Do not let any man tell you that the winters are too long in this country to raise stock. There has not been one winter since I started to raise sheep that the wool did not pay for the keep of the ewes, and most winters it more than paid the cost of keep. One year I sold $1,100 worth of lambs and wool. You need not be told that the business has paid with me. Those sheep have built a dozen miles of woven-wire fence, and left the Boss a nice profit. They have cleaned up and made a more productive farm. Few farms are worth more in this part of the country.

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Don't wait for a vacation until you **have** to take one.

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War Time Farm Prices

By Clarence Ousley, Assistant Secretary of Agriculture.

Germany's Limitation of Shipping Would Have Put Them Below Cost of Production.

It has been lightly asserted that the American farmer has no material interest at stake in the war with Germany. Let us see. Those who think that there is nothing in the American cause except the privilege of pleasure seekers to travel on passenger ships to Europe must have forgotten the specific condition upon which Germany offered to permit American shipping. Without reviewing the tragic events which caused the death of 226 American citizens including women and children, without discussing the sinking of any particular ship, and without even considering the four separate and distinct promises of Germany in effect not to sink ships without safeguarding the lives of passengers and crews, let it be recalled that in her declaration of purpose of January 31, 1917, to extend the submarine zone to Great Britain, France and Italy and therein to sink all ships regardless of flag or cargo, she offered to this country as a special favor the privilege of sending one steamer a week each way to the port of Falmouth, England, upon condition that it should be striped with three stripes each a meter wide, white and red alternating, and upon the further condition that a guaranty be given that such ships should not carry contraband.

Perhaps one ship a week each way would accomodate the pleasure seekers but how much of our export and import business would it accommodate?

In the fiscal year ending June 30, 1913, we exported to Europe farm products to the value of $1,123,651,985, Among these products are the following:

Animals, live	$ 7,080,122
Dairy Products	3,220,893
Eggs	4,391,653
Packing-house products	162,706,355
Cotton	547,357,195
Fruits	36,345,517
Grain and Grain Products	210,523,721
Oil Cake and Oil Cake Meal	29,444,252
Oil, Vegetable	24,044,401
Tobacco	49,353,595

Let us consider the two items of cotton and wheat. The cotton consists of 4,562,295,675 pounds or 9,124,591 bales. The cotton alone would require at the rate of 10,000 bales to the ship more than 900 ship cargoes. As there are only 52 weeks in the year, it will be seen how long it would take a ship a week to move the cotton alone. The wheat consisted of 91,602,974 bushels. It will be an interesting calculation for the children to figure out how many cargoes of 2500 tons each would be required to move this wheat to Europe and how long it would take at the rate of one cargo a week.

As to these two main products and as to other farm products, not to speak of manufactured products, their commercial value depends upon the foregin market. Without a foreign market for cotton, for instance, even this year with the probable crop of only 12 million bales we have for export something like five million bales above the American consumption of approximately seven million bales. If we could not export cotton, therefore, we would have a surplus of five million bales and that surplus would cause cotton to decline from the present high price of 26 or 27 cents a pound to a price far below the cost of production. As illustrative of this point it is necessary only to recall the conditions in 1914 when at the beginning of the war shipping was uncertain and as a consequence cotton sold at six or seven cents a pound. Even with the short wheat crop this year we have something like 100 million bushels more than we need for consumption in the United States. It happens that Europe needs not only that 100 millions but very much more, but if we had accepted Germany's dictation and were to send only one ship a week to Europe, that 100 million bushels above our own needs would be a surplus which would carry the price of wheat below the cost of production.

The right to use the seas is the right to buy and sell in the markets of the world. To be denied that right is to be compelled to live upon our own resources. Of course we can do that in this wonderful country but we can prosper as a nation and as individuals only by trading our surplus of products for the surplus of products which other people have to sell. If, for instance, our farmers could sell no more cotton or wheat than is needed in this country many farmers would be compelled to quit raising cotton and wheat and would use their lands for other farm products and thereby they would cause a surplus production in all farm products. To have accepted Germany's dictation, therefore, would have been to put our agriculture in a state of complete suffocation by taking from every farmer the value of what he produced above what he needed for his own consumption.

The same power that would forbid our exports would also in self interest forbid our imports except in the interest of that power. Therefore to have yielded to Germany's dictation would have restricted us to imports from Germany alone and would have made us pay tribute for all time to her industries.

If we had acquiesced in the limitation of one ship a week we would have conceded the right of Germany to regulate our exports and imports as she might see fit now or hereafter. We had the choice of submitting to that dictation or of fighting to maintain our right to sell and to buy wherever we might sell or buy to advantage. It is inconceivable that an American citizen, regardless of his material interests, could yield to such dictation by a foreign power but on the low plane of material interests we had to fight Germany or cease to be a nation of prosperous producers and become a nation of peons to Prussian autocracy.

NEW PRODUCE REGULATIONS

Eliminating unjustifiable sales from one wholesaler to another, stopping speculation in "futures," and having butter, cheese, eggs and poultry handled in the most direct route from producer to consumer are the chief objects at which the new produce rules of the Food Administration's licensing system are aimed.

One of the fundamental purposes of these rules and of the entire system of licensing is to get the largest possible share of the consumer's dollar to the producer." In these words George E. Haskell, dairy expert of the Food Administration sums up the means by which the farmer will be benefited.

The licensing system which went into effect November 1 does not apply directly to farmers or farmers' organizations and is directed chiefly at wasteful and unfair practices in the handling of food products between the producer and the consumer. But with such practices stopped or diminished, the producer is expected to benefit in several indirect ways. One is a greater public demand as the result of reasonable prices to the consumer made possible by a less expensive distributing system. Another benefit will be the confidence of the producer himself resulting from the fact that his products are being handled in a distributing system under government supervision.

VERY TRUE

Fay—"Of course one can't believe everything one hears."

May—"Oh, no, but one can repeat it."—Chicago Daily News.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enorous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 or 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

H. A. PINEGAR
Wellington Utah

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

FEDERAL LAND COMPANY
Ogden Utah

When you answer an advertisement always mention the Utah Farmer.

RELIABLE FARM BARGAINS

32 acres of land with a modern 6-room brick house, large barn, two garages, chicken coops and other outbuildings. We consider this one of the best buys we have had on our listings for some time. We can divide this property in any size tract you wish, from two acres to the full amount, at a price of $250 per acre. Improvements are extra. $1000 down, $50 per month.

60 acres of land 2½ miles from Tremonton. This land is highly cultivated; has a 5-room house, granary, stable and other outbuildings. The land planted last season to alfalfa, sugar beets and grain. There is one team, wagon, plow and harrow that will pass with the sale of this farm at a price of $135 per acre.

On the state highway, two miles west of Tremonton, we have 185 acres which we can sell you at $160 per acre. This farm is under cultivation, has a 10-room house, granary, stable and other outbuildings. This farm can be divided to suit purchaser. One-fourth down and ten years on the balance at a reasonable rate of interest.

We have one 40-acre farm in the Bear River Valley which we can sell at $115 per acre; one-fourth down and ten years on the balance at 6 per cent interest. This land has a full water right from the Bear River canal and is all under cultivation. If you are looking for a farm that will pay for itself, you should investigate this.

We have several farms in Cache Valley for sale at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. The soil is of a sandy loam nature, easily worked and very productive, and is located within one mile of the town and a quarter of a mile of the railroad station. At a price of from $100 to $110 per acre, depending upon the piece selected.

KIMBALL & RICHARDS
"Land Merchants."
54 Main Street,
Salt Lake City, Utah.
Phone Wasatch 963.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

POULTRY

FEEDING PULLETS.

Failure to Lay May Be Due to Underfeeding—Rations Must Be Substantial.

Every year at the beginning of winter many poultry keepers are disappointed and puzzled by the failure of apparently wellgrown pullets to lay according to expectation. They can not understand why early pullets that seemed to be developing nicely and show the usual signs of being near laying should remain at that stage for weeks and sometimes for months.

Full Feeding Necessary.

Where the conditions are as described, the most common cause of deferred laying is an insufficient ration.

Underfeeding in the early fall occurs oftenest through the failure of the poultry keeper to increase the food given to pullets on range as much as is necessary to make up for diminution in the supplies secured by foraging.

Underfeeding after the pullets are put into winter quarters is usually due to excess of care to prevent them from becoming too fat to lay.

In either case the remedy is to feed the birds all that they will eat of a substantial ration furnishing in proper variety the food elements required, taking care at the same time to provide for as much exercise as will keep them in good condition under heavy feeding.

While pullets remain on range the only changes in diet usually necessary as cool weather comes on are to increase the quantities of food given, especially corn and corn products, and if green food on the range is running short, to supply what is required to make up the shortage.

The Change to Winter Quarters

It is desirable to have pullets in their winter quarters about a month before they are expected to begin laying. Moving them at the stage does not retard laying, while if they are moved shortly before or after beginning to lay the change may set them back several weeks.

Pullets that will not begin laying before winter sets in may be left in the coops which they occupied while growing as long as the weather permits them to range.

Winter Rations for Pullets.

When the pullets are in winter quarters and are dependent upon the feeder for all green food and animal food as well as for grain, one of the following rations will supply the variety required. The proportions indicated are parts by weight.

Ration No. 1.

Dry mash.—3 parts bran, 2 parts middlings, 4 parts corn meal, 1 part beef scrap or fish meal.

Scratch feed.—2 parts cracked corn, 1 part wheat, oats, or barley, or mixture of the three.

Green feed.—As available, in constant supply.

Ration No. 2.

Dry mash.—5 parts mixed feed (bran and middlings), 4 parts corn meal, 1 part beef scrap or fish meal.

Scratch feed.—Cracked corn.

Green feed.—Cabbage, in constant supply.

Ration No. 3.

Dry mash.—6 parts corn meal, 3 parts bran, 1 part beef scrap or fish meal.

Scratch feed.—Wheat.

Green feed.—Sprouted oats, cabbage, or mangel beets.

Ration No. 4.

Dry mash.—6 parts corn meal, 3 parts bran, 1 part beef scrap or fish meal.

Scratch feed.—Heavy oats

Green feed.—Sprouted oats.

Ration No. 5.

Dry mash.—3 parts corn meal, 1 part beef scrap.

Scratch feed.—2 parts cracked corn, 1 part oats.

Selecting a Ration.

In deciding upon a ration a poultry keeper should be governed largely by the availability and cost of foodstuffs in his locality. The common grains do not differ extremely in composition and food value.

CARE OF THE HEN AND CHICKS

The proper brooding of chickens is one of the most difficult operations on many poultry farms, especially for the beginner. Many poultry keepers who are able to obtain good egg yields and fair hatches make a failure of brooding chickens, either in raising only a small percentage of the chickens hatched or in failing to rear strong, vigorous birds which develop into good breeding stock. Brooding is still in the experimental stage, and no one system has given perfect satisfaction.

Rearing Chickens With Hens.

Sitting hens should be confined to slightly darkened nests at hatching time and not disturbed unless they step on or pick their chickens when hatching, in which case the chickens should be removed as soon as dry, in a basket lined with flannel or some other warm material, and kept near a fire until all the eggs are hatched; or the eggs may be removed and placed under a quieter hen whose eggs are hatching at the same time.

An incubator may also be used to keep the earliest hatched chickens warm, in case they are removed from the nest. If the eggs hatch unevenly, those which are slow in hatching may be placed under other hens, as hens often get restless after a part of the chickens are out, allowing the remaining eggs to become cooled at the very time when steady heat is necessary. Remove the egg shells and any eggs which have not hatched as soon as the hatching is over. Hens should be fed as soon as possible after the eggs are hatched, as feeding tends to keep them quiet; otherwise many hens will leave the nest. In most cases it is best that the hen remain on the nest and brood the chickens for at least 24 hours after the hatching is over.

Powder the hen with a good insect powder before moving her and the chickens to the brood coop. The hen should be dusted every two weeks or as often as necessary until the chickens are weaned. If lice become thick on the chickens, or if they are troubled with "head lice," a very little grease, such as lard or vaseline, may be applied with the fingers on the head, neck, under the wings, and around the vent. Great care should be taken, however, not to get too much grease on the chickens, as it will stop their growth and in some cases may prove fatal.

The brood coop should be cleaned at least once a week and kept free from mites. If mites are found in the coop, it should be thoroughly cleaned and sprayed with kerosene oil or crude petroleum. From 1 to 2 inches of sand or dry dirt or a thin layer of straw or fine hay should be spread on the floor of the coop. Brood coops should be moved weekly to fresh ground, preferably where there is new grass. Shade is very essential in rearing chickens, especially during warm weather; therefore, the coops should be placed in the shade whenever possible. A cornfield makes fine range for young chickens, as owing to cultivation of the ground, they get many bugs and worms and have fresh soil to run on most of the time and enjoy abundant shade.

All the chickens should be toe-punched or marked before they are transferred to the brooder or brood coop, so that their ages and breeding readily can be determined after they are matured. Farmers frequently keep old hens on their farms and kill the younger hens and pullets, because they are unable to distinguish between them after the pullets have matured.

HOW TO TRAP A SKUNK

Skunk are not as wary and therefore less difficult to trap than the other furbearers. In my experience I have found these methods to give the best results.

The best place to set traps for skunks is at the entrance of their dens. Dig a hole large enough for the trap and cover it with dirt, grass or leaves. It is best to set the trap back in the hole a distance so as to lessen the chances of catching a dog. Fasten the chain to a stone or stake and be careful that it is stretched out its full length away from the hole, since if the skunk is allowed to pull the trap back in his den you are apt to have trouble in getting him out.

Another way, when the dens cannot be found, is to take some rocks and build up two little walls about one foot high and ten inches apart. Lay a few sticks and leaves over it, leaving each end open so that Mr. Skunk can see through. Place a piece of bait—rabbit, corn, sparrows, mice, etc.—in the center of this tunnel, then set a trap at each entrance. No skunk will pass this set by and fail to get caught.

Skunks can be killed and prevented omitting their scent by shooting them through the center of the neck with a rifle or by breaking their backs with a long pole. Be careful not to cut deep when skinning and there is no danger from the scent. The odor can be removed from hands or clothing by the use of kerosene.

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.
BATES & SONS
Provo Utah

Save Grain For Human Food

Feed your livestock
COTTONSEED CAKE
AND
SOY BEAN CAKE
The best and cheapest food
Write us for prices
Globe Grain & Milling Co.
302 Kearns Building,
Salt Lake City, Utah.

Better anticipate your requirments now.
Cotton Seed Cake—Corn
Sunripe Stock Food—Hay
BROWN BROKERAGE CO.
Ogden, Utah.

Richard's Durocs Won
14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.
YOUNG STOCK FOR SALE
Richard Live Stock Co.
Virginia, Idaho.
"Home of the Champion Durocs"

KESKO FARM
Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers
also
100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make you acquaintance. See these animals before buying elsewhere.

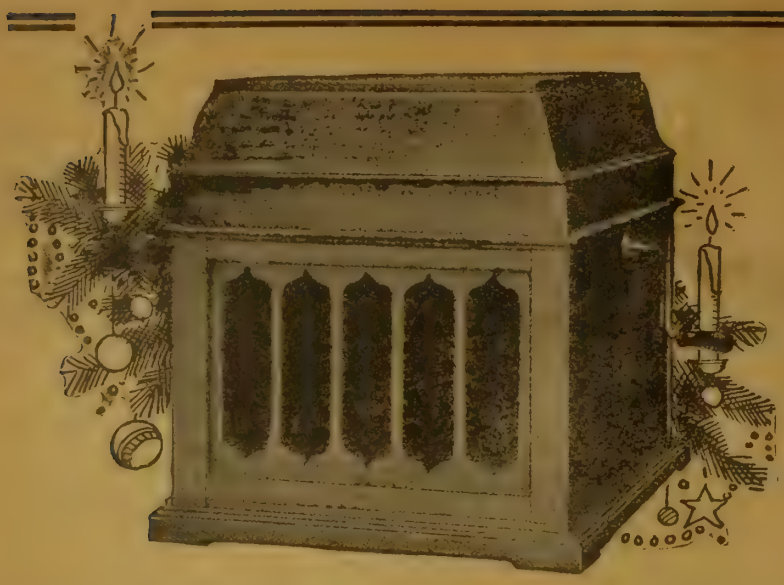
SEEDS WANTED
We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.
Mailing bags for samples sent fr .
THE MANGELSDORF SEED CO.
Atchison, Kansas.

FOR SALE
Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.
H. E. WALKER
Box 964, Salt Lake City, Utah.

BULLS FOR SALE
Two registered Holstein bulls of serviceable age. From dams producing 601¼ and 607½ lbs. butter in [illegible] year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.
H. H. STIYER
Buhl Idaho

FOR SALE AT THE KESKO FARM
15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.
A HAMPSHIRE DOWN RAM lamb.
Also Registered ANGORA GOATS of both Sex.
I will take your Liberty Bond as part pay on the above.
Also some nice MULES.
I can furnish you with grade steers and heifers of any breed if you will let me know what you want.
JAMES G. OLSEN
Ephraim Utah

Save The Fruit
You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and for preserving and canning will
USE "TABLE AND PRESERVING" SUGAR



What kind of music will there be in *your* home this Christmas?

CHRISTMAS AND MUSIC are inseparable. You cannot think of Christmas without thinking of music—all kinds of good music. What kind of music will there be in *your* home this Christmas? What instrument and what voices will entertain you?

Have you ever stopped to realize that all voices, and all musical instruments, excepting one, have their limitations? As wonderful as a piano is, it can give you only piano music; as beautiful as an organ is, it can give you only organ music; as marvelous as the human voice is, it can only sing. It is the same with the violin, the cornet, the accordion or any other instrument which you might have in your home or might consider purchasing. These are excellent in their way, but we are sure you will agree that none of them is completely satisfying.

It is different with the New Edison Diamond Amberola. It has no musical limitations, for it is all voices and all instruments in one and it brings into the home all kinds and classes of music, from the greatest of operatic numbers sung by the most famous of singers to the simplest of popular and comic songs sung by the cleverest performers in their line; from the performances of great military bands and symphony orchestras to the snappy music of the ever popular banjo.

The New Edison Diamond Amberola is not an instrument that you must forbid the children touching for fear of putting something out of order. Even a very young child can readily learn to operate this marvelous instrument, for it is simplicity in itself and is not readily put out of order, and the Blue Amberol records are almost unbreakable and unwearable. With the Amberola you do not even have to bother to change needles. There are no needles to change. Instead of needles Mr. Edison uses a GENUINE DIAMOND, ground and polished to fit perfectly in the grooves of the record, and so perfectly round and smooth that it has no effect on the record. As you know, a diamond never wears out. To operate the Edison Amberola all that is necessary is to put on a record and lower the reproducer so as to bring the diamond stylus (reproducer point) into contact with the record. Besides keeping the Amberola wound up and oiled, there is nothing else to do.

Read Our Liberal FREE TRIAL OFFER

It is Mr. Edison's wish that you hear his Diamond Amberola in your home. In order that Mr. Edison's wish should be fulfilled, we will place a New Edison Diamond Amberola and a choice selection of Blue Amberol records in your home for three days. Play them to your heart's content, invite your friends in to enjoy the music with you. At the end of three days tell us that you want to buy the instrument and records for cash, that you want to buy them on terms, or that you do not care to purchase at that time and request us to call for the Amberola and the records. We leave it entirely to you whether you keep the instrument and records or whether you send them back. Whatever your decision, we shall consider the matter at an end. You will be under no obligation whatever. We will be the ones to feel obligated to you for permitting us to place the instrument and records on trial in your home. Thousands of families throughout America are enjoying these free trials because of Mr. Edison's desire that no one should miss hearing his marvelous invention. Why not you? You are just as much entitled to the opportunity as anyone else, and there is no reason why you should not take advantage of it. When requesting your free trial, please use the coupon at the bottom of this page.

Send for the Beautiful Amberola Booklet. It is FREE

The Music You Get When You Own an EDISON AMBEROLA

Music was never more welcome in the American home than it is today. Home has never meant more to Americans than it does today. With some of our boys at the front and many preparing to go, the tenderest and deepest emotions surge through our souls. It is then that nothing is more appropriate than good music as the companion of our leisure hours. Whatever your tastes, whatever your mood, there are many selections in the Blue Amberol Record Catalog to suit—beautiful old hymns that seem to just lift you out of your immediate surroundings to a higher plane where the spirit is free and unfettered by the irksomeness of the daily routine—thrilling band records that just make you feel like getting up and marching around the room—noble patriotic numbers that would stir the heart of a traitor—tender old and new songs and ballads that go straight to your heart—majestic grand opera that appeals to the deepest of human emotions—lively dance pieces, ragtime and funny records—entertainment of all kinds for young and old.

So that you may have an idea of the many wonderful selections to be found in the Blue Amberol Record Catalog, we have picked a few here and there and they're printed below. Look them over. You are sure to find many of your favorites.

FOR CHRISTMAS

[illegible]
[illegible]
[illegible]
[illegible] Days
[illegible]
[illegible] Clear
[illegible]
Night B fore Christmas
Old Jim's Christmas Hymn
O Little Town of Bethlehem
[illegible]
Ring Out the Bells for Christmas
King Cole Wild Dance
Santa Claus
Sweet Lady
Star of Bethlehem
Sweet Christmas Bells
When Christmas Bells [illegible]

SACRED

Ave Maria
Beautiful Isle of Somewhere
Crucifix
God's Love, His Mercy Brightens
Jesus Ah Comfort
Land of Ages
Face to Face

QUARTETS

The Bridge
Come When My Love Lies Dreaming
Darling Nelly Gray
Uncle Ben's Lover
My Old Kentucky Home Old Folks at Home
[illegible]
[illegible]
When Irish Eyes Are Smiling
[illegible]

HAWAIIAN

Aloha Oe (Farewell to Thee)
Kamehameha March
Medley of Hawaiian Airs
Moani Ke Ala
Waialae (Waltz Song)
Koleo
Pelupe

BANDS

At the Mill March
Battle of the Marne—Descriptive
Benediction of the Poignards—Huguenots
Glowworm
Humpty Dumpty Rag
In the Clock Store—Descriptive Fantasia
Jolly Coppersmith—With Anvil, Singing and Whistling
My Old Kentucky Home Fantasia
Old Folks Dancing in Review

INSTRUMENTAL SOLOS

I Hope I Don't Intrude, Bells
King of Air March, Xylophone
Kiss Waltz, Saxophone
Lullaby—Jocelyn, Cornet
Medley of Southern Airs, Banjo
Old Black Joe, Piano
Peg o' My Heart, Violin

DANCE

Carnival One-Step
Destiny Waltz
Good-Night Waltz
Money Musk Medley Virginia Reel
Oh, You Silv'ry Bells Medley Two-Step
Old Comrades March
Stop! Look! Listen! Fox Trot
Ticking Love Taps Fox Trot
Leg of Mutton One Step

GRAND OPERA

Elisir d'Amore—Una furtiva lagrima
Faust—Air des Bijoux
Pagliacci—Prologue
Rigoletto—Caro nome
Trio from Faust
Bridal Chorus from Lohengrin
Mignon—Ah! Non credevi tu

VOCAL DUETS

All Aboard for Blanket Bay
As We Parted at the Gate
Auf Wiedersehen—The Blue Paradise
Barcarolle (Oh, Lovely Night)—Tales of Hoffman
Every Little Movement—Madame Sherry
For You
Good-Bye, Good Luck, God Bless You
Land of Golden Dreams
I Was Never Nearer Heaven in My Life

PROUDFIT SPORTING GOODS COMPANY, OGDEN, UTAH.

EDISON DEALERS WHO GIVE FREE TRIALS

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ALBION—E. M. Snodgrass
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HAILEY—J. J. Tracy
IDAHO FALLS—Alma Marker
IDAHO FALLS—Geo. M. Scott
KIMBERLEY—Stowes Pharmacy
MALAD—B. B. Davis
MT. HOME—F. J. Pilliner
MONTPELIER—Thor C. Nielsen
NAMPA—Tom Poole
POCATELLO—H. H. Whittlesey
PRESTON—Foss Bros.
ST. ANTHONY—Ashcraft Jewelry Co.
SODA SPRINGS—C. A. Piar
TWIN FALLS—Colwell & Sparger

UTAH

BINGHAM CANYON—M. L. James
BRIGHAM CITY—Hansen Furniture Co.
CEDAR CITY—Leigh Furniture Co.
FAIRVIEW—Chas. Peacock
LOGAN—Harris Music Co.
MANTI—W. M. Taylor
MONROE—Monroe Drug Co.
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PANGUITCH—Elko Pharmacy
PARK CITY—Paul Bros & Wilson
PAYSON—C. E. Smith
SALT LAKE CITY—Keith O'Brien Co.

COLORADO

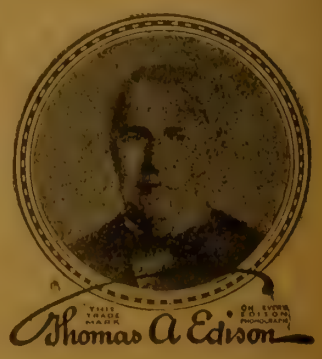
GRAND JUNCTION—H. W. Vorbeck

WYOMING

KEMMERER—Kemmer Hdw. and Furniture Co.
ROCK SPRINGS—Henry Chipp.
AFTON—Burton Mercantile Co.

NEVADA

ELKO—Dupont Pharmacy
ELY—Ira J. McKnight



WRITE YOUR NAME AND ADDRESS IN MARGIN BELOW AND MAIL COUPON TO NEAREST EDISON DEALER

Please send me the Amberola Book and particulars about your FREE TRIAL

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 18 — LEHI AND SALT LAKE CITY, UTAH. — DECEMBER 1, 1917

The Necessity of Increased Meat Production

After a short period of war experience we are learning many things that it will be necessary for us to do in order to win. At the time the war began we were only producing enough meat for our own consumption. The war has made it necessary for us to help our allies by feeding the people of Europe and the soldiers who are doing the fighting. The great demand and the desire on the part of the United States to help has greatly increased the exports of pork products and today ham and bacon are among our luxuries instead of among our necessities.

In Europe the supply of livestock is growing less all the time. To date the war has caused a slaughter of 28,000,000 cattle, 54,000,000 sheep and 32,000,000 hogs.

What they will be called upon to do in the future in sacrificing more of their livestock no one seems to know.

America can help and must do her part by producing more livestock. Under government control the price of meats will be made so that the producer is promised a profit.

Newspaper reports tell us that the Huns are short of fats and oils and we look upon this as one of their weakest points. Why not reverse the thought and say with plenty of meats, fats and oils they will be one of our greatest helps to win the war. Fats must be grown and the hogs is the one animal that can do it—time and quantity being considered.

From the best of authorities we are told that not only are we about one fifth short in the number of hogs, but they are smaller than usual.

We must realize the absolute necessity of producing more livestock. We are confronted by a shortage and fighting a military power that has shown wonderful resourcefulness and little or no mercy. Who wants such a power to control us—no true American—then we must win and every thing possible should be done to make the conflict as short as possible.

The Food Administration who are making a very careful study of the livestock shortage seem to realize the situation. Mr. Hoover makes the following statement in regard to the hog problem:

If we are to maintain our supplies to the allies, we have only one of two courses, or a combination of both: First, we must reduce our consumption of pork products to the prewar normal or better; and, second, we must increase our production. If we discontinue exports, we will move the German line from France to the Atlantic seaboard.

Pork products have an influence in this present world situation wider than one would ordinarily attribute to them. The human body must have a certain amount of daily intake of fat. Whether this fat is by means of dairy products, by vegetable oil, or by pork products becomes a secondary question in time of complete national stress, because pork products to some degree will substitute for the other fats.

Increased production in pork fats can be accomplished with a great deal more rapidity than increased production of dairy products and on a

(Continued on page 14)

Utah Will Increase Her Number of Hogs

Utah will do her part and next year will see an increase in the number of hogs in our State.

With the assurance from the Federal Food Administration that the price of hogs will be based on the cost of production and that the hog growers will be allowed a reasonable profit for his work, hog production will be greatly increased.

The Food Administration have promised to do everything in its power to hold the price of hogs at Chicago at not less than $15.50. At this minimum price farmers can produce hogs at a profit under present conditions.

There are two reasons for every one helping in this increased production of hogs. It will be a profitable thing to do and second a patriotic duty of every one to help because of the aboslute need at this time of more meats and fats.

The call is now for every one to save their brood sows. Do not allow one to be killed that can be bred and produce a litter of pigs next spring. It is hog killing time now and this appeal of the State Food Administrator and Agricultural College is being sent out now with the hopes that many of the sows that might have gone to the block will be saved and bred to help in the increased production next year.

Now is the time to act. All sows should be bred. Gilts of a reasonable age should also be bred. This will help to produce a greater meat supply which is the urgent need of our nation in the present war.

Where it is possible a good purebred boar should be used. This will help to bring a more uniform lot of pigs and an upgrading of the breeding herd.

The Utah Farmer is going to co-operate with the Agricultural College and State Food Administration and will publish from time to time helpful suggestions as to the best kind of feed to use and care of the growing hogs. A government specialist in hog production will be here soon and will spend all his time in Utah. Plans are being made to help in every way possible the increased production of hogs.

It is true we do not have the corn in such large quantities as some of our eastern states but we have many advantages over them and can produce hogs as good and at as low a price as any state.

On another page of this paper will be found a coupon which every farmer is asked to fill out and forward to State Food Administrator, Box 1788, Salt Lake City. Show your willingness to co-operate and fill out the blank and send it at once. We must all work together to win this war, everyone must do his "bit."

This information will help in the campaign spoken of in the appeal made by Mr. Armstrong and Mr. Caine.

Utah has always done her part in everything she has been asked to do and we are sure in this emergency call our farmers will respond as they have done before.

In this call for help the hog grower can make money and at the same time do a patriotic duty and help feed the people of Europe.

To The Farmers of Utah

Stop killing the brood sows and allow them to do their full war duty by keeping them in the army of producers.

The country is facing a very serious situation as regards to pork production. Millions of pounds of pork products are needed to feed not only our own army but the starving people of Europe.

Europe is short over 30,000,000 of hogs with no chance of an immediate increase. Shortage in the United States is over five millions and the breeding stock of Utah is the lowest it has been in years.

It must be built up and we must save the sows to do it. High prices for our hogs are assured as the Federal Food Administration has promised us that the price will be stabilized as far as it is within its power, at a minimum of $15.50 on foot at Chicago.

This appeal is made to meet the existing emergency and will be followed immediately by a definate campaign to place the surplus sows with farmers who can raise them.

We are also working on plans to secure a limited amount of money to give assistance to purchasers where it is needed.

W. W. ARMSTRONG,
State Food Administrator.
JOHN T. CAINE III,
Director of Extension, Utah Agricultural College.

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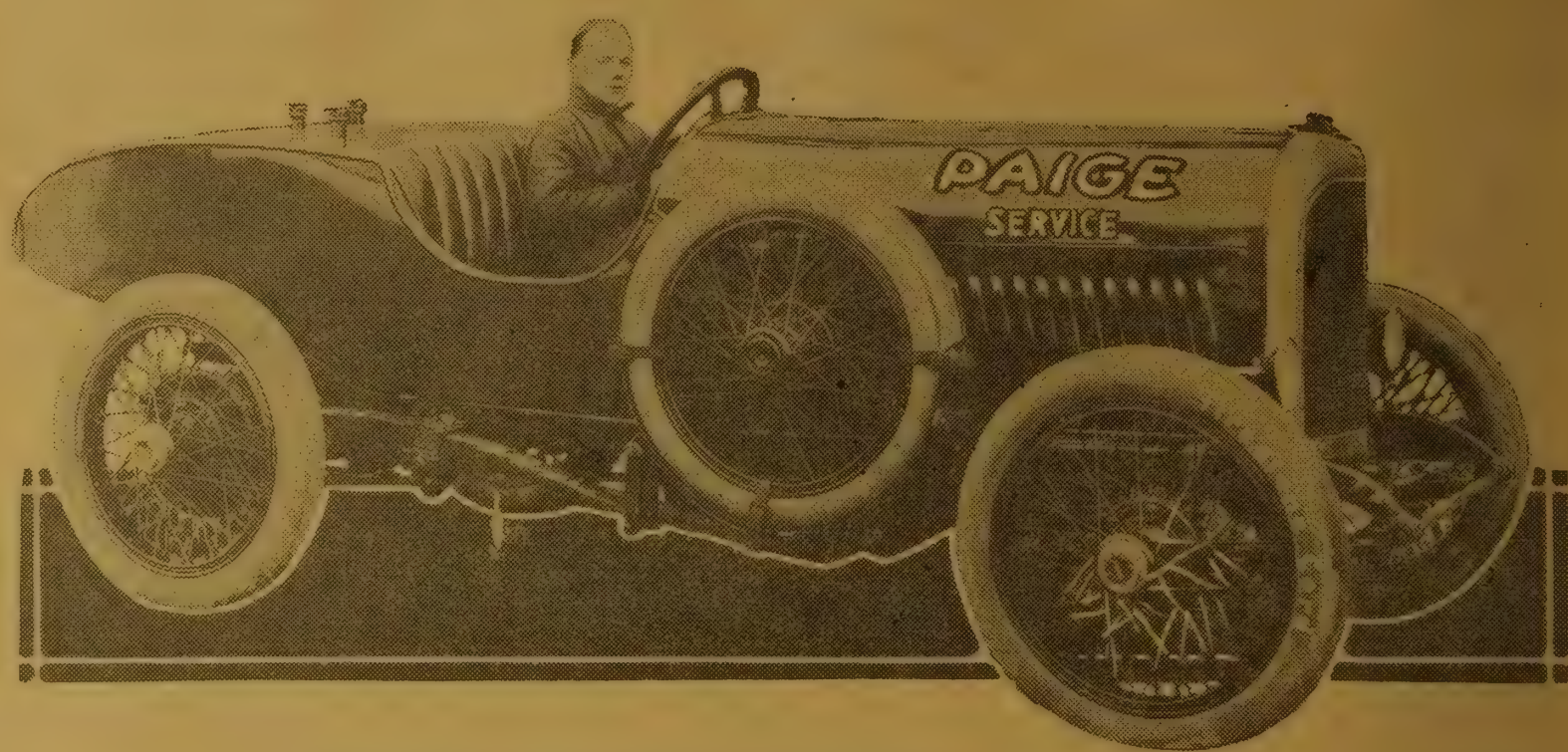

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Yours truly,
PAIGE MOTOR SALES CO. OF UTAH.
J. E. WINDLE,
Sales Manager.

Last week the "Yellow Streak" called and adjusted cars at

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RICHFIELD.

READ THIS

Richfield, Utah, Nov. 24, 1917.
Paige Motor Sales Co. of Utah.
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Sirs:

Our Paige car gave us splendid service for one and a half years up to about two months ago when we had trouble with it and we took it to the garage when they kept it two or three weeks and when we got it out, the car was worse than it had been and would not run, and we had put it up expecting it to stay there for the winter. When your Mr. B. R. Burrows came down here he looked it over and had it in good running order in a very short time and we will recommend Mr. Burrows and the Paige car service to any Paige car owner. Thanking you very much I am,

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VOLUME XIV. LEHI, UTAH, SATURDAY, DECEMBER 1, 1917 No. 18

Demonstration of Successful Beet Toppers

James W. Jones, Agriculturist Sugar Investigations U. S. Department of Agriculture.

"Necessity is the mother of invention." The old axiom was never more true than in its application to the sugar beet harvester. There is nothless than a sugar famine on. In this, as in some other respects, this war is running true to tradition.

Ever since the days of Napoleon, war has developed the gaunt spectre of the sugar famine. Every war of consequence, for centuries have depleted sugar stocks and caused the soldiers as well as the populace to exist upon a short ration of sweets of all kinds.

The destruction of the cane plantations in the south during the Civil war brought the people of the United States face to face with the great economic problem of not only producing a goodly quantity of domestic sugar but it also emphasized the necessity for a wider distribution of the sugar producing areas.

The destruction of the southern plantations of the south and the freeing of the negro laborers which caused the south to experience many agricultural difficulties brought out the importance of the temperate zone of the United States making special effort to produce a larger portion of our sugar requirements. The result was the development of the beet sugar industry. Cane sugar production has also continued to grow but the beet sugar industry has developed much more rapidly.

The central and northern states farmers have been accustomed to hitching four and six horses at a time. The day of onehorse farming has slipped by forever; the two horse team has been doubled and the "man power" has been doubled by the introduction of improved machinery that permitted each driver to accomplish higher efficiency. Now comes the day of the tractor when the "man power" is emphasized even more. With the sugar beet industry, its greatest hindrance has been the lack of "power" as a substitute for the human hand work. The cultivator has been enlarged and improved until four rows of beets are cultivated, instead of only one and it is conceded that the four-row cultivator, with very few exceptions, does more efficient work than did the two or one row cultivator.

The greatest hindrance to the expansion of sugar beet acreage, with the average American farmer was the harvesting of the crop in the fall. The beet needs cool, frosty nights to bring the root to full maturity and properly develop the sacharine content and then, in many districts, the hard freezing weather is liable to follow the frosty nights so closely that the period of safety for harvesting is very short. That means that the crop needs to be harvested in a short period of time. With only hand labor equipment, the task was hard and irksome. It meant back aches. The job was unamerican, to some of the growers. The American farm has led the farms of all other countries for labor saving devices, why not also in beet harvesting? Was the process so intricate that only human hands could do it or was our inventive talent directed in other channels to such an extent that the beet crop was neglected?

The great agricultural machinery manufacturers did not devote any of their skill and facilities toward the problem. Then what must be done? The beet grower with cold fingers and acheing back determined that the task was worth while. There was a great need. The task was worthy of some's earnest effort. No need to wait for "the other fellow" to do it for the beet grower had waited patiently for half a century and was still waiting with each recuring autumn bringing forth no definite relief. Now and then would come the report that some remote district had been at work on a beet harvester but the final report did not offer reassurance that could be relied upon. Then the farmer must do it.

He had invented other farm labor saving devices and he could do it again.

John Devey and his two sons were farmers and beet growers and they had a good deal of mechanical ability. The senior Devy worked as an expert mechanic for one of the sugar companies and he had access to well

(Continued on page 10)

This picture shows the mechanical beet topper and a large number of beet growers who gathered to witness the field demonstration at Lehi. As the illustration shows the topper is very simple but still it does the work very successfully. Every man who was present was pleased with the machine and the work it did. Hand labor is the big problem in producing beets. With a beet topper and a digger that will load them into wagons without touching them by hand, it will do more to stimulate increased production than possibly any one thing.

Advantages of Bonding A Drainage District

At the present time a great deal of interest is being taken in the drainage of waterlogged lands.

How and where to secure the money is one of the problems that often delays such work.

In an interview with Mr. R. A. Hart, Senior Drainage Engineer of the United States Department of Agriculture, some helpful information was obtained on the advantages of bonding a drainage district.

The Utah Drainage Statutes provide for the issuance of bonds to pay the cost of reclamation by drainage, under district organizations. The purpose of such a bond issue is to obtain a sufficient fund at once to cover the expenditure involved, so that material may be purchased in quantities and so that a contract may be let for the construction work and the reclamation be expedited. It is a matter of fact that the increase in crop production from lands reclaimed by drainage, will in a very few seasons, and sometimes in a single season, pay for the entire cost of drainage. It is desirable therefore, that the reclamation be accomplished as soon as possible, and in the case of a drainage district there is the further consideration that in the interest of equity all of the lands within the district shall be reclaimed at approximately the same time.

As a rule the land owners themselves are not financially able to pay the cost of reclamation at once, and contractors cannot be expected to shoulder the financial burden. Loans through the usual channels are generally not satisfactory and are often difficult, if not impossible to obtain, when lands are in a condition requiring reclamation by drainage.

The customary method of securing funds for agricultural improvements is through mortgages. Such a method of financing is not well suited to the needs of drainage reclamation. In the first place, bankers or loan companies are loth to loan more than a certain percent of the appraised value of the land. Lands in need of drainage have usually been reduced to such a condition of non-productivity that their market value is greatly depreciated, and in consequence it is often not possible to obtain sufficient funds, through an ordinary mortgage loan to cover the cost of drainage. Moreover, it frequently happens that there is already a mortgage on the land, and the case is very unusual in which a banker or loan company would care to advance sufficient funds on a second mortgage as security.

The interest rate on such loans is usually high. The terms may, or may not, be satisfactory. The interest rate may be subject to variation and there is always the possibility of foreclosure in the event that the security appears to be depreciating in value to a serious extent, or if the interest be not paid.

After drainge reclamation it is frequently necessary to raise additional funds for the purchase of implements, seed, etc., fencing of land, employment of labor, purchase of farm animals, and installation or change in irrigation or other structures. With a mortgage on the land for drainage purposes, it might be difficult to raise funds for these subsequent needs.

The situation is improved to some extent by the inauguration of the Federal Farm Loan service, but not all of the objections are removed. The interest rate is lower and the term loans is much longer than ordinarily, but as in the case of other loans only a percentage of the appraisal value of the land may be secured, and the existence of the mortgage would make it difficult to finance other needs.

Under a bond issue all of the objections above referred to, are removed, while none of the advantages are lost, and in addition numerous other advantages accrue. Drainage bonds usually carry a comparatively low interest rate, and this rate is not subject to variation, after having once been fixed. The bonds constitute a long time obligation, generally ranging from ten to twenty years. They do not interfere with existing mortgages, nor with subsequent mortgages, since they are a tax lien upon the land. Drainage bonds may be issued on lands burdened with one or more mortgages, or mortgages may be issued on land subject to a bond lien. As a matter of fact, the same land after being bonded for drainage is considered a better security than before.

Drainage bonds are issued on the

(Continued on page 7)

DAIRYING

WET BEET PULP AS A DAIRY FOOD

LeRoy W. Hillam.

The feeding of wet beet pulp to dairy cows has recently been quite an issue with the farmers of the sugar beet producing communities. Lately more beet pulp than has ever before been fed has been used by the dairy farmers to replace hay and at the same time to form a succulent food in the dairy ration. The practicability of wet beet pulp as a dairy food has not as yet been thoroughly ascertained, but records of The Wellsville Cow Testing Association show that if fed within the proper limits, it has been of a beneficial nature in the balancing of rations, the providing of a succulent food, and the increasing of milk production.

Quoting 'Henry's, Feeds and Feeding,' "100 pounds of wet beet pulp contains 10.2 pounds of dry matter, and has .5 pounds of crude protein, and 7.7 pounds of carbohydrates." From these figures we see that one pound of corn silage may be replaced by 2 pounds of wet beet pulp, and one pound of alfalfa hay may be replaced by 9 pounds of wet beet pulp. One pound of wheat straw contains nine times as much dry matter as one pound of wet beet pulp; has one and one half times as much digestible protein and four and one half times as much carbohydrates. The dry matter of wet beet pulp is equal to that of roots in feeding value and the pulp can be used in the same manner as are roots for feeding farm animals. The wet beet pulp is relished by dairy cows and some animals will eat as high as 110 pounds daily. As a general rule the flavor of the milk is not affected by feeding pulp.

Maercker, in the United States Department of Agriculture, Bureau of Chemistry, Bulletin 52, found that owing to fermentation, ensiled wet beet pulp lost rather more than one fourth of it's total nutrients. Such heavy losses teach us that where possible the pulp should be dried before being stored. Where it cannot be dried it may be ensiled the same as corn forage. It keeps quite well if merely piled in large heaps, as the outside mass on rotting protects the interior and preserves it properly. A good process of preserving pulp is with alternate layers of straw or a coarse roughage of some kind. in shallow, well drained, pits dug in the ground. The pitted mass extending above the ground should be covered with straw and earth to keep out air and frost and aid in the preservation.

From the records of the Wellsville Cow Testing Association of Wellsville, Utah, in which 45 herds were fed wet beet pulp as part of their rations, it was found that from 30 to 35 pounds of wet beet pulp per day, per 1000 pounds of live weight, was the best proportion in which to feed it to milch cows. Some dairymen fed from 70 to 100 pounds of pulp per day and obtained exceptional results for a short time, in many cases increasing the flow of their herd fully one third. These results however, were not lasting as the excessive amount of pulp caused a tendency for the cows to increase in flesh, and in from four to six weeks caused the milk flow to drop even lower than in the original state before the feeding of pulp was commenced.

Where good alfalfa hay and a good quality of grain was fed, beet pulp had but little effect upon the dairy ration, other than to act as a roughage. Where no grain was fed and about 30 pounds of pulp per day fed with good alfalfa hay, an increase of approximately one fifth in the milk flow was noticed. In a few cases where hay was scarce, milk cows were forced to live on beet pulp and wheat straw and in quite a few instances produced a good flow of milk.

In a comparison of the following tables in which four herds, each fed a different ration are tabulated, we expect to find the same curve for decrease of yield due to length of lactation period, and for the increase due to the freshening of some of the cows. This curve however, will be about the same for each group.

In table No. I, we find a herd that was fed only alfalfa hay with no grain or succulence of any kind. In this table we find the same even yield of both milk and butter fat for an average of the herd. We find each individual cow slowly goes down in her production as the lactation period increases.

In table No. II, we find that where alfalfa alone was fed the first month, the average was low. The second month when 32 pounds of wet beet pulp was added to the ration we find a marked increase in both milk and fat averages. These averages remain high all of the time the pulp is being fed. At the beginning of the sixth month when no pulp was fed we find a slight drop in the yield of both fat and milk. This however, is made up again when the cows are put on pasture.

In table No. III, where grain and alfalfa are fed the first month, we find a high average. Upon the addition of pulp to the ration we find a slight increase in milk and fat. This high average is more or less predominant throughout the whole period. At the beginning of the sixth month when pulp is dropped and grain and alfalfa fed we find but little drop in milk and only a slight drop in fat. Upon pasture we find a lower average yet, perhaps due to the lengthening of lactation periods. The high, even, averages in this table are especially noticable.

In table No. IV, we find a fairly medium average the first month on alfalfa alone. Upon the addition of 70 pounds of pulp daily to the ration we find a wonderfully marked increase in both milk and fat. However, the third month the averages are lower than the first, due to the excessive pulp feeding. The fourth month shows even a much lower drop, with the same pulp ration. The fifth month, with alfalfa as the only food, we find a general increase in milk and fat with a general lowering of averages on the same food for the sixth month. The seventh month on pasture shows a wonderful improvement and is the highest average of any month. This table shows us that alfalfa alone is not a sufficient food and that 70 pounds a day of pulp is too much.

TABLE I—ALFALFA ONLY

Cow	Feed	Alfalfa		Alfalfa		Alfalfa		Alfalfa		Alfalfa		Alfalfa		Alfalfa	
	Month	November		December		January		February		March		April		May	
		Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat
1		576	25.3	512	22.5	418	18.4					804	29.7	828	[illegible]
[illegible]		591	23.6	623	28.7	521	25.0	414	19.9	425	20.8			1054	46.4
3		951	41.8	1125	49.5	988	41.5	[illegible]	32.4	1038	37.4	576	24.2	217	0.1
4		543	22.3	527	21.6	465	19.5	437	20.1	468	21.5	414	19.0	[illegible]	[illegible]
5		396	17.4	465	21.4	462	21.7	409	18.0	[illegible]	24.6	459	21.6	[illegible]	22.7
[illegible]		1173	42.0	1209	39.9	1156	38.1	994	31.8	1237	41.9	1005	33.2	989	[illegible]
7		642	23.1	580	25.7	583	25.6	604	20.9	283	24.5	[illegible]	23.2	[illegible]	[illegible]
8		989	40.1	1004	42.2	826	35.5	680	29.9	818	33.5	708	32.6	750	34.5
9															
Total		5841	238.6	6045	251.6	5419	225.3	4270	172.8	5115	204.2	4518	183.5	5258	223.0
Average		730	29.8	756	31.4	677	28.2	610	24.4	731	29.2	[illegible]	26.2	657	27.9

TABLE II—FED 32 POUNDS PULP DAILY

Cow	Feed	Alf. Only		Alf. Pulp		Alf. Pulp		Alf. Pulp		Alf. Pulp		Alfalfa		Pasture	
	Month	November		December		January		February		March		April		May	
		Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat
1		432	19.4	468	23.4	642	30.8	468	20.6	381	18.1	252	12.1		
2		765	28.3	893	32.1	874	37.6	[illegible]	27.3	450	18.9			1011	49.5
3		549	22.5	602	28.1	722	37.5	498	23.4	459	23.9	[illegible]	19.1	[illegible]	27.4
4		216	12.9					756	25.7	691	42.2	615	29.5	471	29.2
5		444	18.2	515	21.1			944	45.3	1246	42.4	1188	38.0	1014	32.4
6		963	36.6	949	39.8	1100	48.4	876	38.5	874	33.2	[illegible]	38.2	772	33.2
7		219	10.5	291	13.4			956	35.3	[illegible]	33.8	876	31.5	[illegible]	31.5
[illegible]		609	29.2	577	30.0	648	40.2	459	25.7	515	28.8	417	24.2	304	18.8
9				1504	63.2	1504	63.2	1100	50.6	1091	49.1	1065	51.1	[illegible]	44.9
Total		4197	177.6	5699	251.1	5490	257.7	6625	292.4	6597	290.4	5697	243.7	[illegible]	266.9
Averaeg		524	22.2	712	31.4	915	42.3	736	32.5	733	32.3	712	30.4	[illegible]	33.4

TABLE III—FED GRAIN, 32 POUNDS PULP, ALFALFA.

Cow	Feed	Alf. Gr		Alf. Gr. P.		Alf. Gr. P.		Alf. Gr. P.		Alf. Gr. P.		Alf.Gr.		Pasture	
	Month	November		December		January		February		March		April		May	
		Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat
1		1098	37.3	1104	40.8	976	37.0	818	39.3	905	35.3	771	28.5	651	22.8
2		561	25.4	584	23.9	549	23.6	448	19.7	487	21.4	423	22.0	428	20.5
3						756	25.7	664	22.6	834	26.7	774	25.5	797	25.5
4		642	24.4	533	20.9	508	20.3					1203	38.5	1100	28.6
5		1179	35.4	1150	36.8	1287	41.4	899	31.5	1165	41.9	[illegible]	31.0	846	28.8
6		1245	42.3	1252	50.1	1243	43.5	1039	38.4	1072	40.7	1011	38.4	1125	39.4
7		924	33.3	1008	39.3	1184	40.2	816	26.1	1014	35.5	[illegible]	33.9	831	29.1
8		1410	47.9	1290	37.4	1110	33.3	739	20.7	679	20.4				
[illegible]															
Total		7059	246.0	7921	249.2	7613	265.0	5423	198.3	6156	221.9	6147	217.8	5778	194.7
Averag[illegible]		1008	35.1	1133	35.6	952	33.1	777	28.3	879	33.1	878	31.1	825	27.8

TABLE IV—FED 70 POUNDS PULP DAILY.

Cow	Feed	Alf. Only		Alf. Pulp		Alf. Pulp		Alf. Pulp		Alfalfa		Alfalfa		Pasture	
	Month	November		December		January		February		March		April		May	
		Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat	Milk	Fat
1		492	15.7	484	19.4	378	16.2	291	13.4					1116	35.7
2		678	27.8	1004	40.2	732	28.6	563	21.4	632	24.6	492	21.6	629	25.8
3		396	23.8	412	19.8	254	13.5	143	8.3					1141	41.2
4		585	26.9	549	24.2	350	15.8	202	9.7					1271	43.2
5		195	5.3							955	44.9	783	37.6	964	33.6
6				1256	48.5	803	32.1	675	27.0	716	32.9	594	26.7	862	37.9
7		1083	46.6	1283	43.3	874	35.0	686	26.1	806	32.4	624	26.2	698	27.2
8		834	30.9	893	35.7	756	32.5	638	25.5	775	34.1	[illegible]	27.1	1017	41.7
9						648	27.2	518	22.3	542	25.5	[illegible]	19.5	666	24.0
Total		4263	177.0	5881	231.1	4795	200.9	3716	153.7	4426	194.4	3588	158.7	8354	310.3
Average		609	25.3	840	33.0	699	25.1	464	19.2	738	32.4	598	26.4	928	34.5

From the above tables we may conclude that from 30 to 35 pounds of pulp a day is the best amount for the dairy cow, and that the most uniform production comes from feeding pulp, grain, and hay, in a balanced ration.

A few objections to the feeding of wet beet pulp are, the difficulty in protecting it from frost, as frozen pulp is not relished and in most cases

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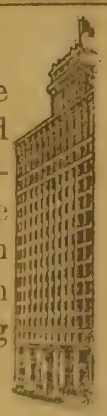
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is not eaten by cows. From the records of the Wellsville Cow Testing Association it appears that beet pulp acts as a de-appetizer for other food and at the cessation of feeding it causes a drop in the flow of milk and in a majority of cases causes the animals to go off feed for a while, but they later, after a given period, come back to normal flow again. Beet pulp is relished very much by the dairy cow especially in the ripe stage and as a result when no beet pulp is fed it is a matter of considerable difficulty to get the cows to eat a normal amount of hay again. Where beet pulp has been fed and then discontinued and grain substituted in it's stead, as good and in many cases better results were obtained from alfalfa and grain alone. Pulp that has been frozen can be thawed out and fed to good advantage with the same results as the non-frozen pulp. More than 30 pounds of pulp a day causes a slight scouring of the animals.

Though nothing definite can be stated in regard to dairy cows, it is known that wet beet pulp causes inflamed and enlarged kidneys, and ulcerated and very often perforated livers in beef steers, where they are fattened upon it, and are receiving about 100 pounds per steer as a daily ration. Men who have fed beet pulp for two or three years claim that the acid formed in the pulp from fermentation and putrifaction causes fermentation and dissolving of the animal's teeth, and that it decreases the ability of the animal to rustle food in the pasture and to properly masticate dry roughage. From observation of the author in the Wellsville Cow Testing Association, this is not true and so far no bad results at all have been shown by the feeding of beet pulp to dairy cows.

In conclusion from the work of the Wellsville Cow Testing Association, the author would say that beet pulp is valuable as a roughage and succulent food, and a saver of food, and where fed with alfalfa alone it will increase the production to some extent; but practically as good results have been obtained with other foods and without beet pulp. Some difficulty was found in getting animals back to their feed when pulp was left out of the ration. So far no evil effect, other than a slight scouring have been detected through the feeding of it. A little trouble was experienced in teaching some cows to eat the pulp, but as a general rulé most of them greatly relish it after a few days of feeding. The most desirable amount of pulp is from 30 to 35 pounds daily. This gives the best results from all angles and causes fewer variations in the milk flow at the cessation of pulp feeding, and a change of rations.

WEIGH AS WELL AS TEST

At demonstrations of milk testing with the Babcock tester there is often the idea that if a man who runs cows will only try them out by the Babcock tester he will know just what must be done with each cow in the herd. That is right of course but there is more to it than the test.

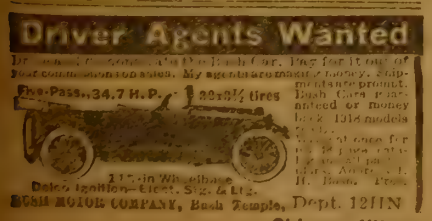
The milk scales tell almost as profitable a story as the test and it takes the two together to tell just where any cow stands for any length of time.

The tester will show butterfat in any cow's milk, but it will only be for perhaps one or two milkings. Maybe it is for four milkings. That is a good sample but even at that there are ups and downs to the test of any cow. The tester is the only thing that will find this difference of course.

But suppose that a cow gives one and a half gallons of milk at a time and it tests six percent on an average. Then suppose that another cow runs a test of say four percent on an average. Now the lower testing cow looks as if she ought to be weeded out. But then see what she produces in a day and maybe it won't be the thing to sell her after all. Maybe she will give two and a half gallons a day. Reckon that roughly at eight pounds to the gallon and the one produces twelve pounds a day and the other twenty pounds. Multiply the milk by the test and there is a little difference in favor of the low tester. These are made to order cows, but these things are happening all the time and will be happening for a long time to come.

The scales will keep tab on the pounds that a cow gives which counts a long way towards her yearly product. In fact it counts more than her test in a good many cases. I remember last year that I tested for advanced registry where a two year old had just made a world's record. She was not a high tester—her average I believe was slightly over four per cent, but she was a persistent milker. She never gave less than fifty pounds a day nor more than sixty pounds at any time during the year. If she had been short on the amount of milk her test wouldn't have helped her along very much, but even with a low test she got there because of the scales.

To the novice who has an idea of a perfect herd in a few years it will seem the thing at first to do away with the low testers. But if you are figuring on profits as well as working toward the ideal, then test carefully but don't forget to weigh what milk the cows give. You will find that there are some surprises in the herd and you will keep some for a while longer that you didn't intend to keep.—E. Ruskin.



PROTECT COWS' TEATS AND UDDER

M. H. Reynolds.

Prevention of injury to cows' teats and udders is most important. Injury may be caused by dragging over high door sills, by hurrying the cows from pasture when the udder is full, and by allowing them to lie on cold, bare cement floors. The teats, especially the hind teats of low-hanging udders, are sometimes injured between the cows' hocks and the floor when the cow rises.

If the injury is slight, there may be only a bit of dry blood on the end of the teat and the cow may be a little harder to milk than usual. Such cases usually heal promptly, but if the bruised end becomes infected the teat canal and the udder may become inflamed. Sometimes the end of the milk duct is permanently damaged. A severe bruise may result from a teat's being stepped on by a cow in a neighboring stall, while the cow is lying down, and if she jumps up suddenly actual tearing may result.

The treatment varies greatly according to the case. Conservative treatment will often save teats that are only slightly injured. Long continued bathing with hot water and gentle massage, if given early, will often open a closed canal. Much less damage may result from leaving milk in an injured quarter for twelve or even twentyfour hours than from an attempt to force open the end of an injured teat with a milk tube or probe. When teats are badly damaged a competent veterinarian should be called.

Repeated chilling of cows' udders, especially by washing and then exposing them to the cold air, often causes trouble. The canal becomes partially blocked, making milking difficult. Small masses of flaky material appear in the milk. In some cases the end of the canal is partly or wholly closed by a scablike formation. Considerable irritation of the skin, particularly around the base of the teats, will usually be noticed. The remedy is, of course, a different method of cleaning the udder, in cold weather.

THE DEMANDS OF TODAY

Dr. M. C. Merrill, Horticulturist, Utah Agricultural College.

Standing before the marbled window of a modern bank was an old lady, bent, gray, and feeble. It was indeed a picture showing the harmonious blending of the old with the new. Out of a worn and faded hand bag she carefully took a roll of bills, the savings of months, and said she wanted to buy a fifty-dollar bond. The clerk courteously handed her the application blank which she signed. As she was folding away the reecipt in her purse she remarked that she had three grandsons in the war and she didn't want them to suffer for food and clothing as long as she had a penny.

To the casual bystander there may have been nothing in that worthy of particular notice. To one who knew the circumstances underlying the transaction, however, there was in it a world for reflection. That woman was not dealing in mere dollars—she was laying her determination, her innermost self, her life blood, her spirit, if necessary, on the altar of her country's need.

In our Utah homes we daily see examples of this sweet devotion on the part of parents. Indeed, in many cases the parents sacrifice so freely and so willingly to provide for the comfort of their children that the latter tend to become selfish and ungrateful and take all such favors as a matter of course.

This remarkable year has brought enormous demands upon the country. The call to save, to produce, to lend our financial aid, has been heard repeatedly. To do so our energies and resources have been taxed. Everyone who has responded to the nation's need has been impressed with the fact that the present is a time for sacrifice. Countless things can we sacrifice if necessary and we shall arise stronger and nobler after each effort.

But there are some things which the demands of today will not allow to be sacrificed. This nation and her allies are struggling for the future peace, safety, and happiness of their citizens and of the world. The future of the race cannot be sacrificed; it must be safeguarded.

The mental and spiritual progress of the young must not be sacrificed. The country is sorely in need of the services of young men and women who are morally strong and have a well-trained mind in a sound body. We may sacrifice our money, our flocks and herds, and our lands, but we must not sacrifice our children or their future prospects. The nation is depending upon them.

At the beginning of this great war the schools and colleges of the European nations were allowed to become depleted in the number of students. The shortsightedness of this policy is now recognized by those nations and they are earnestly striving to build up the schools again, even though the stress of the conflict has now become more severe.

Fathers and mothers of Utah, now that the harvest is finished for this year, would it not be well to encourage your sons and daughters to enter the educational institutions of the State and take the winter course work? Special attention is being given by the schools to the needs of young people who can attend school only during the winter. During that period they will be able to make great advancement in preparing for the demands of tomorrow. They should send at once for catalogues and ascertain what courses they desire to take.

The opportunity is at hand. It should be seized by the youth of Utah in great numbers. The demands of today require it.

Remember the heavy snows of last winter?

Don't be caught napping!

The GOOD SENSE sled is simple and durable in construction, yet priced unusually low. We guarantee the GOOD SENSE to give long and unfailing service. It comes in 5 models.

The next time you are in Murray, drop in and let us show you the Good Sense. We can make immediate deliveries.

Miller-Cahoon Co.

Murray Idaho Falls

Pioneer implement dealers of Utah.

WHAT DID HE EXPECT?

"Slogoes was telling about an August he remembers when they had such cold weather that it froze ice on the water."

"What did he expect it would freeze, hot pancakes?"

LOGIC

"You can't get in here on a half ticket," exclaimed the doorkeeper at the five ring circus.

"I thought I could," apologized the small-town citizen. "I have a bad eye and I only expected to see half the show."

"Then you'll have to get two tickets," the doorkeeper announced "If you have only one good eye it'll take you twice as long to see the show."

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Devoted to Agriculture in the Rocky Mountain Region.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

"Save the sow," is a good slogan. You can make a profit on hogs at present corn prices.

Fight the rats and mice and do it right now. Do not let them get a start, go after them and keep after them.

FILL OUT THE COUPON

On page eleven will be found a coupon which every farmer is asked to fill out and send to State Food Administrator, Salt Lake City. If you will answer the questions it will help the committee who are going to push the hog campaign. Surely every one will help by giving the information asked for and send it in at once.

Turn now to page eleven and read the questions, fill in the answers. Do not think this appeal is to the other fellow alone, it is to YOU, to every one who reads this paper. Right now is the time to do it.

BE CAREFUL ABOUT FIRES

This is the time of the year when stoves are being put up and furnaces are being started. Just a little time should be spent to see that the chimnies are in good order. Birds may have built a nest during the summer or some such unusual thing happened and the first hot fire may cause a real fire. See that stove pipes do not go too close to wood or other material that might catch fire when the pipe is over heated.

Many fires could be prvented if just a little more care was exercised.

The thing to do is think about these things before they happen.

Let us see to it that there are less fire on account of carelessness in the future.

BEET TOPPER DEMONSTRATION

Several demonstrations of late have been made with mechanical beet toppers. Some of them are proving very successful.

It will be good news to beet growers to know that this kind of help will be available for next year. A good topper doing as good a work as the average hand topping and other machines that will lift the beets out of the ground and load them into a wagon without touching them by hand, will certainly be a big help to the beet grower. With the harvesting of beets done by machinery it will go a long way to help solve the labor problem.

The scarcity of labor made something of this kind necessary, and why not machines that will help the farmer with his beets as well as grain or other crops. We understand that the machines will be manufactured during the coming winter and be ready for next fall work.

KEEP THE ROADS IN REPAIR

Some communities of our state are becoming quite efficient in careing for their roads. After a storm they are out with road scrapers rounding them up so they will shed rain or water. The work is done while they are still wet or damp from a storm and in this way the loose material is quickly packed down and a good road is the result. When this work is neglected and done after it gets dry a poor road is all that can be expected. To get good results, work on roads must be done at the proper time. A long stretch of state road we have in mind is kept in good condition at a cost not to exceed 5 or 6 dollars a mile. When neglected and repair is necessary, it will cost one to three hundred dollars a mile to put them in good shape again. Roads must be built to shed the rain or during the winter and spring they become so cut up that traffic becomes pretty near impossible.

SAVE MONEY—TAKE CARE OF MACHINERY

If the average machine on the farm will not last over ten years then a depreciation of ten per cent should be annually considered.

Men who have made careful study of farm machinery gave it as their opinion that farm machinery depreciate in value more rapidly from poor care than from actual use, that the larger part of the 10 per cent is caused by exposure than by actual service.

Suppose there is about $1,000 worth of machinery on the farm, a ten per cent depreciation would mean $100.00 a year, allow half of this for actual wear and you have $50.00 that is lost annually. The loss of two or three years, spent for material together with labor in building a shed would soon show a good profit or saving to the owner.

Housing, repairing at the proper time, painting the wooden parts and greasing the iron parts are some of the essentials in the proper care of machinery.

PROTECT YOUR HOGS

During the last few days two small out breaks of hog cholera have occured, otherwise our state is very free from cholera. At the present time hogs are too valuable to allow any of them to die of disease. Fats and meats are needed for our soldiers and allies. Prices are too high, the loss to heavy to permit of a disease like cholera to get started.

A car of fat hogs sold by a farmer this week brought between $2,100 and $2,200.

State officials are watching these outbreaks very closely and helping to prevent the spread of this serious disease to any more hogs. Every neighbor, where there is any cholera should stay away from the place until it is thoroughly disinfected and cleaned up. Hog cholera is very easily carried from one farm to another. You can carry it on your shoes or wagon tires. The dogs may carry it. The thing to do is to be very careful. Notify County Agents or State Veterinarian State Capitol, Salt Lake, at once and they will help you.

DRAINAGE DEVELOPMENT

It will be interesting to many of our readers to know the work that is being done to properly drain our waterlogged lands.

The present year has witnessed a great development in the organization of drainage districts under the State law in Utah. Six drainage districts, involving nearly 75,000 acres have been organized. Four of these have voted bonds, amounting in all to nearly $600,000. The other two will vote bonds shortly, amounting to approximately one and a quarter million dollars. Two other districts are in course of organization, and some half dozen other districts are in contemplation.

In addition to the foregoing, three districts are now under way. These involve 22,000 acres of land, and an expenditure of over $300,000. Also two company projects have recently been completed, involving 7,500 acres of ground, while a great deal of land has been reclaimed by individual and company efforts, here and there, over the State.

PLOW UP THE DITCHES—KILL THE BUGS

Ditch banks are one of the places were insects and bugs find a wintering place, and they ought to be plowed up.

Destroying insects now will mean an enormous reduction in their number next year, and less work for the farmer in destroying them when he should be occupied with other duties.

Fall plowing of land will help to kill the bug—those that winter in the ground.

Burning the weeds and trash on ditch banks and partation fences will kill the kind of bugs or insects which winter in trash and and clumps of grass.

Now is the time to do this kind of work before the winter weather sets in. If you do this work now you will not only destroy the bug and insects, but you put your land in better shape for next year's crop.

SACRIFICE AND SERVICE MUST COME FROM EVERY ONE

President Wilson sent a telegram to a gathering of citizens of six states of the Northwest recently and expressed the service and sacrifice that must come from every citizen.

"The time has come when that home must be protected and that faith affirmed in deeds. Sacrifice and service must come from every class, every profession, every party, every race, every creed, every section. This is not a banker's war or a farmer's war or a manufacturer's war or a laboring man's war—it is a war for every straight-out American whether our flag be his by birth or by adoption.

"We are today a Nation in arms and we must fight and farm, mine and manufacture, conserve food and fuel, save and spend to the one common purpose * * * * which shall see this struggle through to a decision that shall make the masters of Germany rue the day they unmasked their purpose and challenged our Republic."

KEEP YOUR LIVESTOCK

Every farmer should keep his livestock, that is all the breeding stock, and if possible increase the number.

Our big crop of hay will make a surplus on many farms and our suggestion is to buy livestock and feed it rather than to sell the hay.

No permanently profitable system of agriculture has yet been devised which does not include livestock production as one of the main activities of the farm. Besides the direct profit that comes from livestock there is the profit that comes from a well fertilized farm.

In some of our nearby states livestock will be sold because they have no hay. Why not bring some of them to Utah to winter. It is a chance for our farmers to help others by helping themselves.

WINTER CARE OF MANURE

There are many reasons why the best of care should be given to the manure this winter.

Every load of manure put on your farm means a larger yield next year. The prospect of fair prices for all food products should mean more careful spreading and care of manure.

The waste of manure if counted in dollars and cents would run pretty high. The immediate application to the land saves more of it from loss than any way we have of caring for it. Protecting it from winter storms and freezing is a good practice. There should be no manure piles where it is left to rot and waste. The use of straw and leaves or any roughage that will soak up the moisture will increase the supply.

Some farmers make it a practice to haul out on the farm all the manure just as soon as a load is ready.

Manure is too valuable in helping to increase our crop to allow any of it to go to waste.

Advantages of Bonding A Drainage District

(Continued from page 3)

basis of the benefit to accrue to the lands, by virtue of the reclamation, and not on the basis of the appraised value of the land at the time the bonds are issued. Thus drainage, reclamation of lands, involving an expenditure of, say, $25.00 per acre, may be financed through a bond issue on lands having appraised value of, say, $10.00 per acre, so long as the benefits to accrue to the land are in excess of the cost of reclamation. In practice it frequently happens that lands valued at, say, $10.00 per acre, are improved by drainage, costing from $15.00 to $25.000 per acre, so that their market value is increased to, from $100.00 to $200.00 per acre.

The money required to retire a bond issue is obtained through a tax levy, distributed according to benefits received, and collected through the regular machinery of the county. The drainage tax is added to, and becomes a part of the regular taxes, and since no part of the taxes can be paid without paying the whole amount assessed, there is no opportunity for unprogressive land owners to refrain from paying their drainage tax, and thus throw an additional burden on other land owners in the district.

Under a bond issue there is no foreclosure on the bond itself, but in case any annual assessment is not paid, the land may be sold for taxes, subject of course, to subsequent redemption. Thus no opportunity is afforded for unjust treatment, as in the case of a mortgage loan.

Bonds may be prepared in such a way that they will be retired over a considerable period of time, thus distributing the burden on the land owners. The same thing can be accomplished in case of a bond issue falling due all at once, in, say, twenty years, by providing a sinking fund, for the retiring of the bonds. The former arrangement is generally more satisfactory, if it can be provided for.

Under the Utah Drainage Statutes, bonds must be issued for not less than ten years, nor more than twenty years. Under the provision serial bonds may be issued. A convenient arrangement would be to have ten percent of the bond issue fall due in each year, from the eleventh to the twentieth year, after issue. Under such an arrangement, interest only would be paid for the first ten years. In the eleventh year, interest for one year on the entire principal, and one-tenth of the principal itself, would be due. In the twelfth year, interest on nine-tenths of the principal, for one year, and another tenth of the principal would be due, and so on. The following table shows the annual payments required to pay the interest at 6 per cent, payable semi-annually, on a $10,000 serial bond issue, and retire the bonds according to the above plan.

End of	Balance	Principal Payment	Interest	Total Payment
[illegible] mo.	$10,000	$ 0	$300	$300
1 yr.	10,000	[illegible]	300	300
6 mo.	10,000	0	300	300
2 yr.	10,000	0	300	300
[illegible] mo.	10,000	0	300	300
3 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
4 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
5 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
[illegible] yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
7 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
8 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
9 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
10 yr.	10,000	0	300	300
6 mo.	10,000	0	300	300
11 yr.	9,000	1,000	300	1,300
6 mo.	9,000	0	270	270
12 yr.	8,000	1,000	270	1,270
6 mo.	8,000	0	240	240
13 yr.	7,000	1,000	240	1,240
6 mo.	7,000	0	210	210
14 yr.	6,000	1,000	210	1,210
6 mo.	6,000	0	180	180
15 yr.	5,000	1,000	180	1,180
6 mo.	5,000	0	150	150
16 yr.	4,000	1,000	150	1,150
[illegible] mo.	4,000	0	120	120
17 yr.	3,000	1,000	120	1,120
6 mo.	3,000	0	90	90
18 yr.	2,000	1,000	90	1,090
6 mo.	2,000	0	60	60
19 yr.	1,000	1,000	60	1,060
6 mo.	1,000	0	30	30
20 yr.	0	1,000	30	1,030
		$10,000	$9,300	$19,300

It will be seen from the foregoing that the interest amounts to $9,300, and the amount is larger than would be, if payments on the principal could have been started before the tenth year. This is not possible in the case of the Utah law, under a serial bond issue, but by providing a sinking fund, the total amount of interest may be reduced. The following table shows how a bond issue of $10,000 may be liquidated in fifteen years, interest at 6 per cent, payable semi-annually, by providing a sinking fund, carrying interest at 4 per cent, payable semi-annually, payments on the principal to begin in the third year, and being so distributed that the burden on the tax payers, is very light at first, and increases as the productiveness of the land increases.

End of Year	Interest Charge	Annual Payment	Accrued Interest	Annual Total	Sinking Fund
1	$600	$ 0	$ 0	$ 0	$ 0
2	600	0	0	0	0
3	600	100	0	100.00	100.00
4	600	200	4.04	204.04	304.04
5	600	300	12.28	312.28	616.32
[illegible]	600	400	24.90	424.90	1,041.22
7	600	500	42.06	542.06	1,583.28
8	600	600	63.97	663.97	2,247.25
9	600	700	90.78	790.78	3,038.03
10	600	800	122.74	922.74	3,960.77
11	600	900	160.01	1,060.01	5,020.78
12	600	1,000	202.84	1,202.84	6,223.62
13	600	1,000	251.43	1,251.43	7,475.05
14	600	1,000	301.99	1,301.99	8,777.04
15	600	868.37	354.59	1,222.96	
Total	$9,000	$8,368.37	1,631.63		10,000.00

The latter arrangement, while possessing the advantages of a lower interest cost, and a more rapid liquidation, involves a greater amount of administrative effort on the part of the drainage district officials, and introduces an opportunity for irregularity on their part, and the possibility of loss through unwise investment, or otherwise.

The issuance of bonds is recommended for all drainage districts, as

(Continued on page 15)

Fill out the pledge card on page eleven and mail it today. The information will help the committee to increase the number of hogs in Utah next year.

Used Car Bargains

We offer, subject to very liberal terms, the best used cars in America. The standard values of the automobile world. We refer directly to the Oldsmobile and Buick cars.

We have these cars, in stock, ready for immediate delivery, newly painted, in first-class mechanical condition. Exceptional values—many of the cars offered have run less than 5,000 miles.

Write us stating your car requirements, Department F.

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are absolutely guaranteed to give you at least 3,500 miles of puncture-proof service—and most users average 5,000 to 10,000 miles. Built like new tires, guaranteed just the same, wear even better and cost one-half less. Come in and see them—test the rubber and examine the construction—then decide for yourself.

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144 East Broadway—Phone Was. 8266
Salt Lake City, Utah.

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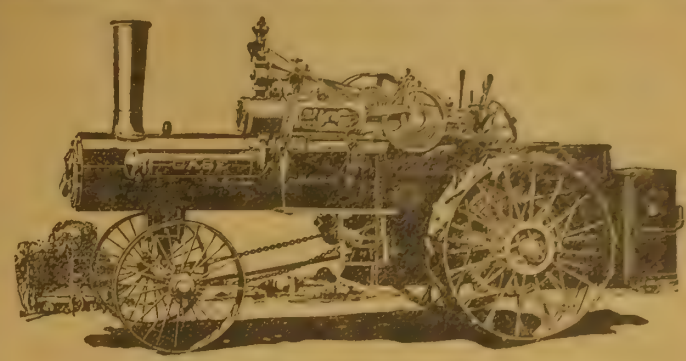

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You profit because of these reasons and because of quantity production. You get the best possible Steam Tractor at a reasonable price. You are assured of satisfaction for years to come.

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A pictured description, with specifications, of the complete line of Case Steam Tractors, will be mailed free upon request. Write for your copy today, or for any other information as outlined below. It is all free.

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Write Today

HOME

HOUSEKEEPERS WARNED AGAINST PERSONS POSING AS "FOOD COLLECTORS"

This statement was made today by Herbert Hoover, United States Food Administrator:

"We have reports from various parts of the country of crooks, thieves, and confidence operators who are going from house to house purporting to be authorized by the Food Administration and other departments of the Government to collect or commandeer foodstuffs for the Government or the Army.

"I wish to say emphatically that no department of the Government has or will ever make such demands on householders, and that all such people are petty frauds and should be held for the police. The Government agencies are investigating various cases and information is sought of all such persons by this department."

GOLDEN PUMPKINS

What can you do with a pumpkin? Before turning it into the good dishes you know so well, take a long look at this glorious bit of color, double-dyed with sunshine. Its very beauty evokes thanksgiving. If you are going to make a pie, cut off the top, scoop out the meat, then fill the shell with sprays of red-brown autumn leaves and place this golden bowl in the center of the Thanksgiving board.

Here is a group of receipes that are different. They are from the 1917 edition of the Pumpkin Book.

1917 Pumpkin Pie

1 cup molasses, 1 quart cooked pumpkin, grated peel 1 lemon, ½ teaspoon each nutmeg, cloves and cinnamon, 4 eggs.

Heat the molasses and stir into the pumpkin; add the seasoning and beaten yolks of the eggs. Mix well; add the stiffly beaten whites of the eggs. Bake in a pudding dish. Serve cold. Mashed sweet potato may be used in place of the pumpkin if thinned with one and a half cups of milk.

Corn Meal Crust.

Grease a pie tin. Cover it with dry cornmeal one-eighth of an inch thick, shaking it to scatter the cornmeal. Fill with pie mixture and bake. This crust may be used with any semi-solid filling. Pastry may be omitted altogether and the custard baked as a pudding.

Baked Pumpkin.

Cut pumpkin into quarters. Allow two quarters of a large pumpkin for a family of six. Remove seed but do not peel. Place in a baking pan and bake until tender enough to pierce easily with a fork. Serve from the rind at the table with gravy.

Pumpkin Pones.

2 cups cornmeal, 2 cups stewed pumpkin, 1 teaspoon salt, 6 tablespoons sirup.

Press pumpkin through a ricer. Mix with other ingredients and blend well. Mold with the hands into small pones and bake in greased biscuit tin until a rich brown, about 30 minutes. If too moist to mold well, add more cornmeal.

Golden Chips.

2 pounds pumpkin, 2 cups white sirup, ½ cup lemon juice, 2 ounces ginger root.

Cut a small sweet pumpkin into narrow strips. Remove peel and seeds and cut into thin slices. Arrange pumpkin in preserving kettle in flat layers. Pour over it the sirup and lemon juice, cover, and let stand 24 hours. Add the peel of one lemon shredded fine and the ginger root. Cook until the pumpkin is tender, then pour it into an earthen jar. In a few days pour the sirup from the pumpkin. Boil to reduce and thicken it, and pour it hot over the pumpkin.

HERE IS ONE RECIPE FOR USING CORNMEAL

Cornmeal can become popular on wheatless days, not alone as johnnycake or pancakes, but as fruit bread or gems. Its wider use will allow more wheat to go over seas to the warring allies and at the same time will improve American health.

Apple corn bread is delicious when made with three cups of cornmeal, two tablespoonfuls of sugar, a little salt and a teaspoonful of baking powder, to which after mixing 1 2-3 cups of milk was added. Three tart sliced apples were later added and the mixture was baked for 30 minutes. Fruit gems, made with raisins and currants, seemed even better to some tastes.

Lemon Sauce

1 cup sugar, 2 tablespoons flour, 2 tablespoons butter, 1¼ cups water.

Mix sugar and flour thoroughly—add grated rind of ½ lemon and add the hot water, cook until slightly thickened, add butter and juice of ½ lemon, serve hot over the hot pudding.

CHEESE PLAYING CENTER

Now that we are "doing sums" in short division with American food, we are ready to profit by the hard-earned war experience of Europe and her struggle on short rations. For instance, in Europe cheese is a very real part of the diet and not, as with us, the "something extra."

However, with meat at present prices the American housekeeper thinks hard when told that cheese has about one and one-half as much muscle-building value as beef, pound for pound. She cuts out the "something extra," combines cheese with milk and eggs and makes a dish that rules out the roast, leaving beef for the soldiers and the Allies.

Here are a few substantial cheese dishes that may be served sometimes instead of meat. They call for any hard commercial cheese, cottage cheese or the cheese like your grandmother used to make, now being revived in the farm kitchen.

Duchess Soup.

½ onion, 2 tablespoons fat, 2 tablespons flour, 3 cups milk, ¾ cup grated cheese, salt and pepper.

Cook the onion in the fat until tender but not brown. Add the flour, then the milk gradually. Cook until smooth, add seasoning to taste. When ready to serve, put one tablespoon of the grated cheese in each plate and pour over it the hot soup.

Cheese Roll.

½ cup rice, 1 cup milk, 1 tablespoon chopped onion and parsley, ¾ cup grated cheese or cottage cheese, ½ cup mashed potato, pepper and salt to taste.

Cook the rice in the milk with the chopped onion and parsley, then add the mashed potato, pepper and salt. Form into a roll, brush with fat dripping and brown in oven.

This roll can be made up with many variations. Bread crumbs, beans and cheese may be combined, using enough of the liquor in which the beans were cooked to moisten the mixture so that it can be made into a loaf. The beans should be mashed. Still another combination is made by substituting for the beans spinach or chard chopped fine.

Cheese Fondue.

1 cup milk, 1 cup bread crumbs, 1 cup grated cheese, ½ teaspoon salt.

Boil the milk and pour over the bread crumbs, cover and let stand on the stove fifteen minutes. Mix in the grated cheese and add salt and, if desired, a little red pepper or paprika. Pour into a greased baking dish and bake twenty minutes.

A richer dish may be made by adding two or three eggs. Add the well-beaten yolks, then fold in the whites beaten until stiff. Bake 30 minutes in moderate oven and serve at once. This is really a souffle. Cooked rice may be used in place of the bread-crumbs in making this di h.

Macaroni and Cheese.

Besides the familiar dish of macaroni and cheese there are many others not so well know to the average housekeeper. Macaroni boiled in salted water drained and served with either grated cheese or cheese sauce is an easily prepared dish. Be sure that the macaroni is piping hot.

Macaroni with cheese custard is particularly good. Place in a greased pudding dish two cups of cooked macaroni, cover this with a cheese custard made as follows: press through a colander or mash smooth one cup of cottage cheese, add one well beaten egg, one-half cup of milk and salt and pepper to taste. Pour over the top of the macaroni and bake in a moderate oven 30 minutes.

Cheese Sauce.

1 cup milk, 1 tablespoon cottage cheese or ¼ cup grated cheese, 2 tablespoons flour, salt and pepper.

Thicken the milk with the flour. Just before serving add the cheese, stirring until it is melted. This sauce may be used on hard boiled eggs, toast, cabbage, cauliflour, macaroni or rice. Double the quantity of cheese when it is to be eaten with macaroni or rice.

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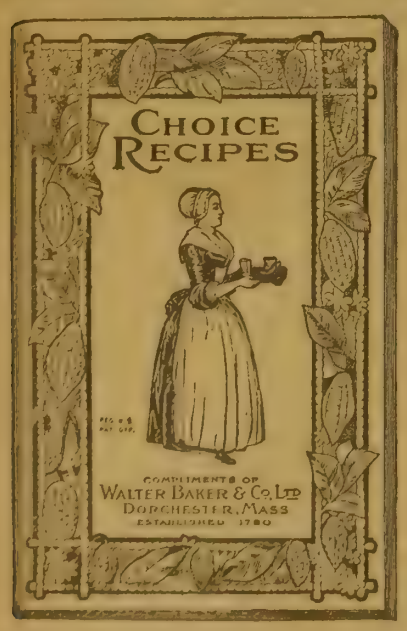

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culture, only fresh vegetables are recommended for canning, and sterilization is accomplished by the following processes; cleansing, blanching, cold dipping, packing in clean, hot jars, adding boiling water, sealing immediately, and then sterilizing the sealed jars at a minim m temperature of 212 degrees Fahrenheit for one to four hours, according to the character of the material. Since the spores of B botulinus are killed by heating for one hour at 175 degrees Fahrenheit (according to Jordan's "Bacteriology" and other recognized textbooks) there is no reason to believe that the botulinus organism will survive such treatment."

RECIPE FOR HOME-MADE POTATO STARCH

Equipment needed: Two clean galvanized tubs, large dish pan, one cylindrical grater, and plenty of water and wiping cloths.

Select five bushels of potatoes, free from potato scab and surface blemishes. Wash them thoroughly by the use of plenty of water and a small scrubbing brush.

Use one tub for cleaning potatoes and the other for the gratings. Seat yourself in a convenient place between the two tubs, with dishpan and grater in your lap.

Without removing the skin, grate your clean potatoes from right hand tub into the dishpan, empty pan of gratings when necessary into the well-cleaned tub to your left; continue this operation until your left-hand tub is a trifle over half full. Pour clean water into tub upon the potato gratings until nearly full; stir well so as to saturate every particle with water.

Remove all peelings and floating material from top of water, allow tub to stand over night so that starch will settle to bottom and all pulp and poato skin will rise to the top of the water.

Remove all water carefully from tub in the morning, as well as the dark formation and sediment on top of the layer of starch.

Pour a fresh supply of water over starch again, stir again so as to rinse all particles of starch well; allow to stand for about eight hours.

Remove water, layer of pulp, from the top, etc. In doing so be careful not to waste the starch.

Continue this process with new application of water and careful stirring, letting it stand each time; as many times as it is necessary to effect a complete separation of starch from the pulp, peeling and sediment of the potatoes. It will usually take four or five washings.

Potato starch is a healthful food and can be used in at least a dozen different ways for food purposes in making puddings, salads, milk dishes, etc. It is both an easy and economical method of providing a valuable food product for the average home.

The potato water and wastes incident to the process can be easily utilized on the farm for hogs, poultry and stock.

How to Make Starch From Potato Culls.

The potato clubs with the Department of Agriculture has been organizing to teach the young people of America to grow potatoes were primarily intended for boys. Certain girls, however, became interested, enrolled, and have done particularly well, not only in management of crop but in manufacturing home-made potato starch out of the unmarketable culls of the vegetable.

Each girl when she enrolls in this club work, which now is being taken up by 18,000 young people, is given a recipe for making home-made potato starch. The Office of Farm Management's specialist who is in charge of the potato-club work supplies each new girl member with a printed copy, which reads as follows:

Equipment Needed.—Two clean galvanized tubs, large dish pan, one cylindrical grater, and plenty of water and wiping cloths.

Take 5 bushels of potato culls. Wash them thoroughly by the use of plenty of water and a small scrubbing brush.

Use one tub for cleaning potatoes and the other for the gratings. Seat yourself in a convenient place between the two tubs, with dish pan and grater in your lap.

Without removing the skin, grate your clean potatoes from right-hand tub into the dish pan, empty pan of gratings when necessary into the well-cleaned tub to your left; continue this operation until your lefthand tub is a trifle over half full. Pour clean water into tub upon the potato gratings until nearly full, stir well so as to saturate every particle of water.

Remove all peelings and floating material from top of water; allow tub to stand over night, so that starch will settle to bottom and all pulp and potato skin will rise to the top of the water.

Remove all water carefully from tub in the morning, as well as the dark formation and sediment on top of the layer of starch.

Pour a fresh supply of water over starch again; stir again so as to rinse all particles of starch well; allow to stand for about eight hours.

Remove water from the top, the layer of pulp, etc. In doing so be careful not to waste the starch.

Continue this process with new applications and careful stirring, letting it stand each time—as many times as it is necessary to effect a complete separation of starch from the pulp, peeling, and sediment of the potatoes. It will usually take four or five washings.

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The potato water and wastes incident to the process can be easily utilized on the farm for hogs, poultry, and stock.

SHIPPING FROSTED POTATOES MEANS WASTE

Severe frost and freezing weather in many of the states have done considerable damage to the late potato crop. In some sections not over 50 per cent of the late crop has been harvested and many of the potatoes yet in the ground have been damaged.

Potato experts with the United States Food Administration urge growers at this time to sort all potatoes going to market. Not only may a portion of the frosted potatoes be used to advantage as stock feed, but a few frosted potatoes in a sack may ruin the entire sackful during shipment.

The license system now in effect and which affects potato shippers, prohibits them under penalty of forfeiture of their license, from shipping or selling for food purposes from points of production, potatoes which are not practically free from frost and decay. "Practically free' is interpreted that the potatoes shall not be injured to an extent readily apparent upon casual examination, and that any damage from the causes mentioned can be removed by the ordinary method of paring without appreciable increase in waste over what would occur if the potatoes were perfect.

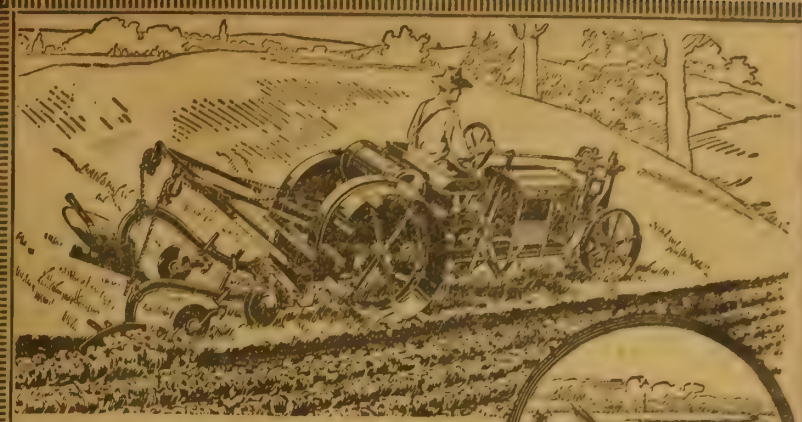
To ship the frosted with the good means an economic loss of potatoes, labor, freight charges and, in addition, the loss of the car space, which, incidentally, is of vital concern in the present shortage of cars.

It is not alone a question of patriotism, but also one of good business judgment, to see that potatoes going to the wholesaler or retailer are in marketable condition.

KEEPING MACHINES IN ORDER ON THE FARM

L. W. Lighty.

There is a world of difference in this matter. I find people who go to extremes on both sides. Once in a while I find a man who goes over his implements every year or two and takes them apart, oils and paints them and puts them together again and spends a month or more doing it. This is too much of the good thing.



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Rather often I find a man who has all his implements out in the weather all summer and in the fall he collects most of them and sticks them under some make-believe roof and when he needs one he some way gets it out and starts work. It is the busy season of sowing and planting and some iron or wooden part is rotten and to smash it goes. Now he is in hot water. He fumes and fusses and hurries and gets nowhere. Thus it goes all summer. Life looks like a burden with such a man. Let us adopt a course of good sense with our farm implements from end to end. Keep them in a convenient shelter and keep them in working order. Very early in my farming I built an implement house wide enough to contain any farm implement and as long as a large barn. The entire front doors easily open and shut. The home of the implement was in that house. The rule was that the implements had to be at home nights always. It is easier to unhitch on the level sod in front of the implement shed than anywhere else and it requires a minute to push the implement into the shed. Thus the original paint lasts as long as the implement lasts. So many farmers neglect oiling their implements. Lubricating oil is cheap and there is no reason why it should not be used abundantly. Manufacturers of the best implements now fit all bearings with hard oil cups and this is the best and most convenient method of lubricating ordinary bearings. These are matters worth while financially as well as morally and ethically. Magazine writers would have the world believe that farmers are the only sinners along these lines but I have looked at a number of construction corporation equipments for the last ten or more years, consisting of dump wagons, scoops, power shovels worth fifty farm equipments all out on the weather and not in the weather only but near the line of public travel where they are an eyesore and a nuisance to the public. Strange the magazine writers always see the mote and overlook the beam. But the big sins of others do not excuse our little ones.

WHAT FRIGHTENED HIM

Betty was milking the cow when the mad bull tore over the meadow. Betty did not stir, but continued milking. Observers who had run into safety saw to their astonishment that the bull stopped dead with a few yards of the maid and cow, turned round, and went away sadly.

"Weren't you afraid? Why did he run away?" asked every one of Betty.

"He got scared," said Betty. "This cow is his mother-in-law.

Demonstration of Successful Beet Toppers

(Continued from page 3)

equipped shops with modern tools. For years they toiled and they spent a small fortune upon their patented devices. They asked the Franken brothers, who were extensive beet growers down in lower Utah county to join with them. They all studied the many difficulties and, with the encouragement that was offered by their friends, including the sugar companies, they have perfected a device that is now conceded to do as good as the average hand labor topper will do. Their final machine is so simple and there is so little mechanism to it that it seems almost uncanny to see it work and the results that it gives.

One of the great difficulties that the inventors have had was to devise an automatic device that will cause the topper to rise above the surface of the ground and top the beet that insists on growing above the surface as well as to also grow deep into the soil. The very next beet, ten inches away in the same row may be well behaved and grow and entirely below the surface or at least to expose only a small amount of the crown to which the leaves are attached. This adjusting for the two types of beets must be automatic; the machine must act quickly; not even time for a human machine to think and act between beets for less than two seconds intervenes between action upon the high beet and the low beet and then the third beet may be just as unruly as the first high beet and therefore, the successful machine must be a hum hurdle jumper that will clear the mark and decapitate the beet, each in its respective turn and right itself for the next beet, no matter how unorthodox its habits of growth should be.

The farmer could not afford to have an undue amount of his tonnage left on the field; the sacrifice was too great to allow even a modest amount of wastage because in the aggregate, the loss would total a large loss. The sugar factory did not want too much of the crown left on the beet because that exposed crown was an unruly factor to contend with in the factory. It prevented the sugar boilers from recovering a proper amount of sugar from the juices and it caused large wastage. That would not do.

The Deveys and Frankens had a great task ahead of them.

Their years of patient toil has been rewarded. It is hard to imagine more happy men than those men in overalls and jumper jackets demonstrating to their four score of neighboring beet growers, sugar company representatives, manufacturing experts and others who gathered on the Lehi farm Wednesday, November the 21st and witnessed that mechanical harvester, drawn by two horses and doing the impossible. "It must be done" was the slogan. They did it. Every beet grower present held up his right hand and voted the machine a success. The field where the demonstration was held offered the most serious difficulties. Some beets were high, some were low and some were still higher. The tops were frozen and the leaves were tough and spongy. The wheelage was sticky. It was not ideal conditions for operating, by any means. The overwhelming feature of the demonstration was that IT WORKED. IT CONTINUED TO WORK. IT WILL BE MADE TO WORK EVEN BETTER.

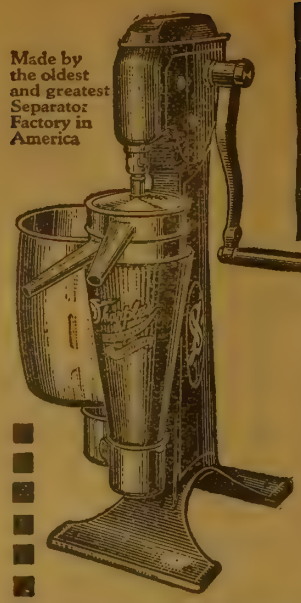
Then the crowd piled into the 18 or 20 automobiles that stood in the road just outside the field and they proceeded down to the lower end of Utah county and there they witnessed another demonstration that was equally as successful. Huish and McClellan, two local beet growers and mechanics had also joined with the Franken brothers for demonstrations and improvements and have turned out a mechanical harvester that also jumps the beet hurdles and clips off the beet crown and leaves at just about the right place and does it so easily and so regularly that the improperly topped beet is not found very often. Editor Kirkham of the Utah Farmer who always carries a sharp pencil in his pocket, searching for agricultural facts began to count the beets and tops, following the machine and he declared that his counts showed perfect topping running from 95 to 98 times out of a hundred. That equals the best hand labor topping and it is very much better than the average hired hand topping. Huish and McClellan insisted that their machine was well trained and would behave even on sticky, even muddy soil.

To demonstrate their claim, a few days prior to their final demonstration, they turned irrigation water into several rows of beets. The land was so wet that the horses had difficulty in traveling. The wheelage was so soft that sometimes the wheels refused to turn but so long as the wheels would turn and furnish motive power to drive the revolving disc that clipped off the tops, the 'human decapitator" kept right on doing business and the results were also equal to the best hand topping and superior to the average. The Franken Brothers, who this year grew 35 acres of beets used both of these machines to do their topping and the average cost of topping their beets has been 30 cents per ton or an average saving of about 75 cents per ton, as this year, it cost most growers more than a dollar per ton to top their beets but the Frankens found that the three young ladies who were never accustomed to working in the fields, could and did do the work which would otherwise have required many men to have performed, under former methods, had it not been for the assistance of the mechanical toppers. The saving in cash outlay, this season will easily pay for a new machine, on the 35 acres, say the Frankens and the mental relief to know that they could get their crop harvested in good season and without the hand labor worry that many of their neighbors had was also a great item with them.

It is in Utah county where the first successful sugar factory is located. Utah county has served as a cradle in the development of the sugar industry. Men have been trained in the factories of Utah county and have gone out to many states to man the new factories that have sprung up during these many years.

Field agriculturists have been trained in Utah county that have gone out to many parts of the United States to aid in the development of the sugar industry. It is also significiant that these beet growers and mechanics of Utah county have brought an innovation for the beet grower, equally as important as the self binder was to the grain grower, thirty years ago. The grain binder made it possible to enlarge the grain fields. The beet harvester will make it possible to enlarge the beet fields.

Up in the upper end of the Cache valley in Idaho has also been the scene of many years of patient toil and effort toward the development of a successful beet topper. C. J. Jensen has been growing beets for many years. As he grew older, his back protested against too much bending over and began to protest to its owner that relief must come at beet harvest time or the beet acreage must be reduced. Mr. Jensen was a farmer with a good deal of mechanical talent but it took a lot of money to carry on the trials and experimenting so he interested his neighbors, J. N. Larsen and others who furnished him with additional funds and a lot of encouragement. Mr. Jensen this year topped and harvested his own crop of beets and then went out to neighbor Neil-



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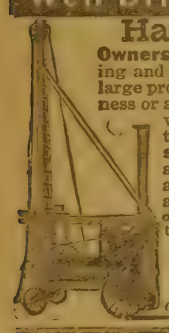
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son and others and topped their beets and cut the harvesting cost in half and got the beets out of the ground before threatening winter weather interfered.

Over in Ohio a combined topper and lifter was built and the inventors were anxious to try it out in this inter-mountain country. They chartered an express car and brought their machine out to Utah. Two expert mechanics and two capitalists came along. The mechanics spent about three weeks in this district, trying out their different equipments on different types of soil and under many conditions. The machine did excellent work in Ohio and it must be made to work also in Utah. With some changes, suggested by their experience here in Utah, they now have a successful topper and lifter that moves under its own power. Frozen beets soon begin to decay and many districts, the acreage must be The French government recently sent a skilled engineer who studied the machine in its demonstrations and reported that it did 95 per cent perfect topping and 100 per cent perfect lifting. European countries are keenly interested in these labor saving devices and it is entirely possible that Uncle Sam will, true to tradition, relieve our European neighbors in their hour of need.

Joseph Quinney, Chief Agriculturist with the Amalgamated Sugar Co., and John T. Barton of the same Company, Mark Austin Chief Agriculturist with the Utah-Idaho Sugar Company and many of their field superintendents witnessed the Utah county demonstrations and were greatly pleased with the progress toward relief on beet harvesting work. Mr. Quinney stated "These demonstrations furnish conclusive evidence that the beet grower will be assured relief at harvest time for next season. The labor shortage will be met successfully and our factories may be supplied with a normal acreage and probably an increased acreage. It will cost less to harvest 20 acres of beets in 1918 than it cost to harvest 10 acres this season. The efficiency of the harvester is satisfactory to us, from a factory standpoint and I am gratified to have the favorable expressions of approval also from the growers who witnessed the demonstrations."

One of the most interested spectators was Israel Hunsaker of Honeyville, Box Elder county. This season he grew 80 acres of beets and he had a great deal of bother to get labor to handle the crop. He has been a regular beet grower for many years and he rather likes to grow beets, he said quoting his own words, "Last night, I should have answered the beet question by saying that I would not grow more than five acres next year. Since I have witnessed these demonstrations and have the assurances that these machines will be made right here in Utah and will be available for we beet growers next season, I will again grow 80 acres and my possibly increase my 1918 planting."

R. B. Gardner of Salt Lake County, who with his brother and several neighbors also studied the toppers at work said, "I like to grow beets and have found the crop profitable but I have been so terribly bothered to get satisfactory labor with my 28 acres of beets this year that I had about decided to cut out the beet crop for next year. I want to respond to the Governments' appeal for more sugar and with the advent of these toppers, I can now see my way clear to go ahead with possibly an increased acreage."

Mark Austin talked to the large crowd that assembled at both places in Utah county and told them what he thought about the future of the machines and what it meant to the beet sugar industry. He said, "It is now assured that a successful harvester will be available for the 1918 crop of beets. The sugar companies will get behind; push the manufacturing of these machines so a sufficient number will be available for the 1918 harvest, so far as possible. The toppers will be made in one, two and four row capacity. The two and four machines will be built to top, dig and elevate the beets directly from the ground into the wagon which will drive alongside and there need be no hand work attached to harvesting the crop. The beets will be delivered to the factory in fresh condition, directly from the fields and that will mean much to both the growers and the sugar factory. On warm, windy days, beets exposed in small piles on dry ground in field shrink in weight from 5 per cent to 10 per cent in 24 hours. This means a loss in tonnage to the grower which amounts to from 50 cents to 85 cents per ton, under such conditions. Freezing also tends to lose weight in the beets. When beets are dug in good condition and delivered promptly to the factory before they have evaporated and shirveled, they can be placed in the factory sheds and cared for in fine shape for a long time without deterioration. often give us large losses. Fortunately for the factories, the very condition which the beet grower wants, is the conditions that the factory wants. The slicing knives and the diffusion batteries work very much better on firm, crisp beets. When they shrivel, it is difficult to force the sacharine matter out of the cossetts and we frequently experience serious losses in working beets that have shriveled or have frozen and thawed and decay starts."

I have carefully estimated the results of the innovation of the beet harvester. It will mean a saving of $10 per acre, on the 15 ton crop of beets. With 150,000 acres of beets here in this inter-mountain country, the saving to the beet growers alone will total the stupenduous sum of $1,500,000.00 in a single season.

The saving to the factories will also be great because the beets will be dug and delivered to the factory in better condition and therefore the recovery of sugar will be more economical.

The largest single saving, however, will come through the larger and more economical use of the tops and crowns. I have studied the subject in detail and am fully persuaded that the harvester will enable the farmer to gather the tops and crowns and promptly silo them and thus add an additional profit of not less than $40 per acre, as compared with the present methods of wasteful feeding. Stockmen who have been practising the better use of the tops and crowns insist that the beet tops and crowns, when properly handled have a feeding value, with the present price of hay for a comparison, of not less than $45 per acre.

At the outset, there will probably be a larger call for the one and two row harvester but ultimately, a neighborhood will join in buying a four row machine capable of lifting, topping and delivering into the wagon, at the rate of 15 tons per hour or about 150 tons per day, in good beets.

The Government is now greatly concerned that the 1918 acreage of beets here shall be fully maintained and in increased. The farmers have always responded to our patriotic needs and they will respond, at this time, too, now that relief is in sight for harvesting the beet crop. We already have improvements under way that will conserve seed and also offer some relief at thinning time and much will yet be done in that direction. The beet harvester is a success and it marks a new epoch in the history of the sugar industry. We mean to see that the harvesters are available, at least in moderately large numbers, to take care of the growers next harvest season. We are fortunate that the manufacturing plants here in Salt Lake and elsewhere in the interior country are not loaded up with war requirement orders. We must have relief against this sugar famine. This inter-mountain region can do a large share toward bringing about that relief.

The harvester will generously contribute toward the expansion of the beet crop.

Fill out the pledge card on this page and mail it today. The information will help the committee to increase the number of hogs in Utah next year.

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A PIECE OF GOOD FORTUNE

In these days of high prices it is refreshing to find one article of nation-wide demand that will not cost more than it did last year, and yet will be more valuable than it has ever been.

The Youth's Companion subscription price, $2.00, will not be increased. The 52 issues of 1918 will be packed full of the best stories by the most popular writers. The Editorial Page, the Boys' Page, Girls' Page, Family Page and all the departments will bring a vast amount of cheer, good entertainment and information for every reader in the family circle.

By special arrangement new subscribers for The Companion can also have McCall's Magazine—the fashion authority—for 1918, both publications for only $2.25.

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3. The Companion Home Calendar for 1918.
4. McCall's Magazine—12 fashion numbers in 1918.

All for only $2.25.
THE YOUTH'S COMPANION,
Commonwealth Ave., Boston, Mass.

To State Food Administrator
Salt Lake City, Utah

I am glad to join with you and help increase the number of hogs for next year.

For you information I submit the following:

Number of hogs I have on my farm.....

Number of sows or gilts I have or will breed this fall.....

Number of sows or gilts I have more than I can raise next year and will sell to neighbors or hold for your committee to sell.....

Number of brood sows I would like to buy.....

The breed of hogs I prefer.....

Number of fat hogs I will have ready for market.....

How many more hogs will you raise this year than last.....

How many hogs could you feed and care for if you were able to secure them.....

Name.....

Adress.....

Fill in the amounts and mail today to State Food Administrator, Salt Lake City, Utah.

LIVE STOCK

SALE OF BREEDING STOCK MEANS LOSS

Feed crops for livestock are shorter than they have been for many years and grain prices are higher. The temptation to accept the present high prices for meat stock is great. The farmers in many places are yielding to the temptation to sell, and for this they are likely to pay the usual penalty for yielding to temptation, which is repentance. Reports of heavy shipments from territory that sadly needs livestock are frequent. Foundation breeding stock even is being sacrificed in some cases. All agree that this is no time to keep surplus stock that is not yielding a product or making gains, but never was the need so great nor the reward more promising for maintaining on every farm an adequate foundation of the best breeding stock.

Farmers should save the breeding stock—

To maintain fertility: The application of manures from livestock has proved to be the best and most economical way of maintaining production. Land that is not manured frequently becomes so depleted in fertility that profitable yields cannot be obtained. On light sandy lands or lands that are subject to drouth especially, it is important to apply manures. Therefore, even those who this year are short of feed owing to drouth, should manage, if possible, to maintain their foundation stock.

To convert waste products into cash: Waste land and stubble fields may be pastured, corn stalks, straw, and other coarse feeds, otherwise unmarketable, may be turned into cash for the farmer by cattle or sheep. Through the pasturing process it will be possible at the same time to retain on the farm valuable fertilizing material.

To supply meat products: The meat supply of the United States is shrinking. It is estimated that there is now produced only one-half of a beef and three-fifths of a hog per capita, which is below former years. Good prices for livestock are likely to prevail for some time and it will be possible to make good profits from properly conducted stock raising.

While there are other reasons which might be advised for keeping livestock, the three mentioned are fundamental and sufficient, warranting every land owner in borrowing money to buy feed and going to almost any extreme to preserve his foundation of breeding stock.—Andrew Boss.

INCREASED NUMBER OF HOGS PRICES FOR LIVESTOCK

Joseph P. Cotton of the Food Administration.

The Department is glad to learn of an increase in buying by farmers of hogs for fattening and breeding; that is good news because it means an increase of hog products for this winter and next year. I hope that there will be a still further increase.

There is only one more warning to be sounded in the situation: the hogs shipped through the market centers are required to be vaccinated, but all precautions should be taken against hog cholera in shipments of hogs which do not pass through market centers but are moved from farm to farm, or from one part of a State to another.

It is the general policy of the Meat Division (so far as it is in its power to affect prices for livestock paid by the packers to the farmers) to see that those prices are fair and to insure to the farmer a fair profit.

In regard to hogs, where there is an immediate and great need of stimulation of production, that policy has been made definite by relating the price of hogs to the price of corn. This Division has not under consideration the establishment of any similar relation of prices to be paid for cattle and sheep to prices for their feed. There is nothing in the present situation that seems to make such action necessary.

CARE OF THE STALLION

By Dr. E. H. Riley.

As a rule stallion owners are more concerned about the care of their stallion just before the opening of the breeding season. That is good so far as it goes, but it should be kept up the year round. The health and condition that the horse will be in during the breeding season will depend on his being kept in health during the remainder of the year. To do this he should have plenty of exercise. If proper exercise is given the question of feed is not a serious one. It is hard to improve on good clean hay and oats with which a little bran has been mixed. The proper way to exercise a stallion is to work him. Break him to work at the same age other colts are broken and keep him at it. Every stallion should be worked at least enough to pay for his feed, especially those under twelve years of age. You can never add anything to the breeding qualities of a stallion by letting him live a life of ease and idleness. Have him do the kind of work his colts are expeetcd to do.

No matter how valuable a stallion may be, don't be afraid to work him. It will make him more valuable if you do work him. During the breeding season a stallion should be travel ed from five to twelve miles a day. In feeding or working a stallion you will have to use a little "horse sense"—don't give him too much or too little of either. Above all don't condemn him to solitary confinement in a dark stall, knee deep in filth, where he is fed and watered only occasionally. A stallion likes company whether it be man or horses. Lonesomeness is the principal cause of injurious and vicious habits in stallions. They should be kept in good condition in the season and out of the season.

The number of mares a stallion should breed during the season will depend largely on his age. Some of the best horsemen claim that a two year old should not be allowed to serve more than eight or ten mares, not oftener than five or six days apart. A three year old should serve not more than twenty-five or thirty during this season, and not more than three mares a week. A four year old can serve forty or fifty mares at the rate of three mares every two days. Stallions five years old and over should not serve more than two mares a day and a larger percent of foals will be obtained if they serve less than two a day. A stallion that has been properly handled and cared for should be a sure breeder till he is twenty or twenty-five years old.

Examine mares before you breed them. Don't breed every old mare that comes along. A new stallion in a neighborhood will get all the barren mares the first season unless his owner is careful. Don't expose your stallion to disease if you suspect it. Breed mares that look suspicious with an impregnator or a capsule and avoid any risk of infecting your stallion and spreading the disease.

THE BEST USE FOR SKIM MILK

All skim milk should be used—none wasted. It should furnish the maximum of food to human beings and does this better when used direct, as cottage cheese, prepared buttermilk, or other by-products, than when fed to animals and converted into meat. Surplus skim milk may be used economically to feed hogs, yet 100 pounds of it, which will produce 15 pounds of cheese, produce only 4.8 pounds of dressed pork if fed with corn. Skim milk if made into cottage cheese furnishes nearly seven times as much protein and nearly as much energy as the dressed pork it would produce. Of course the most nourishment is obtained when skim milk is used direct, either for drinking or cooking. As far as possible, therefore, skim milk should be used for human food and only the excess fed to livestock.

Buttermilk is equal to skim milk for feeding hogs, while whey is half as valuable. Whey, being low in protein, is not well suited for young pigs and should be fed to older animals.

Ordinary grass pasture, or green rye, oats, sorghum, rape, clover, alfalfa, peas, or beans can take the place of skim milk after the little pigs get a start. Much green feed can be raised without greatly reducing the acreage of other crops.

Calves and pigs do well when some skim milk is fed, but they need it only for a short time and in limited quantities. Except when fed to very young animals, skim milk is fed most economically when supplemented with grain. For dairy calves skim milk may be substituted in part for whole milk on the tenth day. If the calves are vigorous they should receive a little grain and hay at two weeks of age, and it is safe to discontinue the skim milk five or six weeks later.

By substituting grain, green feed, buttermilk, and whey for skim milk in animal feeding, much skim milk may be released for use in cooking, for condensing, or for making cottage cheese.

IMPORTANCE OF MORE HOGS

How often we have read of the hog as a mortgage-lifter! I know this is true, because I have seen it work out several times.

Again, the question is asked: Are hogs profitable? They are, if properly handled. A great deal depends upon the man that raises any kind of livestock, and hogs are no exception to that rule.

Then the question is often brought up: How many hogs should I keep? This largely depends upon conditions, size of the farm, etc., and must be worked out by the one who wishes to raise them, for he is the judge on just how much feed and by-products he will have each year that he can use for this purpose.

Every farmer should raise at least enough pork for his own table and some to sell. Almost any farmer, no matter where located, can do this. True, when corn is produced in large quantities, hog raising perhaps is the most profitable, but hog-raising can be carried on and with a profit in states also where corn is not raised in large quantities, and the fact that these states use a great deal of pork should be an inducement for those engaged in the business to turn out a larger quantity of pork each year.

Another thing of importance is the fact that hogs will multiply more rapidly than other livestock and in this way can be turned into profit a little sooner than other animals.

The main thing is to get started right—by selecting good stock. It costs no more to keep good hogs than it does to keep scrub stock.

HARDLY

Eager Shopper—"Where are the demonstrations today?"

Salesman—"No demonstrations on Thursday."

E. S.—"Not even a special sale?"

S.—Special sale in bathtubs—but no demonstrations."

TRAINING CAMP QUESTIONS

Corporal—Now, you've got to patrol these lines, see that the horses don't get loose and look after them generally.

Rookie (whose knowledge of horses is limited)—And what time am I to wake the horses in the morning.

REAL RED-HEAD IRISH

"Hav yez anny ancistors, Mrs. Kelley?" asked Mrs. O'Brien.

"And phwat's ancistors?"

"People ye sphring from."

"Mrs. O'Brien, listen to me," said Mrs. Kelley impressively. "Oi come from th' rale sthock of Donaghans that sphring from nobody—they sphring at them."

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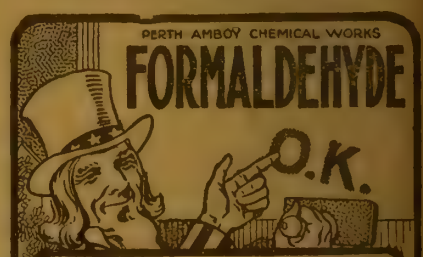

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100 WILLIAM STREET NEW YORK 6

Scrap Metal On The Farm

By the United States Geological Survey.

The shortage in the supply of the iron and steel, which this country must have in increasing amounts if the war is to be won, has developed a new source of income for the farmer, and not merely a few farmers but most farmers.

The attention of farmers is called to the fact that even at the recently fixed prices of iron and steel it should be possible for most farmers to reap an overlooked profit through the sale of the old iron and steel scattered about their premises; that the saving of such old scrap metal will help to meet the present serious deficiency in the supply of iron and steel; that the use of the old metal will accomplish savings in coke which is now to be had only at unprecedented prices; that the delivery of the old iron and steel at foundries far from iron mines and big steel centers will correspondingly relieve the excessive strain on the mines, some of the furnaces, and the railway and boat traffic in the coke and iron producing districts. The farmer who turns in his junk while the present prices prevail is likely not only to make a clear profit over the cost of hauling and freight, but, through increasing the iron and steel supply, he is contributing to the successful prosecution of the war.

Iron and steel are needed and must be had for innumerable things—for guns, shells, ships, bridges, buildings, docks, automobiles, airplanes, rails, cars, engines, pipe, oil-well castings, etc., and for export to the allies, Italy in particular being badly in need of steel for all purposes. This is the main fact.

In some States scrap metals have long been more or less fully taken care of, mainly by the ubiquitious junk man, and along most railways and about most industrial plants they are now salvaged systematically. However, in the greater part of the United States little attention is given to saving the old metal scattered about the industrial plants of the farmers, where abandoned binders, plows, mowers, rakes, etc., decorate the fence corners and roadsides, and discarded stoves, pumps, pipe, and small utensils rust about the barns and sheds. A considerable part of this junk is already on wheels with tongue and whiffletree attached, ready in fact to be "walked on its own legs" to the freight station.

According to the census returns there were in 1910 about 1,265,000,000 dollars' worth of agricultural machinery alone on the 6,361,502 American farms. Farm implements, not including stoves, chains, tools, etc., valued at about $165,000,000, are sold anually. A considerable part of the cost of manufacturing this farm machinery lies in the metals used, and the metals include not only iron and steel of various grades and values, but occasional small parts of brass or copper. Most binders and mowers have one or more bearings lined with Babbit metal containing tin, now worth about 60 cents, and lead worth 10 cents per pound. On the whole, excluding the metals used in railroad construction and transportation, or in city engineering and building, by far the greater part of all the iron and steel produced in this country in normal years is shipped out to the farm. It has been roughly estimated that three-fourths of this metal stays on the farm. As to this question, the farmer can judge for himself. How much of this is lying around on your premises, Mr. Farmer? If you have any—and you probably have plenty—it is a good time to consider its disposal while the war lasts and the prices are high. Besides, your country needs the metal.

Many farmers will take advantage of the opportunity to recover a profitable revenue from this overlooked and waste product; others, according to distance from the markets, may sell at little or no profit, except the satisfying sense of patriotic duty performed. Still others remote from the consuming foundries and furnaces can not afford a high cost of delivery which may far exceed the price received for the junk. Information should be secured in advance on this question. The Geological Survey suggests that farmers take up the question through the grange, the alliance, the farmers' unions, State experiment stations, the farmers' institutes, and other similar organizations, with a view to ascertaining the location of the best market, probably the nearest foundry or junk dealer; the cost of transportation; the best prices obtainable for the different classes of junk or implements; and the quantities of junk that can be used at the foundry or handled by the dealer. The same agencies might well arrange for co-operative local action on the part of the farmers in the different communities, fixing dates when cars would be in readiness for loading the old metals, informing the farmers as to possible grading of their junk, and attending to railway transportation, delivery, and possible settlements at the points of consumption.

Co-operation should bring the best results. Care should be taken not to overwhelm the furnace or consumer by all shipping at once, so that too great quantities are delivered within a short period, for it is important to bear in mind that many foundries may not have the junk capacity or the extra labor needed to assort and break up great quantities of scrap when it is delivered. Somewhat definite arrangements should be made in advance of shipments, and these can best be accomplished by some such agency as those suggested above.

The coming autumn, winter, and early spring should be the best time for gathering up the scrap metals, getting in touch with the markets, and arranging community shipments. The farmer should learn whether he is too far from markets and should ascertain the scope and extent of the market demands. There is plenty of time within which to gather and ship his scrap, but his co-operative information system should be organized now. The farmers have many hundreds of thousands of tons on hand; the prices are unprecedentedly high; the country needs the metals. From the economic standpoint it is a question of profitable thrift, of relieving in part the shortage in the metals, of conserving the iron ore and coal in the ground, and of service to the country.

TRACTORS vs. HORSES ON 80 TO 250-ACRE FARMS

Alfred Jones.

The competition between tractor and horses which began a few years ago, has now progressed far enough so that we are able to draw some conclusions which should be of intense interest to every farmer, and especially to farmers of 80 to 250 acres.

Today we find the tractor generally conceded to be a very profitable investment for the large farmer who plows and prepares large tracts of land for crops. But the 80 to 250-acre farmer, in most cases, is yet to be convinced that his small acreage justifies the purchase of additional equipment of so expensive a nature. He figures, and rightfully, too, that as long as he must keep horses to cultivate and do other farm work that they must also do the plowing if they are to earn their keep.

In spite of this general feeling, the writer wants to go on record in the prediction that the coming year will see some remarkable development in the tractor and farming industry which will not only make the tractor profitable to the owners of small farms, but well nigh indispensable even to eighty-acre one. In fact, the best tractor authorities in America expect these developments to increase the number of tractors in use from 34,000 (today's figures) to, in the neighborhood of 700,000 within the coming five to ten years—provided manufacturers are able to turn them out.

What are these developments to be? What will the remarkable improvements be, which will make tractors available to even small users? Will it be price? Will it be design? Or, will it be a tractor which will do a very large percentage of farm work without horses—thus eliminating the expense of buying and keeping horseflesh?

The latter solution would seem to be the most logical, because the double expense of keeping both horses and a tractor seems to be the greatest obstacle in the way of the profitable use of the tractor on small farms.

The small farmer of 80 to 250 acres, given a moderate priced tractor of light weight, which can be successfully operated by one man—a tractor that will plow, disc, drill, cultivate all row and hill crops, run the mower, binder, and besides do many belt work jobs, will be able to eliminate most of his horses. That, it is believed, will solve the tractor problem on the small farm.

And, going a little farther, a tractor like this will solve also many other serious farm problems. The work will be done quicker and easier. Much of the drudgery will be eliminated. The chores will be lighter and done earlier. The crop will be bigger and surer, because deeper plowing and more frequent cultivating will make failures more rare. Farm life will be pleasanter and more inviting. Farm boys will stay on the farm. And thus we might continue to detail the splendid things which tractor developments of the very near future undoubtedly holds in store for the farmer of 80 to 250 acres.

HOW TO TELL THE RANK OF OFFICER

It is possible to tell an army man's rank by any one of a dozen details about his appearance.

Take for instance the cord on the soldier's hat. If it's a plain blue cord, it belongs to an infantry soldier; if it's red the wearer belongs to the artillery, and if yellow to the cavalry. The hat cord worn by an officer is of black and gold with two little gold acorns.

When caps are worn the soldier's cap is the same shape as the officer's, but it is minus the braid and bears in front the crossed arms of his service and the regimental number. The officer's cap has a band of braid and a coat of arms indicative of the state. Regular officers have the U. S. coat of arms.

The collars of the coat also tell their tale to the experienced eye. The soldier's collar has a disc of bronze with the name of his state; if a regular it has ,'U. S." On the other side of the collar another disc gives his regiment company and arm of service. The officer's collar has no discs. It tells his state, arm of service and regiment. If a regular officer, the state is omitted and the symbol "U. S." is used. The arm of service is indicated by crossed rifles for infantry, crossed sabers for cavalry and crossed cannons for artillery. First lieutenant has a silver bar, and if a captain, two bars.

If a coat sleeve has two rows stitching and nothing else, the wearer is a soldier. That of the officer is distinguished by a row of brown braid.

The overcoat of a private or non-commissioned man simply has a cuff or else a strap of cloth which buttons the sleeve tight around the wrist. But the sleeve of the officer's coat is cuffless. If it is perfectly plain, without braid, the wearer is a second lieutenant. A soutache of one row indicates a first lieutenant; two rows, a captain; three rows, a major; four rows, a lieutenant colonel; five rows, a colonel. If general officers, the stripes are broad, black and horizontal.

Even the buttons at the back of an overcoat will tell you at a glance whether the wearer is an officer or otherwise. If the two buttons are bone, it is the coat of an officer. If they are bronze, and have the coat of arms of the United States, it proclaims the wearer to be an enlisted man.

The leggings of a soldier and those of an officer are also different. Those of the former are olive drab canvas with lacings, while those of the latter are of leather.

A man who is steadily employed finally had a day off and decided to go fishing, taking his luncheon with him. When he reached the creek he discovered that he had dropped the lunch packet somewhere on the road, and hastened back to look for it. Presently he met a husky negro, who was looking happy and picking his teeth.

"Did you find anything on the road as you came along?" asked the gentleman.

"No sah," answered the negro. "I didn't find nothing. Couldn't a dog have found it and eat it up?"—Everybody's.

FLIERS OR GROUNDERS

"You're foolish to marry a woman who has money. She will always be throwing it up to you.'

"I don't care in what direction she throws it, so long as I get it."—Chicago Daily News.

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Nov. 24-27

SALE DATES
Dec. 20-22
24 and 29th.

Tickets sold in November Return Limit Jan. 31, 1918

Tickets sold in December Return Limit Feb. 28, 1918

For tickets and further particulars see Agents, Salt Lake Route or address
Wm. Warner, A. G. P. A., Salt Lake City, Utah.

THE NECESSITY OF INCREASED MEAT PRODUCTION

(Continued from page 1)

much more widely extended scale. An increase in pork fats can also be made more rapidly than an increase in vegetable fats. It appears to me, therefore, that we must concentrate on the increase in the production of hogs if we are to answer the world's craving for fats. Fortunately our situation during the coming year lends itself to this end.

America Has Enormous Feed Crop in Hand.

Due to the blessings of the Almighty and the energy of our farmers we have secured one of the largest corn crops in our history. We also have abundant crops of oats, barley, kaffir corn, soy beans, velvet beans, cottonseed and peanut meal, and we will have a larger supply of mill feed than normal. Not all of these are hog feed, but they will enter the general feeding question by adding to the general pool of feed.

If we aggregate all of the feeding stuffs, and if we subtract the amount of fodder grains which we can expect to export in view of the present shipping outlook, we will find one astounding fact which should give American farmers pause: We have today somewhere near the equivalent of 1,000,000,000 bushels of feeds more than last year. This is an increase of nearly 25 per cent—for which we have no corresponding number of animals to feed unless we begin to increase them at once. In other words, as our animals have not kept pace with our increase in concentrates, we have much more feed this year than we have animals to eat it. Therefore, if farmers are to find markets for feed, it must be to a great extent through an increase in animals.

The monetary interpretation of this situation must be that we will have a low range of prices for feeding stuffs and, in view of the European situation and our own shortage in hogs, we will have a high average price for pork products. Therefore, it must be to the vital advantage of every farmer to raise hogs.

Start a "Keep-a-Pig" Movement.

This situation is one that can be partly solved by our suburban population. If every suburbanite took to his care a pig and fed it on the house garbage, he would increase our fat supply and do so without call upon our general feeding stuffs. In Germany 4,000,000 hogs are supported by these means. We need a "Keep-a-pig" movement in this country—and a properly cared for pig is no more insanitary than a dog. Such a movement would necessarily require some changes in village and urban ordinances; but the national welfare would be warrant ample for such a course of action.

HOG CHOLERA CONTROL

Our state is very free from hog cholera at present time but two out breaks occured last week one in Utah County, the other in Box Elder county. They were reported immedately to state officials and are now under control.

Although hog cholera can not be completely eradicated under present conditions, losses from the disease can be materially reduced by education and organization of hog raisers in the application of proper sanitary measures and the proper treatment of hogs with anti-hog-cholera serum. This has been shown by the results obtained.

Our government has been experimenting on control of hog-cholera for some time.

One of the important results, is the fact that the work while effective in reducing the disease, was not repressive while in progress on the hog-raising industry. On the contrary the industry thrived in the experimental counties to a greater degree than in adjacent counties in which no control work was under way.

Actual statistics were taken in the experimental counties and careful estimates were made in the adjacent counties. These show that in one group of three counties where the control work has been under way four years the percentage of loss from hog cholera has remained constantly from one-fourth to two-fifths the percentage of loss in the 15 surrounding counties. In another group of experimental counties the average percentage of loss as compared with that in 18 surrounding counties was reduced from approximately nine-tentas in 1913 to less than one-third in 1914 and to about one-sixteenth in 1915.

Community Needs In Combating Cholera.

Specialists who have supervised the control work of the department reach the conclusion that while the eradication of hog cholera can not be expected for a considerable time, the material reduction by the use of serum of the enormous losses which annually are caused by the disease in entirely pratcicable. The essentials for success in combating the disease, they point out, are interest on the part of hog raisers and knowledge of the disease; organization which will facilitate exchange of information as to outbreaks, and secure assistance; serum at reasonable prices and easy of access; and the available service in the community of persons skilled in administering serum.

If you do not know what hog-cholera is do not waste any time finding out when you have any sick hogs. We have men who are paid by the state to look after all contagious diseases of livestock, do not be afraid to ask for their services.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

WE WILL ACCEPT LIBERTY BONDS ON THESE FARMS.

We had a telegram this morning from New York City from the attorneys, who have full power to act, and can deliver a first-class warranty deed, free and clear of all incumbrances, telling us to sell one of the very best farms in the Bear River valley, belonging to a man in Germany. The farm contains 72 acres, and lies immediately adjoining the town of Tremonton. We have the land across the fence from this for sale at $350 per acre. This farm has beautiful improvements, house, barns and other outbuildings. Has a full water right in the Bear River canal and is under a high state of cultivation. The telegram informed us to accept $175 per acre, $5000 down, fifteen years on the balance at 5 per cent interest. This is one of the greatest offers on a first-class, improved farm that has ever been offered through our office, and we feel that anybody that is able to make the first payment and would like to get a first-class farm, near a good town, in one of the best valleys in western America, where social conditions, schools (high school included), water, climate, railroad, electric light, in fact everything it takes to make a home, is found on this farm. The farm must be sold within the next ten days. You can draw your own conclusions as to why this farm is being sold, the man now living in Germany.

We have, right adjoining the town of Preston, some of the best land in Cache valley. This land is under a high state of cultivation and well improved; has been known for years as one of the leading farms both in point of production and location, and character of soil, in the entire Cache valley. The man has moved away from Cache valley; has retired from business; is desirous now of selling his property on very good terms. All he wants is enough to know that the property is sold, and giving a long time on the balance, or he will consider taking Salt Lake City property in exchange. If you are looking for a home right near one of the best towns in this part of the country, this certainly will appeal to you. This property ranges in price from $150 up, with a first-class water right.

On the state highway, two miles west of Tremonton, we have 185 acres of highly cultivated land, with a 10-room house, barns and other outbuildings. This house has a hot-water heating system, sleeping porch and every modern convenience; good orchard; water piped to the house for domestic purposes. This farm lies on the corner of the state highway and the country road, with a beautiful row of trees, a nice lawn, hedge, and the surroundings are beautiful. This place has been one of the leading farms in the Bear River valley for the last twenty years. It is under a high state of cultivation and can be had for $160 per acre, on terms.

In the same neighborhood, 40 acres, without any improvements; has been farmed for twenty years; for $115 per acre; one-fourth down, ten years on the balance, 6 per cent.

We have several first-class farms for sale in Salt Lake county. One farm of 42 acres of $11,000; another farm of 113 acres; this farm has an 8-room brick house and a 3-room frame house; has a good barn and other outbuildings. It is all under a high state of cultivation; has 11 head of fine horses, 7 head of good cows, 40 head of hogs, chickens; all machinery to run the place. There are seventy tons of good hay which go with place; 1000 bushels of grain, and other crops and machinery too numerous to mention. All goes for this price. This property is one of the best farms in Salt Lake valley and can be had for $25,000. We will accept some Salt Lake City property in exchange for this.

Just below Fourteenth South we have one acre, with a new, two-room house, for $800.

In Cache valley we have one of the best ranches in that part of the state, containing 244 acres. This ranch is under a high state of cultivation and has been farmed for 60 years. There is a good house, containing six rooms; large barn, that will hold ten head of stock; cow sheds, granary, chicken houses, hog pens; in fact, all buildings necessary on a farm and ranch. There is a first-class spring of water piped into the house and to the barn. All kinds of plows, harrows, grain drills, disc harrows, threshing machine, hay derricks and other tools too numerous to mention; 25 head of cows, 12 head of first-class horses. This property is on the main county road and right near one of the best towns in Cache valley, and has an independent water right, maintenance absolutely free. This farm is planted to grain, alfalfa, timothy, and clover, two acres of orchard, about one-eighth of an acre in small fruit. The farm is particularly adapted for stockraising, dairying and dry farming. However, there is a lot of first-class sugar beet land on this farm. We are offering this farm at the ridiculously low price of $85.50 per acre. In addition to the 244 acres there is eighty acres of pasture land adjoining that will be thrown in with the sale free of cost to the purchaser.

KIMBALL & RICHARDS,
"Land Merchants,"

54 Main Street,
Salt Lake City, Utah,
Phone Was. 963.

FARM AND RANCH DEPARTMENT.

We Write Fire Insurance.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

FEDERAL LAND COMPANY
Ogden Utah

Fill out the pledge card on page eleven and mail it today. The information will help the committee to increase the number of hogs in Utah next year.

ADVANTAGES OF BONDING A DRAINAGE DISTRICT

(Continued from page 7)

this plan of financing best meets the requirements of the great majority of land owners. In the event that there are land owners within the district financially able to pay for the reclamation of their lands at once, they may do so. The drainage law provides that any land owner may pay the full amount of the benefit assessed against him and be released from the bond lien. If he chooses, he may permit his lands to be bonded and purchase bonds in sufficient amount to cover the assessment against him. However, it is generally the case, that he can make more profitable use of the amount of money involved.

The Utah Drainage Statutes provide that drainage bonds shall not sell below par and that they shall not draw interest in excess of 7 per cent per annum. It is necessary to advertise a proposed bond issue and the bonds must be sold to the firm bidding lowest on the interest rate, or highest premium in case the bids are the same as far as interest rate is concerned.

FALL PLOWING

By Mark Austin.

Am very glad to know that a large percentage of the farmers have their lands already fall plowed and that most of the balance are very busily engaged in this work, realizing the benefits to be derived from Fall plowing. It is very, very important that this work be done for various reasons, one of which is so the seed bed can be quickly put into shape in the spring to give the beets the full season in which the grow. Some of the lands that produced a light tonnage this season on account of the short growing season and somewhat unfavorable conditions, will no doubt, give a heavy tonnage next year, because quite generally when a light tonnage is raised one year it is followed by a heavy tonnage the following year.

Where the beet tops can possibly be spared, now that it is too late to silo them, they should be plowed under; this will give one or two tons of beets additional per acre, and FALL PLOWING especially on heavy lands ought to give one or two tons of beets additional per acre more than spring plowing.

Where alfalfa land is to be plowed under, it should be first plowed shallow, getting the crowns on top, and if the weather remains favorable for two or three weeks and the alfalfa roots are pretty well killed, especially on heavy lands, it should be replowed this Fall, before the weather freezes up. If the land cannot be replowed in the fall it should be done in the Spring.

Stubble land that is to be used for beets should be thoroughly disked and plowed under so it will go to the bottom of the furrow and decay. This is very important and will not only give a better crop but the land will be in better shape to work next season.

HOW TO GROW MORE POTATOES

(L. D. Sweet.)

We have been raising potatoes in America f r several generations, but in the light of what is happening and what will happen before our 1917 war crop of this feed has been consumed. I am thoroughly convinced that we are just on the threshold of a thorough understanding of this industry.

From farmer to ultimate consumer, the American public is beginning to rediscover the potato.

We have been growing large crops of potatoes—yes, something like 350,000,000 bushels of them annually—and suddenly a war emergency spurred our growers to increasing their acreage to a point where at present there is in sight about 117,000,000 bushels above the average crops for 1911 to 1916.

And this is the face of an average consumption of only 2.6 bushels per capita. Before the war, Germany consumed 9.4 bushels per capita; England, 8.3 bushels; France, 7.7 bushels.

The natural inference here is that, in order to make this war crop a success, the per capita consumption must be raised to take care of the increased per capita production on the farm. For it is a safe guess that the production per acre has not increased. Each farmer planted more acres to potatoes—that's all.

The problem of increasing consumption is open at both ends and must not be attacked at its middle. While on one hand we must launch a campaign among consumers to educate them at a full appreciation of the value of the potato as a food, at the same time we must wage just as aggressive a campaign among producers, to the end that they learn to produce potatoes not merely to sell but to eat.

We have not gained a national reputation for high fields of high-quality potatoes. These reputations are for the most part severely localized. Nor, as a whole class of farmers, have we developed great efficiency in handling the crop from field to market.

As a bit of cold facts, the per acre production of potatoes in America is the lowest in the world. And this is due solely to the fact that we do not sufficiently fortify our soils with the fertility necessary to stand any great increase. Soil fertility and simple mathematics are the answers to increased production.

An acre measures 210 square feet Potato rows three feet apart are in number 70 to the acre; if the hills are three feet apart, the total number of hills will be 4,900. And with an average soil, that's about as heavily as they can be planted.

In Maine, where the growers average something like one ton of artificial fertilizers to the acre, they plant their rows taree feet apart, but their hills are set one foot apart. This gives a total of 14,500 hills to the acre. Abroad, where the question of fertility is so carefully considered that potatoes are grown only one year in six on the same land, they plant between 24,000 and 26,000 hills to the acre.

In 1911, Matthew Wallis was knighted by King George V for having raised 119,800 pounds of potatoes to the acre. Astounding? Well, he put his land into such condition that it could stand 36,000 hills to the acre, that's all.

And that's all there is to our problem of incerasing production.

PUBLIC HEARINGS ANNOUNCED ON FEDERAL GRAIN STANDARDS

U. S. Department of Agriculture invites constructive criticism from persons engaged in production, marketing and utilization of corn and wheat.

In order that the Federal standards for shelled corn and the various wheats may be made to meet fully the practical requirements of the various interests engaged in the production, marketing and utilization of such grain, public hearings for the submission of constructive criticism on the standards and rules and regulations under the United States Grain Standards Act, are announced by the Secretary of Agriculture to be held in 17 cities throughout the country.

Producers of grain and millers, merchants, inspectors, warehousemen, carriers, and other persons interested are invited to be present at any of the hearings to be held at Hotel Utah, December 14, 1917, at 1 p. m. It is urgently requested that any recommendations offered at the hearings or by mail be made in definite form and refer to specific class, subclass, grade, regulation, section or otherwise, as the case may be. General statements relating to the standards or to the rules and regulations will be received, but it is pointed out that general statements do not assist greatly in arriving at definite conclusions on specific changes.

Standards for hard red winter wheat, soft red winter wheat, common white wheat and white club wheat, have been effective since July 1, 1917, and for all other wheats since August 1, 1917. It is believed the standards and the rules and regulations have been in force long enough to afford substantial basis for consideration of modifications or amendments.

Your Winter's Supply

Now is the time to check up your winter's supply of stock feed. When you order, do so with the idea of securing the utmost results with the least outlay. You'll find that—

SUN RIPE

Stock Feed

is the last word in Stock Feed. It is scientifically compounded, with just the right elements in proper proportion to produce desired results. It's the feed your cows and other stock like, and it makes them contented.

Utah Cereal Food Co.

Ogden, Utah.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE

AND

SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

30 DIFFERENT MAGAZINES. Late issues. Value $3.00. Yours for 25c prepaid Eastern Bureau, New Egypt, N. J.

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS

Provo Utah

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.

Virginia, Idaho.

"Home of the Champion Durocs"

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.

Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.

Mailing bags for samples sent fr .

THE MANGELSDORF SEED CO.

Atchison, Kansas.

FOR SALE

Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.

H. E. WALKER

Box 964, Salt Lake City, Utah.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER

Buhl Idaho

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN

Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

REO

The GOLD STANDARD OF VALUES

Salient Features of the Reo Six

50 HORSE POWER, Six cylinder motor cast in threes.
REO DESIGNED, Reo made—as are also all other units including body and top.
126 INCH Wheel Base.
CANTILEVER rear springs—Semi-elliptic front springs.
FULL FLOATING rear axle.
TIMKEN BEARINGS throughout.
NOISELESS spiral-bevel driving gears.
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HYATT QUIET bearings in transmission—at all points.
MULTIPLE Dry-disc clutch.
BOTH BRAKES operated by foot levers and provided with ratchet locks. Extra large and both operating on rear hubs. No hand brake.
CLUTCH AND SERVICE brake are interconnected.
TWO UNIVERSAL Joints in drive shaft.
TORQUE SHAFT relieves driving mechanism of road stresses.
SUB FRAME carries motor and transmission.
EXTRA LARGE—and round—spokes in wheels.
OVER-SIZE TIRES—34 in. x 4½ in.
ONE PIECE drop forged front axle.
PERFECT LUBRICATION system at every moving point.
REO RADIATOR—Reo designed, Reo made.
REO-REMY Electric Starting, Lighting and Ignition system.
REO STEERING GEAR—exclusively Reo. No back-lash—self adjusting for wear. Positive.
MOTOR BEARINGS—even main crank-shaft bearings—adjustable from the outside.
50 PER CENT OVERSIZE in all vital parts—crank-shaft, axles, driving shafts, gears, frame, wheels, tires.

PRICE IS F. O. B. LANSING AND THE SPECIAL FEDERAL TAX MUST BE ADDED.

But the Final Answer Is—Upkeep

IT'S ALL RIGHT to exploit the speed possibilities of a car.

IT'S PERMISSIBLE to extol its wonderful "pick-up" and acceleration.

IT'S PERFECTLY PROPER to prove by any kind of stunt you choose that it will climb a hill, though nobody doubted its ability in any one of these directions.

DEMONSTRATIONS of power and of prowess; feats of endurance; and spectacular performances of a momentary nature are legitimate.

BUT AFTER ALL what do such freak tests prove as to the actual staying qualities of the car?

AND ABOVE ALL, what do they prove on the very subject in which you are most interested—cost of upkeep over a long period of years?

WE COULD AN' IF WE would, write a volume—yes a library—on the subject of performance of this Reo Six in all phases of automobile activity.

WE COULD TELL YOU, not of one, but of scores of Reo Sixes that have crossed the continent, with all the feats of mountain climbing, and trail following as well as of speed and mud plugging that trip entails.

BUT WE DON'T consider that important. To a Reo it is about as difficult as is your daily journey to the barn!

BUT WHEN OWNERS say that this Reo Six costs less, year in and year out, for upkeep than any other six of equal size and power with which they have had experience—that does prove something.

IT SHOULD INDICATE to you that a Six so built must be capable of any feat or test that any sane owner would ever call upon his car to perform.

AND THAT IS THE FACT—ask any Reo Six owner.

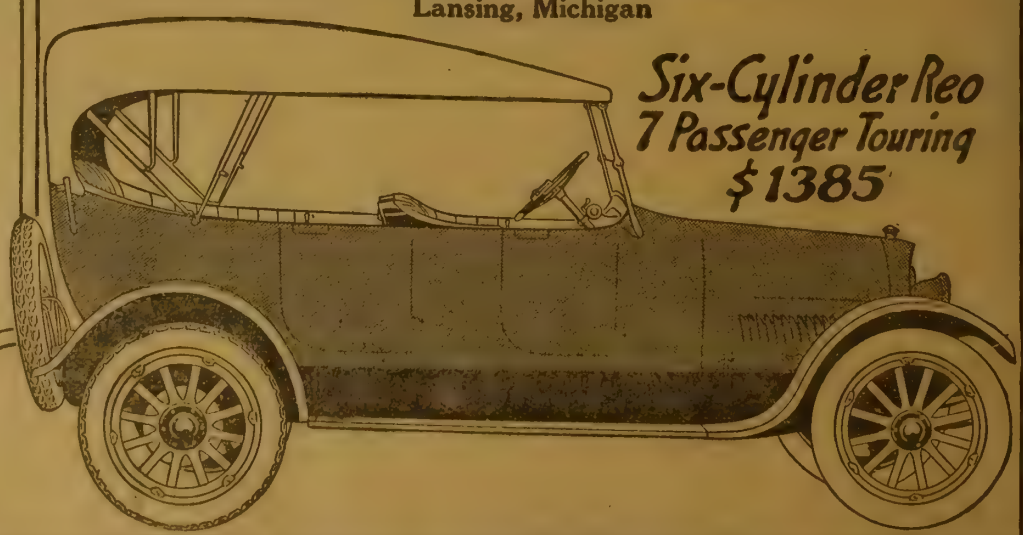
YOUR ORDER should be placed at once if you would secure a Reo Six of present quality and at the present price.

JANUARY FIRST there will be a substantial increase in price of this Reo Six—increased cost of materials and of manufacture render it impossible longer to make this car at this price.

SO ONLY ORDERS for delivery prior to and including December 31st will be filled at the present price.

SEE YOUR REO dealer at once. Place your order and obtain what is veritably a gold dollar for ninety cents.

Reo Motor Car Company
Lansing, Michigan



THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 19 LEHI AND SALT LAKE CITY, UTAH. DECEMBER 8, 1917

HOW TO MAKE GOOD USE OF STRAW

Evan Russell.

We are learning the value of straw. Years ago it was burned to get rid of it. Maybe we did not know how to use it or did not care to bother with it only burn it.

The high price of all kinds of feed is making the farmer, who expects to make money do a little experimenting with some of the cheaper roughages such as straw.

Straw means money to the man who knows how to use it. Nevertheless, fifteen per cent of our straw is burned and twenty-two per cent more is disposed of in more or less unprofitable ways. Only about two-thirds of the crop is fed to livestock or used as bedding although these are the real ways to turn it into money.

Large amounts of roughages are necessary to the economical feeding of cattle and there is no more efficient way of utlizing them than this. Straw lessens the need for expensive concentrates and when marketed as meat brings greater returns than are likely to be obtained by disposing of it in any other form. Indirectly the gain in soil fertility is enormous. There is no system of obtaining permanent soil fertility which equals in practical advantages the feeding of livestock. The plowing under of straw adds little more humus to the soil than manure and it does nothing else of value.

Burning straw means an almost total loss. The ashes, it is true, carry a certain amount of mineral matter into the soil but the quantity is too small to exert any appreciable effect. The usual explanation of the practice in those sections where it is followed is custom. But, because straw has been wasted in the past, is no reason for wasting it now. Feed it or use it for bedding. If circumstances actually make the keeping of meat producing animals an impossibility, plow it under. Never burn it.

The feeding of livestock has not brought as large a profit this year as usual on account of the high cost of feed. To meet this new condition some cheaper feeds must be used and straw is one of the roughages that can be profitably used. We have been overlooking the use of straw. It is comparatively cheap and in most sections there is a large amount of it. The big crop of wheat this year will have an equal amount of straw. Some of our farmers are already making good use of their surplus straw in so doing are reducing the feeding costs. Here is the way my neighbor told me they are doing it:

They gather all the coarse hay left in the mangers after feeding and run it through an alfalfa chopper, adding enough finely cut straw to make a day's ration for their herd. This finely chopped feed is then allowed to soak for 24 hours in a tank filled with molasses, liquor prepared by mixing molasses and water in the proportion of 1 quart of molasses to 9 quarts of water. Before feeding it is placed on a drain board and the surplus moisture allowed to drain back into the tank. After draining it is better to mix the grain to be fed with the molasses mixture, although good results can be obtained by placing the grain on the feed in the manger. The molasses used should be a good grade of crude molasses and can be purchased in barrel lots. Care must be exercised in using this feed as it will ferment or decompose in the manger unless it is kept clean. This mixture furnishes a bulky succulent feed and one that is eaten readily by the cows. It will go a long way in providing succulence in the ration where silage or roots are not available.

Another way in which straw may be fed economically is suggested by specialists of the United States Department of Agriculture for the wintering of a breeding herd of beef cattle.

(1)	Straw, pounds	10
	Silage, pounds	20
	Cottonseed meal or linseed meal, pounds	1½
(2)	Straw, pounds	20
	Cottonseed cake or oil cake, pounds	2
(3)	Straw, pounds	10
	Shock corn, pounds	10
	Cottonseed meal, pounds	1

If the animals appear to need more feed, the quantity of straw in any of these may be increased.

With this year's high-priced forage crop there will undoubtedly be a larger per cent of various kinds of straw used for forage than ever before. Oat straw is particularly good for this purpose and is by no means

(Continued on page 13)

When stacks of straw like this one are used to good advantage, it increases the profits of the farm. Take better care of your straw it will pay you well to do it.

The Gospel of the Clean Plate

By F. S. Harris, Director, Utah Agricultural Experiment Station.

This is a time when all wasteful customs and precedents must give way to economy. Never before has mankind been so tried in the crucible of privation. In times past single nations have been blighted by famine; today practically all the civilized world is engaged in the most terrible war of all history, and, with it, we may expect the scarcity of food that always accompanies war. Indeed in a number of the fighting countries a condition bordering famine has already been experienced.

During the years of peace and plenty enjoyed by the nation, many wasteful and extravagant customs have grown up. Some of these are silly in the extreme and have no basis in human need. Take for example, the custom of eating only part of the food that is brought to the table and mussing up the rest till it must be thrown away. Go into any restaurant and see the condition. A great steak is served, only the most tender part of which is eaten; the rest goes to the garbage can. Potatoes, bread, butter, vegetables, and all kinds of food suffer a like fate. Many men think they are not doing justice to their appetites unless they order and pay for twice as much food as they can eat. They do not seem to realize that by adding to the garbage can they are contributing to an empty dinner pail for some one else. Their shortsightedness leads them to believe that they ought to indulge in the luxury of waste if they can afford to. Their conscience has not been made sensitive to the needs of mankind in general.

In certain circles of so-called polite society it is considered quite the

(Continued on page 5)

The World Needs Hogs---You Need The Money---

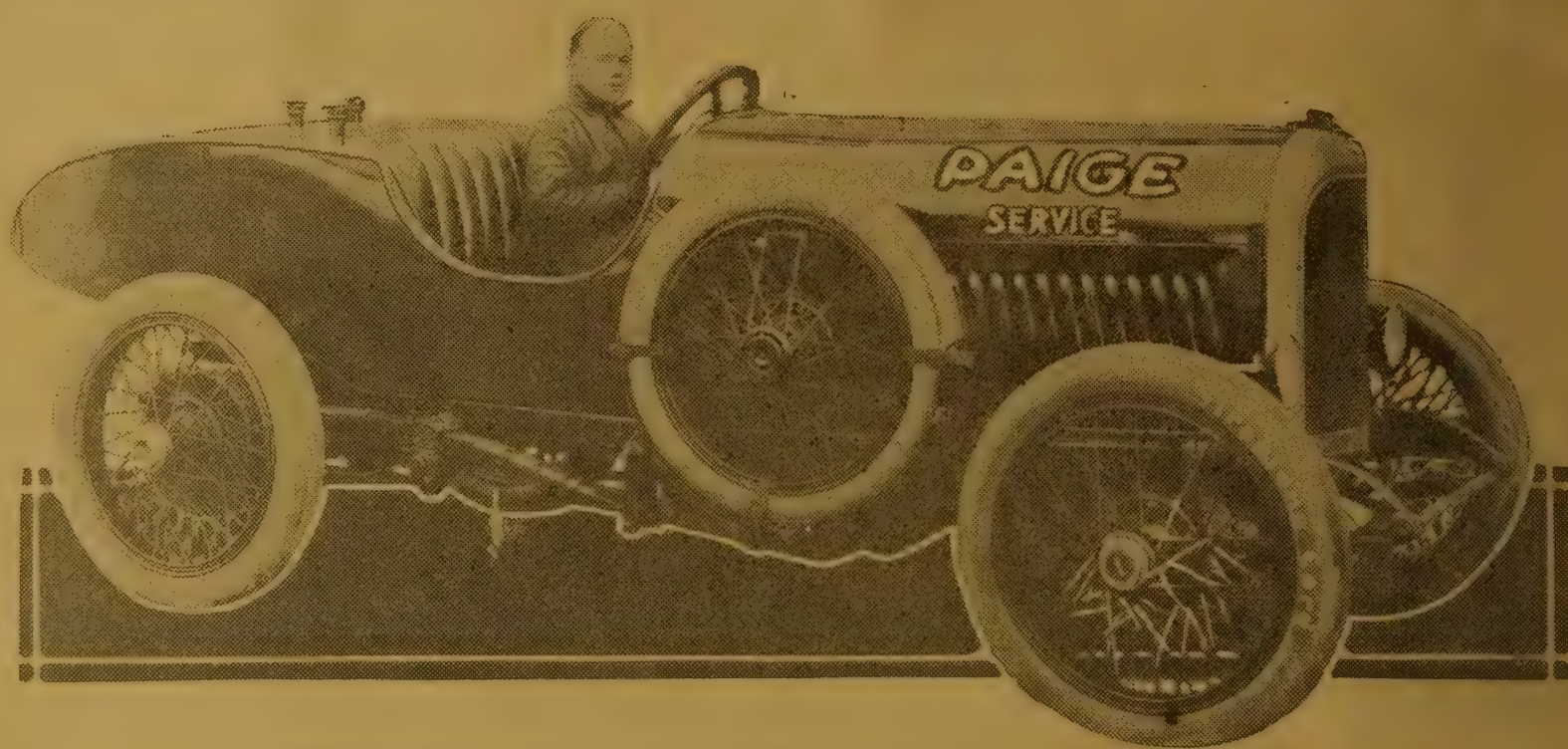
If You Raise Pigs, Both Needs Will Be Satisfied

Will Travel Continuously

From Logan to St. George---From Evanston, Wyo., to Ely, Nev.

A PERMANENT INSTITUTION

PAIGE SERVICE FREE CITY OR COUNTRY



The Famous "Yellow Streak"

Read what the Greatest Service in America is doing for Paige Owners

Manti, Utah, December 3, 1917.
Paige Motor Sales Company,
Salt Lake City, Utah.
Gentlemen:
I purchased from our local agency two and a half years ago a Fairfield 6-46 Paige car, the car has had some rough usage, notwithstanding this it has given me satisfaction. The factory expert Mr. Burrows called on me, made an examination of the car reports the car in good condition. I believe the Paige is an honest well built machine. The service is good the Sales Company gives free service which tends to preserve the efficiency of their machine.
Respectfully,
(Signed Cashier Manti City Saving Bank)
P. P. Dyreng.

Richfield, Utah, November 26th, 1917.
Messrs. Paige Motor Sales Co. of Utah,
Salt Lake City.
Gentlemen:
I take pleasure in stating that your Mr. B. R. Burrows has call on us, and has called on all the Paige car owners in our county, and will state that I think that this service will prove to be the best advertisement for the Paige car that you could get.
Thanking you for the past favors,
Yours for Paige business,
Christensen Bros.
(Signed) Per Martin C. Christensen.

Manti, Utah, December 3, 1917.
Paige Motor Car Co.
Gentlemen:
Mr. Burrows called on me and looked my car over. Will say my car is giving perfect satisfaction. I think the Paige service a splendid thing.
Yours truly,
(Signed) T. J. Anderson.

Panguitch, Utah, November 23, 1917.
Paige Motor Sales Co.
Dear Sirs:
Your service man Mr. Burrows has called on us and inspected and adjusted our Paige cars in accordance with your Paige service policy, for which we thank you.
Yours Sincerely,
(Signed) M. W. Bigelow.
Mrs. James N. Henrie.

LAST WEEK
THE
"YELLOW STREAK"
CALLED AND ADJUSTED
CARS IN
DAVIS COUNTY
OGDEN
BOX ELDER COUNTY
WORKING TOWARD
CACHE VALLEY

NEXT WEEK
CACHE VALLEY POINTS

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Logan, Utah.
W. H. Barnard
Brigham City, Utah.
Paige Motor Sales Co.
Ogden, Utah.

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W. H. Vowles
Tooele, Utah.
Walter Evans
Park City, Utah.

Pope Garage
Evanston, Wyoming.
Booth Mercantile Co.
Midvale, Utah.
W. A. Hines
Provo, Utah.

Helper Garage
Helper, Utah.
Williams & Heaton
Ely, Nevada.
Auto Lodge
Myton, Utah.

PAIGE MOTOR SALES CO., Salt Lake City

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

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VOLUME XIV. LEHI, UTAH, SATURDAY, DECEMBER 8, 1917 No. 19

Cost of Producing Canning Crops

The Weber County farmers have had a committee working for some time to determine the cost of growing canning crops.

In Weber County canning is an important industry and the committee spent considerable time to secure these costs. They were finally approved and presented to the Weber County Canners Association. Here is the report of the committee:

Ogden, Utah, Nov. 24, 1917.

Directors and Canning Committeemen of the Weber County Farm Bureau.

Gentlemen:

We, the canning committee, beg to submit the following for your consideration and action. We recommend as follows:

FIRST: We recommend that the cost of production be made the basis of price paid for canning crops for 1918.

SECOND: We recommend that we follow the government's suggestion, received by your committee, from the United States Food Administration, in asking a price for canning crops which will pay for the cost of production, plus a reasonable profit.

THIRD: We recommend that a uniform contract, as drawn up by your committee, for all canning crops, be used throughout the entire county and the same price paid to all growers for tomatoes, peas, beans and pumpkins.

FOURTH: We recommend the price of tomatoes for 1918 to be set at $15.00 per ton; said figure is based upon the cost of production which is as follows:

Labor Cost:	
Plowing	$4.00
Harrowing & leveling	2.50
Marking	1.00
Furrowing	2.00
Planting	7.00
Re-planting	1.00
Hoeing	10.00
Cultivating	12.00
Irrigating	3.50
Cost of making ditches	.40
Cost of cleaning laterals	.50
Cost of picking	20.00
Cost of delivery	8.00
Cost of boxes	3.00
Cost of fertilizing	8.00
Interest on land investment	20.00
Taxes on land	2.00
Taxes on water	2.00
Cost of plants	12.00
	$118.90
Average yield—9 tons per acre	$135.00
Profits per acre	$ 17.00
Percent on investment on land @ $250.00 per acre	6.8%

FIFTH: We recommend that the average price for peas for 1918 be set at $60.00 per ton; based on the cost of production which is as follows:

Labor Cost:	
Plowing	$ 4.00
Harrowing & leveling	2.50
Irrigating	5.00
Fertilizing	8.00
Cost of seed	18.00
Cost of making ditches	1.50
Cost of cleaning laterals	.50
Cost of mowing	6.00
Cost of loading	4.00
Cost of delivering	8.00
Land and Water Investment:	
@ $2.00 per acre @ 8% Interest	16.00
Land Tax	2.60
Water Tax	1.00
Total cost of producing one acre of peas	$ 77.10
Average yield—1½ tons per acre @ $60.00 per ton	$90.00
Profit per acre	$12.00
Percent on investment on land at $200.00 per acre	6.8%

It is further recommended that all differences between factory and the pea growers, of Huntsville, relative to planting of pea crop for 1917 and the differences between factory and Eden growers, relative to cost of equipment for elevating and stacking pea vines be settled and that factories give assurance that they will provide one viner for every 50 acres of peas grown and that viners be centrally located before any contracts are turned over to factory. We beg to state that the Eden people prefer not to grow Early Alaska Peas.

SIXTH: We recommend that the price of string beans for 1918 be set at $60.00 per ton; based on the cost of production which is as follows:

Labor Cost:	
Plowing	$ 4.00
Harrowing & leveling	2.50
Marking	1.00
Furrowing	2.00
Planting	7.00
Re-planting	1.00
Cultivating	15.00
Hoeing	10.00
Irrigating	3.50
Cost of making ditches	.40
Cost of cleaning ditches	.50
Cost of picking	120.00
Cost of delivery	4.00
Cost of seed	8.40
Cost of fertilizing	8.00
Cost of boxes	3.00
Interest on land investment	20.00
Taxes on land	2.00
Taxes on water	2.00
Total cost of producing one acre of beans	$214.30
Average yield—4 tons per acre @ $60.00 per ton	$240.00
Profit per acre	—$ 25.70
Percent on investment on land @$250.00 per acre	10%

SEVENTH: We recommend that the price of pumpkins for 1918 be set at $10.00 per ton; based on the following cost of production:

Labor Cost:	
Plowing	$ 4.00
Harrowing & leveling	2.50
Marking	1.00
Furrowing	1.50
Planting	3.00
Hoeing	8.00
Cultivating	10.00
Irrigating	3.50
Cost of making ditches	.40
Cost of cleaning laterals	.50
Cost of picking & loading	3.60
Cost of delivery	15.00
Cost of seed	2.00
Cost of fertilizing	8.00
Interest on land investment	24.00
Taxes on land	3.00
Taxes on water	2.00
Total cost of producing one acre of pumpkins	$92.00
Average yield—12 tons per acre @ $10.00 per ton	$120.00
Profit per acre	$ 28.00
Percent on investment on land @ $300.00 per acre	9.3%

EIGHTH: We recommend that in case canners refuse to come to the terms asked by Bureau, that each local bureau and canning committeeman secure signed contracts from all of their growers, for all crops mentioned above and turn said contracts over to canning committee to be sold for the best figure possible.

NINTH: We recommend that a written agreement be signed with canners and your committee.

TENTH: We recommend that we grant the request of the United States Food Administration, in filing this report with them, and all other figures pertaining to the cost of producing canning crops and prices received.

It is further recommended that if canners accept our request, that we co-operate with them in every way possible in growing and harvesting of said crops.

WHY BURN THE LEAVES

E. R. Bennett, Field Horticulturist.

"The melancholy days are here, the saddest of the year,
Of wailing winds, and naked woods and meadows brown and sear.
Heaped in the hollows of the grove the withered leaves lie dead;
They rustle to the eddying gust, and to the rabbits tread."

Bryant's picture of the New England November day has no counterpart in the Idaho autumn day except for the pall of pungent smoke that hangs over every village, town and city. People may be seen on every hand industriously raking leaves from the lawn and garden only to pile in the streets and apply the torch.

These leaves have served their time of usefulness on the trees but they have not entirely finished the mission given them by mother nature. Burning is waste. These leaves have a value. The amount of fertility destroyed by burning the leaves in our towns and cities is greater than is usually supposed. No material so quickly improves a soil for garden or greenhouse work as decayed leaves—the leaf mould of the woods.

Greenhouse men gather great quantities of leaves every fall, pack

(Continued on page 11)

Snap Shots In The Feed Lot

Written for the Utah Farmer by J. C. Wheelon.

The terribly long and severe winter of 1916-17 has filled the minds of every stock man, feeder and farmer with the deepest concern regarding the handling of livestock in the future, with the result that many stock men will reduce their numbers of cattle, horses and sheep and many small stockmen and farmers will refrain from stocking their farms with enough cattle to properly maintain the fertility of their soil. This latter dilemma is especially serious in view of the main project adopted by the Utah Farm Bureau of "More and Better Livestock on the Farm." Farmers tell me they can't afford to feed stock and many are disposing of their horses and using tractors for farm work. I know many farmers who have baled and sold their hay before it went into stack, some even are baling and selling their straw, thus the grain, hay, straw, sugar beets and beet tops are all carted or driven off the land all because they bring big money just now, thus robbing the soil of even the benefit of the roughage that is produced on the farm. There has never been a ton of straw or beet tops sold off the farms of Utah but has been sold for less than one half of their value for fertilizer alone.

We all realize that to make proper use of our roughage by feeding on the farm a better knowledge of economy in our methods of feeding is absolutely necessary.

I have loaned my "Wolfe's English Standards of Feed Values" and "Stewarts American Standards in Feeding Animals" to many inquirers, but they tell me they fail to interpret these chemical terms in actual practice and adapt them to our western conditions.

I am in receipt of numerous inquiries from men in Utah, Idaho and as far as Washington and Oregon for information on feeding values, economic compounds and comparative feeding values of our western grown products and by-products.

In the belief that it will serve our farmers, I have consented to submit a short series of articles on this subject. I claim no authority for the standards, my aim being to interpret and adapt them to our western practice.

The first thing to know is that the feeding value of any feed lies in the amount of protein and fat it contains, and the fact that no one kind of feed contains these two elements in the proportion to each other that is required by animals, the compounding of two or more kinds of feeds becomes important to balance up the ration in a manner that will give the animal what protein he requires without wasting fat that is not needed and vice verse, always including one or more kinds of feed in the compound that will give the animal sufficient dry matter and is low in price.

The following table shows how much of these two elements of feeding value (the real meat in the nut) we produce per acre of our fields in producing our crops and comparing them with each other:

Per Acre	Protein Lbs.	Fat Lbs.		Total Lbs.
Alfalfa Hay, 4 tons	846.40	110.40	=	956.80
Barley, 50 bushels	208.56	38.50	=	247.06
Oats, 60 bushels	185.00	83.60	=	268.60
Corn (shelled) 60 bushels	266.12	143.80	=	409.91
Corn ensilage, 10 tons	240.00	106.00	=	346.00
Oat Hay, 3½ tons	154.90	91.70	=	[illegible]

It is interesting to learn from this table that a 4 ton crop of alfalfa hay will give us more than double the amount of these elements than any other of the crops mentioned, and more than three times as much as some of them.

There are many surprises awaiting us in a study of this series, especially when we get into the relative amount of fertilizing elements crops remove from the soil, and the relative fertilizing value of these products when fed on the farm.

SUGAR BEETS

UTILIZING SUGAR BEET TOPS

An acre of beet tops from a twelve-ton crop of beets, if properly cared for, contains about as much food value as one-half acre of corn silage. The easiest way, but not the best way, to take care of beet tops is to graze animals on them. A great deal of food is trampled into the ground. The leaves dry and are blown away. The pieces of the beets left with the leaves dry out and become leathery, so that the animals can hardly chew them.

If milk cows are allowed unlimited access to beet tops they usually overeat. They scour easily and the milk has a bad flavor. Often they eat so much tops that they cannot eat alfalfa. Tops alone are not milk producing food; therefore, excessive feeding of beet tops often dries up the milk flow.

The best way to feed tops is to haul a limited quantity to the animals to be fed. In order to preserve the tops until they can be fed it is necessary to stack them in small piles in the field after they are wilted a little. This can be done with a fork, shaking it in order to avoid getting to much sand and dirt into the piles. Tops will keep in these piles until they are hauled to the feedyard, if they are not too green. If they are piled too green, or the piles are too big, they are liable to rot. Even after the beet harvest there is still time to pile the tops in the manner described.

Steers, hogs or young stock can be given as much as they will clean up. If they are given more they will waste a great deal. Brood sows should not be given too much, as they will get too fat.

Milk stock should not be given as much as they will eat. One or two forkfuls of the dried tops are enough per feed. Of the green tops more can be given. To maintain an even flow of milk radical changes in feeding should not be made. With a limited number of cows and a given amount of beet tops the best results are obtained if the tops are made to last until green pasture is available in the spring, even if this means only a small amount of tops per head per day. In some dairy districts in northern Colorado beet tops are made to last into May. Of course cows giving twenty pounds of milk or more per day receive grain, besides the hay and tops, but less grain is fed with tops than without it.

When sheep are grazed on tops they frequently try to swallow too hastily and often choke. During the first days it is necessary to watch them closely to avoid this.

Steers of good feeder quality, if given unlimited access to beet tops, with about fifteen pounds of hay per head per day, can be expected to make a gain of about 1.5 pounds per day under moderate weather conditions, but in cold weather considerably less.

A very important reason for feeding tops in the corral instead of grazing them is that when bedding is used a much larger quantity of manure is produced, which can be spread where it is needed most. The time spent in hauliny straw for this purpose is always a profitable investment.

Beet tops can also be siloed in pits. The pit can best be made just wide enough to allow wagon and team to drive through it, and as long as wanted. Of course, the deeper the better.

The tops are hauled green into the pit and the wagon and team driven over tuem to tramp them as tightly as possible. The more air that is excluded, the better the silage. When the harvest is finished the top can be covered with straw. The tops will keep this way more than a year. Usually only the surface is moldy and has to be removed.—H. Mendelson.

———o———

Payson, Utah, Nov. 22, 1917

Editor Utah Farmer:

We have been asked to give an estimate in general showing the economy in labor by using a topping machine and the equipment we have been using to go with it, in the harvest of our beets.

Our government and the Utah-Idaho Sugar Co. have been watching our progress for some seven years, and at various times we have given out a report, thinking that some of the largest farmers would see fit to take hold of the proposition as a real labor saver.

We economize on labor whenever it is necessary. On one ocassion we neglected to plow a heavy clay piece of ground for two years in succession due to the fact that we were unable to plow it in the fall, and raised a 31 3-10 ton crop per acre on the ground the second year. This very unusual tract had been previously well broken up alfalfa ground, covered with nine tons of manure per acre, placed on with a good spreader. In the Spring we use much care in preparing the seed bed. We have tried this same plan on the sandy parts of our farm and have found it a complete failure. We recommend Spring plowing on sandy loams rather than planting without plowing.

This little estimate will give you the cost of harvesting our beets per acre.

We have invited the farmers to see for themselves the great saving in labor by the use of the topping machine, and above all things the worry of keeping men on the job when conditions are not just right. We can tell you right now we brothers would not be raising beets today if it were not for the topper. Years ago we assisted John Devey & Sons to perfect a topper on our farm and have used the machine every year since. The original machine was a share type of topper. This year Devey has been endeavoring to perfect a disc topper and I am certain the disc machine will be a great improvement over the share type.

We have used a disc topper which was built by Huish and MsClellan, during the last week of our beet harvest this year. This machine also did excellent work and at a demonstration of both toppers held on our farm, the Utah-Idaho Sugar Co. and Government representatives declared that many of both machines would be built this coming year and used generally by the farmers as the topping machine is now a real success.

Our cost of operation was small and it makes it possible to raise sugar beets at a much greater profit than other crops we produce on our farm. With the following help we harvested one and one half acres of 20 ton beets per day, one man on topper one on a new Jonn Deere sulky puller and four girls to place the beets in ricks ready to be thrown on the wagon; the four girls work could be done by one man. We use a low farm truck for hauling the beets, as the hall is short, which makes it possible to load very easily. When the wagon comes all hands help work is much quicker ana cleaner, it keeps our test to two and three per cent. We pay the four girls $2.00 per day each and the men $3.50 which makes the average cost 50 cents per ton on the wagon. Otner years we have not exceeded 35 cents per ton. Of course you will note we are not figuring a cent for the two pony teams used on the topper and puller, any farmer who raises beets has the teams. If you wisn to add the cost of the teams you may do so and then have the exact cost of your beet harvest.

Signed FRANCOM BROS.
Per John H. Francom.

———o———

INEFFICIENCY ON THE FARM COSTS MONEY

Efficiency means accomplishing work in the shortest possible time with the least possible exertion. To be efficient does not mean to work harder; it gets more returns for the work done. Efficiency is frequently lacking on the farm.

Sometimes the horse trough is not placed near the barn. It may mean that it takes three minutes longer to water the horses. Yet when the horses are watered three times a day, the farmer loses practically ten minutes. In a year this would amount to sixty hours, or six working days of ten hours each. Wouldn't it pay such a farmer to spend four or five days piping his water to his barn?

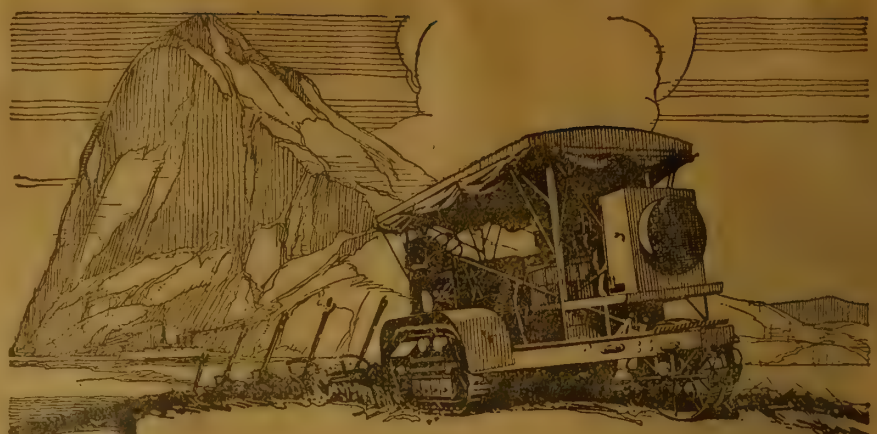
Sometimes the gate into a field is two hundred yards out of the way. It takes the driver five minutes longer to go round where the gate is than it would if the gate were in the most direct line. He uses the gate only once a week, yet in a year he would waste four hours going around by that out-of-the-place gate more time than it would take to put in a new gate.

I know of one farm where the water supply is a hundred yards from the house. On an average, half an hour a day is spent in carrying water from the well to the house. If a man were hired to carry the year's water supply at one time, it would take him eighteen 10-hour days. If he were paid only a dollar and a half a day, the water system on that farm would cost $27. A water system that would bring the water to the house and last a life time could be put in for less than that.

How many days per year is lack of efficiency costing on your farm?—Alfred Westfall, Colorado A. C.

———o———

It pays to be suspicious whenever you find a sick hog in the herd. Pork prices are too high to take chances with hog cholera.



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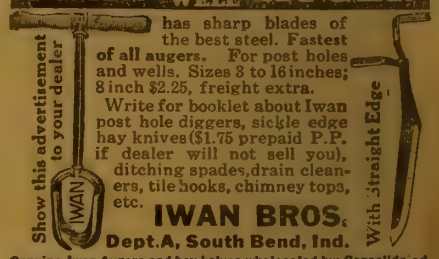

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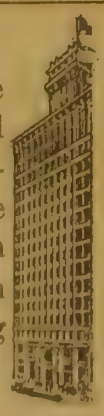


Walker Brothers Bankers
SALT LAKE CITY

SAVE FOOD BY DESTROYING RATS

By David E. Lantz, Assistant, U. S. Biological Survey.

On many farms rats and mice waste grain which, if sold, would more than pay the owner's taxes. To prevent so great a loss is well worth serious consideration by farmers at all times. In face of food conditions forced upon us by war suppression of the rat menace is a measure for economic gain as well as for national security.

The common brown house rat, known sometimes as the Norway, or sewer rat, is the worst mammal pest in the world; and in spite of man's incessant warfare against it, has increased in numbers and extended its range. Its dominance is due to remarkable fecundity and ability to adapt itself to all surroundings. It breeds from four to ten times a year and brings forth an average of ten young at a time. Females breed when four or five months old. The species feed on all kind of vegetable and animal matter.

While it is impossible to ascertain the damage done by rats and mice in the United States, all attempts to calculate the losses, based upon reasonable premises, result in totals that are astoundingly large. The direct loss cannot be less than $200,000,000 a year, and may be far greater.

It is odd that such a drain upon wealth should receive so little attention in ordinary times; but, when all our resources are needed to win a great war, further neglect of this cause of waste is criminal. We must destroy the rat and keep our food stuffs from its defiling touch.

A rat having access to grain will consume an average of two ounces a day or 45 pounds a year. When wheat is worth $2 a bushel, this amounts to $1.50. But the grain carried away and rendered unfit for use is far more than that actually eaten, and the average cost of keeping a rat on the farm or in a warehouse is from three to five dollars a year. Some farms and warehouses harbor hundreds of rats, an appalling tax on the owners of such premises.

Besides being an unparalleled waster of food, the rat is a menace to the life and health of human beings. It is said to carry and disseminate the germs of tuberculosis, spetic pneumonia, epidemic jaundice, measles, diptheria, typhoid, scarlet and other fevers.

Its parasites convey bubonic and pneumonic plague to man; its bite sometimes produces "rat-bite fever;" it is the active agent in prepetuating trichinosis in the pig; and it has been suspected of being a carrier of infantile paralysis. Besides, it is subject to loathsome diseases, such as rat leprosy.

Many agencies may be mobilized for rat and mouse repression. Farmers' clubs, women's clubs and other civic organizations can render a national and patriotic service by taking up the rat question locally and planning and carrying out campaigns for destroying rodents and protecting foodstuffs from their ravages.

The means suitable for destroying rats include traps, poisons, dogs, cats, ferrets, fumigation, and various weapons of offense. Traps, however will account for the greatest number of victims. The guillotine type of trap which kills by striking the animal with a wire fall driven by a coiled spring, is especially recommended.

Rat-proof buildings and the use of practical devices for keeping the rodents from stores of food and merchandise are essential factors in food conservation. No single method of keeping rats and mice from a building is better than the use of concrete in its construction.

Clubs may be organized for the express purpose of destroying rats. Such clubs usually offer monthly prizes for rat killings and hold contests. By the expenditure of comparatively small sums these associations accomplish better and more lasting results than have been attained by premiums of bounties.

The Bureau of Biological Survey, U. S. Department of Agriculture, is prepared to give instructions for destroying rats and mice and protecting foodstuffs from their devastations. Suggestions for the formation of rat clubs are also offered, and if called upon, the Bureau will assist local authorities in putting down the rat plague.

USING KITCHEN WASTE FOR HENS

When kitchen and table waste is to be fed to poultry it should be selected and prepared with a view to getting its full food value and at the same time making it entirely acceptable to the birds.

Not all the refuse and scraps from the kitchen is suitable for poultry food. Some things, as vegetable peelings, may be used when they constitute only a small part of the scraps, but when they are in excessive quantities it is better to dispose of them separately.

The same is true of coffee grounds and tea leaves. Fat meat in large pieces should not be put with scraps for poultry because a hen can swallow a much large piece of fat than is good for her. By cutting waste fat meat in pieces no larger than one would cut for himself at the table, and by making sure that the fat does not exceed ten per cent of the scraps fed at one time the dangers in feeding fat are avoided.

The best way to save kitchen waste for poultry is to keep a one gallon jar, of glazed or galvanized ware, with a cover in a convenient place, putting into this scraps of bread, cake, and meat from the table, remnants of servings of vegetables, cereals, pies, puddings, etc., and whatever waste from the preparation of meals is suitable to combine with these things in a mash.

Once a day the contents of the jar should be turned into a pail of appropriate size and as much ground feed stuff mixed with them as can be stirred in with a strong iron spoon or a wooden stirring stick. The amount and kinds of ground feeds to be used will depend upon the quantity of water with the scraps and whether any particular article predominates.

For thickening a mixture of scraps of ordinary variety a mixed meal of equal parts by weight, or corn meal, bran, and middlings is good. If there is an unusual proportion of very rich food in the scraps it may be desirable to use bran alone for thickening. The more meal that can be stirred in and still have all the meal moist the better. Mixing can be done much more easily and thoroughly by mixing in a pail having a capacity about three times the amount of the scraps mixed at one time.

If the mash with scraps makes more than one meal for the flock, the pail should be kept covered until the next feeding. As a rule it is not advisable to feed such a mash oftener than twice a day, but if mixed quite dry it may be fed three times. The occasion for this will exist only where scraps are so abundant that when thickened with meal they may be made the exclusive diet. This is not as good a ration as one containing some hard grain, but it may be used a long time without any bad results.

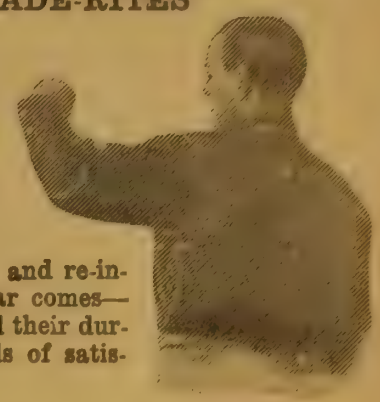
MAXIMUM CARLOADING URGED

American railroads are now moving more traffic than was possible under the old system of operation. Yet the traffic offering is still beyond the reasonable capacity of the railroads.

This situation presents the problem of further increasing carrying capacity in the shortest possible time to meet military needs and for distributing necessities among our people. New railway equipment can be added but slowly; factories are working night and day on Government war needs. Shortage of labor is a factor in holding back other improvements. A means immediately available for increasing car efficiency is heavier loading and prompt loading and unloading. This situation was pointed out soon after the entrance of the United States into the war and many shippers and receivers responded in an effective manner, but the response was not as general as desired.

Solve The Shirt Problem

By Buying "MADE-RITES"



You will learn what comfort and service a real work shirt can give.

They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

THE GOSPEL OF THE CLEAN PLATE

(Continued from page 1)

thing to leave on the plate a considerable portion of what is served. Those who eat all that is placed before them are likely to be considered uncultured. Even though a person be hungry and desires to eat all the food served to him, he must allow a portion to be returned to the kitchen and on to the garbage can, if he would win the full approbation of his associates.

While a custom of this kind may have some justification, it certainly cannot stand the test of time—at least till all the people are provided with sufficient food to keep them from starving. Formerly, it was thought that anyone could be as extravagant as his means would permit; but "the old order changeth." The public has taken a hand; wanton waste will no longer be tolerated.

A young man who had plenty of money wanting to impress others with his liberatlity, used a twenty dollar bill for the paper of a cigarette, which he smoked before some of his friends. A few months later he was reduced to want and had to borrow a meal ticket from one of the men who had witnessed his foolnardy extravagance. "Waste not, want not" expresses the well-known truth that is illustrated by the incident just related.

Careful estimates of the food supply of the world indicate that there is a shortage. If the war continues two or three years longer this shortage will be very serious. In the face of this condition and knowing that in Europe thousands of people are suffering from lack of food, who will be so un-Christian as to be wasteful? Realizing that the success of the nation at arms depends on an abundant food supply well conserved, who will be so un-patriotic that he will not help in this conservation? And knowing that economy, aside from war-time need, is right in itself, who will allow a silly and wasteful custom to prevent him from living the gospel of the clean plate?

President Taft was out for his afternoon walk in Washington one day when a flaxenhaired little girl ran out in front of him held up her finger, and exclaimed in a shrill baby voice:

"I know who you are!"

The President, thinking it not at all unusual that she should possess this information, but willing to gratify her, asked:

"Well, who am I?"

"Aw," she said teasingly, "you'r Humpty Dumpty."—Everybody's.

MUST HAVE BEEN SOMEWHERE

Mother—"That hole was not in your glove this morning, Molly."

Molly—"Where was it then?"—Hudson Observer.

FARMERS

ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

Utah Savings & Trust Co.

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W. S. McCornick, Pres.
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Lights with a Match!

NO torch needed with this new lamp. Just use a match as with the old time oil lamp. Gives a brilliant, steady, white light of 300 candle power, **brighter** than the brightest electric light, **safer** than the same oil lamp, **cheaper** than the cheapest candles.

300 Candle Power

Coleman Quick-Lite

makes and burns its own gas from common gasoline. No wick, no pump, no glass to break, no dirt, no smoke, no smell. Absolutely safe, no danger of explosion or poison. Fuel cannot spill—under all conditions over. Guaranteed Five Years—will last a lifetime. If your dealer cannot supply you, write nearest office for Catalog No.

Safest in the World

COLEMAN LAMP CO.
WICHITA, ST. LOUIS, DALLAS, CHICAGO.

A GOOD ONE

Judge—"And in the future see that you keep out of bad company!"

Prisoner—"Thank you, your honor you won't see me here again!"—Chicago News.

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OFFICIAL ORGAN
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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Save the brood sows and produce more pork and make more money.

Keep the tractor busy, do all the fall plowing you possibly can before it freezes.

Rats and mice destroy much human food, every one should destroy any found on his farm.

What do you know about wet beet pulp as a feed for dairy cows, have you tried any of it.

The spirit of the day is to save, to conserve. One lesson we will learn from the war is the value of thrift. The shortage of food makes it necessary to be careful in preparing and serving it. Extravagant habits must be stopped for our own good and in order that we may share with our allies and help win the war.

Rats and mice are a pest, they destroy all kind of food. There is no good reason why they should live, why not go after them, clean them out. Don't let them eat or destroy food we need at this time.

Sign the pledge card and send it to the State Food Administrator today. Help the committee by giving them the information they are asking for. Right now is when they want it.

In some sections of the State the snow is so deep that fall plowing and other work of that kind will have to stop. If you have been using a tractor put it away in such good shape that no time will be lost in the spring when you are ready to use it. Oil the plows, don't let them rust during the winter. Machinery is too costly now to allow any waste from lack of care.

NOW COMES THE ROUND-UPS

It will be only a short time until the annual round-ups and farmer's meetings will commence. This winter the programs will be timely dealing with the problems and needs of the farmer and to help him with larger production, with less labor, better conservation. In this way he can help himself and better serve his country and State.

SAVE THE SUGAR

Many of our citizens do not seem to realize the need of saving sugar. Cars can not be secured to ship our large supply of sugar where it is really needed so we have plenty. This is no excuse for us using so much sugar. We must do our part, eat and use less sugar so that we will have more to ship to those who are really in need. In Washington D. C. 15 out of 22 stores had no sugar to sell. All of the eastern states are feeling this shortage to say nothing of the extreme need for sugar in Europe.

There is need of us helping, eat less candy and other luxuries of the kind until the supply becomes normal again.

USE OF STRAW

The high price of feed is a very good reason why such roughages as straw should be used to the very best advantage. We must learn to conserve and use everything on the farm.

Straw and a little beet molasses make a very good feed according to a number of our farmers who have tried it out, in winter feeding of their livestock.

Money saved is money earned, so with our by-products, they should be used and made profitable for every farm, if saved, they are the extra profits that come to farming.

The value of straw when used as bedding for the comfort and care of our livestock is not known to many of our farmers. It will help to keep the surroundings dry and helps to increase the amount of manure so essential to our farms.

A WARNING TO LIVESTOCK MEN

Every precaution possible should be taken to protect our livestock. Just recently Dr. Hoggan the State veterinarian went to Delta and reports that fifty head of sheep died from the effects of poison tablets being put in the water they used.

Other cases have been reported where disease germs have been scattered for the purpose of reducing our food supply.

We must take the best of care of our livestock for our own protection and for the reason our food supply must be increased.

If any of your livestock are sick and you do not know for sure what is the matter, let the State officials know at once, as they are taking every step possible to prevent a loss. This is a case where we must all work together for the protection of our livestock.

KNOW YOUR COSTS

The reports of the Weber County farm bureau committee emphasizes an important thing to every farmer to know the cost of producing any certain farm crop. It is true some farmers may be able to produce wheat, beets or other crops lower than a neighbor. He may have different tools, the soil may be better adapted to certain crops than others, he may have used better seed and a dozen other things might enter into the cost. What every one should do is keep an account so they will know the cost. Then farming will become profitable. Knowing the costs you will be able to reduce them. Make a careful survey of your farm and plan this winter a crop rotation that is adapted to your soil and conditions and then keep careful records as to the cost.

MORE LIVESTOCK

What we need on our farms is more livestock. They are the profit makers, they will keep the farm well fertilized. Hogs, sheep, cattle, livestock of any kind will be profitable. We have plenty of feed this year and now is the time to increase your livestock.

More livestock is being fed and made ready for market on our farms today than ever before but we are not doing any where near as much as we should do.

The great scarcity of all kind of livestock in Europe insures that the price will not be any lower for some time. Even if the war was to end the shortage of livestock would be just the same and if the past is a good rule to follow the price would be higher after the war than during it.

Every reason for more livestock if you have any against it write us and tell us your reasons.

TRAITORS TALK SHOULD END

It is time that all unamerican and traitors talks should end.

For months we have heard in every town of the State from a few who seem to delight in talking against our government. Any man or woman who is in this free country of America and who may have the privilege of American citizenship, that does not appreciate it and who presist in talking against the officials of our government ought to be put some where for awhile so they will realize what freedom really means.

Every American worthy of the name is in this war to win and will do every thing possible to help. Many of us do not yet know what sacrifice we may be called upon to give, but we are going to win whatever the cost.

The death lists are already coming home. If these people think they can continue to slander and talk against our American people and defy the government they would do well if they kept their feelings to themselves, for the American people will not stand it much longer. If they presist in such traitorous ways they must suffer the justice due such ungrateful unamerican people.

HOG PRICES AND PACKERS PROFITS

In order to stimulate the increased production of hogs the food administration have made a statement that they will use all their power to see that hogs do not go below $15.50 on foot at Chicago. This does not mean but what hogs will bring a higher price than $15.50 this is the lowest, the minimum price. Some do not seem to understand this. The price is to be based on the price of corn fed to produce them. This is fair and every one who can should answer the call by producing more pigs.

The packers profits are now limited and controlled. Their profits—"shall be limited to two and one half per cent on gross sales of meat and nine per cent on the average capital necessarily used in the business."

With the assurance that farmers are to receive a price for hogs that will give them a reasonable return for feed used in growing them, we ought to double the number of hogs in this territory during the year 1918.

Two reasons are all we give as why you should do it, profitable and patriotic. Make money and serve your country and help feed the world with meats.

Fill out the pledge card on page eleven and send it in today to the State Food Administrator. If you have all the brood sows you need tell him so if you need and can grow more say so. Fill out the coupon today.

FOR UNITED SERVICE

The food situation is today tragically serious and hunger may imperil a conclusive victory for the Allied armies if the people of America do not exert their utmost effort. Presistent and methodical propaganda has been used against the work of the U. S. Food Administration and other undertakings to increase the country's effectiveness. Untruths have been fostered which have done more harm than battalions of German soldiers, because they have prevented this country bringing all its resources to bear against the enemy.

Loyal citizens have served the purpose of this insidious German Menace by repeating silly stories and grossly untrue rumors and by belittling the Food-Pledge. Any attempt to burlesque the "eat less" of the foods urgently needed for shipment overseas to the soldiers, and "eat more" of foods not so suitable for export assists the enemy and discredits what is being done in the interests of our men in khaki and the women and children of the allied nations.

The American whose heart is with the flag will back the efforts of the Government not only by deeds but by every word he utters. There is abundant reason to warn the people of this country against propaganda that lends assistance to the enemy and retards the organization and unification of the people.

POULTRY

SELECTION AND CARE OF POULTRY BREEDING STOCK

Health and Vigor.

One of the prime essentials in poultry breeding is to use only strong, vigorous, healthy stock. It is only by continuing to do this that a flock can be built up which will have strength and vigor and which will produce strong, fertile eggs, strong chicks capable of making quick growth, and pullets with sufficient stamina to stand the strain of heavy egg production. The appearance of a bird is not always a sure indication of its vigor, but appearance and action taken together are a fairly reliable basis for picking out vigorous birds. The comb, face, and wattles should have good, bright color; the eyes should be bright and fairly prominent; and the head should be comparatively broad and short, not long and snaky or crow headed. The bird should be alert and have a vigorous carriage. The legs should be set well apart and strongly support the body, with no tendency to weakness or a knock-kneed condition. The bone as seen in the shanks should be strong, and not too fine for the breed. The plumage should be clean and smooth. Lack of condition often accompanies soiled, roughened plumage. Fowls that have been sick but apparently have recovered should not be used for breeding if it can be avoided.

Purpose of the Breeding.

In selecting stock for the matings, the purpose of the breeding should be kept clearly in mind. If the desire is to produce exhibition stock, birds should be selected that are nearest the standard in type and markings or that will combine their qualities to produce offspring most nearly approaching the standard. If the desire is to produce tablefowls, birds that have a body shape suitable for carrying an abundance of meat should be selected as breeders. They should be broad and deep of body, have good length both of back and keel and especially a broad breast well covered with meat. If the desire is to produce stock for eggs, birds should be chosen as far as possible that are good egg producers or are the sons or daughters of good egg producers.

Time to Mate.

Matings should be made at least two weeks before beginning to save eggs for hatching. If less time is allowed, the maximum fertility is not likely to be assured. It is often desirable to mate even farther ahead than two weeks so that a few eggs can be incubated for 5 or 6 days to see whether they are fertile. If these eggs are not fertile, there is still time to change the male bird and thus insure fertile eggs for the earlier hatches. Matings should be made not later than February 1.

Size of Matings.

The breed influences the size of the matings. Under yarded conditions it is usual and desirable to run from 12 to 15 females of the lighter type, such as the Leghorns, from 10 to 12 females of the general-purpose type, such as the Plymouth Rocks, and from 8 to 10 females of the heaviest type, such as the Brahmas, with one male. Where the breeding fowls have free range and the male is strong and vigorous, it is possible to obtain fertile eggs from a considerably larger flock of females. A vigorous Plymouth Rock cockerel on free range should give good fertility when mated to 20 to 25 females, while a Leghorn male under the same conditions can be mated successfully to 30 to 40 females. If eggs for hatching are desired from a flock too large for a single male to fertilize, two or more males can be run with it either at the same time or by alternating the males on successive days.

Age of Breeding Stock.

Pullets or hens, cockerels or cocks can be used in the breeding flock. Hens, however, are to be preferred to pullets because they lay larger eggs and seem to give better fertility and stronger chicks. Yearling and 2-year-old hens are to be preferred to older hens. Any birds, either male or female, that have proved to be especially valuable breeders should be retained as long as they will breed.

Free Range for Breeding Stock.

If possible, the breeding stock should have free range. It is better if this be provided during the entire fall and winter before the breeding season; but if this is not possible, free range just preceding and during the breeding season will be of great value. Birds on free range will give a higher fertility, better hatches, and stronger chicks.

Maintaining The Fertility.

The breeding flock should be watched to see that the fowls keep in condition. Examine the birds and houses to see that they are not infested with lice or mites. If the birds are overrun with either of these pests, the fertility will be affected seriously or totally destroyed. Care must be used also to see that the male does not get his comb or wattles frosted. If these are frozen to any extent, his ability to fertilize eggs will be impaired and will not be recovered for several weeks. When the weather is very cold the males intended for breeding should be placed in a box or crate partly covered with a bag or cloth to prevent freezing of the comb or wattles. It is also well to examine the male occasionally to see that his crop is full and that he is not growing thin. Sometimes the male is so gallant that he allows the hens to eat all the food, with the result that he soon gets out of condition. If this happens, the male must be caught up at least once a day and fed separately from the hens.

Feeding The Breeding Stock.

The breeders must be fed to keep them in good condition and at the same time to produce eggs. Any good ration fed to layers is suitable for this purpose, but it should not be extremely forcing, or, in other words, it should not have an extremely large proportion of beef scrap. The birds should be in good flesh but not be allowed to become excessively fat. All whole or cracked grain should be fed in the litter so as to make the fowls exercise by scratching for it. Unless the flock has access to some natural supply of green feed, which is not likely during and preceding the breeding season, it must be fed some of this material in the form of sprouted oats, cabbage, mangels, or cut clover or alfalfa.

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POULTRYMEN AID IN WHEAT-SAVING

Substitution of other grains for wheat in poultry rations will save 100,000,000 bushels of wheat now annually fed to poultry and divert it into channels for human consumption.

The U. S. Department of Agriculture has been feeding a wheatless poultry ration in its regular experimental work at Beltsville, Maryland, with results comparing favorably with egg yields secured on rations containing wheat. The wheatless ration is as follows:

Scratch Mixture

2 pounds cracked corn.
1 pound oats.

Dry Mash

3 pounds corn meal.
1 pound beef scrap.

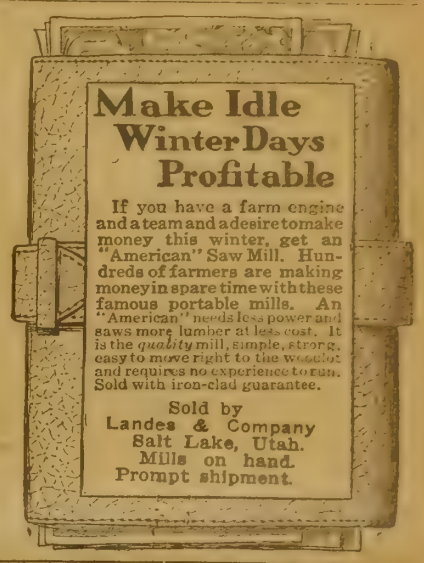
The scratch mixture and dry mash were used in about equal quantities. A flock of 30 Leghorn pullets fed this wheatless ration produced an average of 147.3 eggs apiece during their first laying year, showing that wheat is not essential for egg laying.

---o---

BE CAREFUL.

Mrs. Key was visiting home friends, and left the following card to her next-door neighbor's:

"Dear Mrs. Garrison: Would you please put out a little food for the cat I have been feeding this winter? It will eat almost anything, but do not put yourself out."



This style COLUMBIA GRAFONOLA has been sold for years to more people than any other instrument, regardless of name, price or make. We offer to send you this instrument and your choice of records on FREE TRIAL without a cent in advance. Think what it would mean to have the World's Greatest Singers and Musicians right in Your Own Home, ready to entertain you hour after hour. Remember, the outfit is sent on FREE TRIAL, and if you don't want to keep it after trial we will pay the charges back to Salt Lake. You're free to make your own decision. No salesmen or canvassers will bother you. Catalogue and further particulars free.

SEND COUPON

DAYNES-BEEBE MUSIC CO. (UF)
61-3-5 Main Street,
Salt Lake, Utah.

Gentlemen.—Please send me beautifully illustrated catalogs showing all styles of GRAFONOLAS (in colors) also 424-page Record book, and prices, terms and full particulars of your FREE TRIAL OFFER. This does not obligate me.

Name .....

Address .....

Don't Run The Mill Without Grist

You know that a farmer needs an occasional change of environment just as much as any other business man does.

Farmers have this advantage over most business men: on the farm there is a natural vacation period each year.

Now, to get the most good out of this natural play time, to do the most work next summer, take a tour this winter in

THE PACIFIC NORTHWEST
WASHINGTON OREGON BRITISH COLUMBIA

Don't run the mill without grist. Don't stick around where your toil is when you don't have to toil.

In Washington, Oregon and British Columbia—"Our International Playground"—you will meet men who are doing things and you will see things being done. The mild days will thrill you. The evergreen grass and trees will rest you. The cities will amuse and inform you. Vital statistics show that these cities are the healthiest in the world.

If for health or any other reason you contemplate a change of residence, the Pacific Northwest offers you irresistible inducements. The best way to learn of them is to see them.

Write us for booklets and information
Pacific Northwest Tourist Assn.
Dept. F, L. C. Smith Bldg.
SEATTLE, WASH.

Flowers bloom every month in the year in the Evergreen Northwest--the finest all-year-'round climate in the World

HOME

MEATLESS TUESDAY AND WHEATLESS WEDNESDAY

The movement has now become nation wide to observe, "meatless Tuesday" and "wheatless Wednesday." Hotels, restaurants, dining cars and all public places serving food are helping in the movement to conserve food.

These "less" days are now being observed in the homes of the people. Meat and wheat is being saved for shipping to our Allies.

SUGARLESS FRUIT CAKES

Fruit cake can be patriotic cake. "But fruit cake is expensive," says the prudent housewife. That's just the point. To be patriotic a cake need not be expensive, but if she chooses an expensive recipe it can still be in line with national food needs. These recipes omit sugar, thereby releasing an important food of which both America and the Allies are in serious need.

Fruit Cake (Uncooked).

Half a pound each of nuts, dates, figs, raisins, and citron. Put dates, figs and raisins through the food chopper. Grate in the yellow rind of one lemon. Then add the juice of the lemon and blend with a wooden spoon. Chop nuts fine. Cut citron into very fine strings. Pack closely into an oiled tin, alternating layers of fruit with nuts and citron. Press down closely, weight and leave at least 24 hours. Keep in closed cake box and slice as needed. Serve in small slices with a simple gelatine dessert.

This can be varied in many ways. Candied orange peel or grated cocoanut may be used in place of citron. Orange juice, or extract of cinnamon may be used instead of lemon. A drop of oil of cinnamon or ground cinnamon may be used with the above recipe.

This fruit loaf may be cut in strips, rolled in powdered sugar, and used as candy.

Dried-Fruit Cake

2 cups dried apples, peaches or any kind dried fruit.
2 cups Orleans molasses.
½ cup shortening.
2 eggs.
1 cup milk.
Flour for stiff batter.
1 teaspoon soda.
1 cup seeded raisins.
1 teaspoon nutmeg.
1 teaspoon ground cinnamon.
½ teaspoon ground cloves.
Juice of a lemon.

Soak the fruit overnight. Then chop very fine and simmer in the saucepan with the molasses for two hours and a half. Let it cool. Add beaten yolks of eggs to shortening and beat until light. Add the milk, then the fruit and molasses. Beat hard for five minutes. Now add enough flour for a stiff batter and soda dissolved in a tablespoon of hot water. Mix well. Then add the flour, raisins and spices and beat vigorously. Add the juice of lemon and finally the whites beaten to a stiff froth. The batter must be stiff but elastic enough to drop from spoon. Bake in moderate oven two hours.

Liberty Fruit Cake.

1 cup molasses.
1 cup water.
1 cup seeded raisins.
¼ cup citron cut fine.
¼ cup shortening.
½ teaspoon salt.
1 teaspoon nutmeg.
1 teaspoon cinnamon.
1 cup corn flour.
1 cup rye flour or white flour.
3 teaspoons baking powder.

Boil molasses, water, fruit, shortening, salt and spices together in saucepan three minutes. When cool, add flour and baking powder which have been sifted together. Mix well; bake in loaf pan in moderate oven about 45 minutes.

Apple Fruit Cake.

2 cups apple sauce (unsweetened).
2 cups Oreleans molasses.
½ cup shortening.
2 teaspoons soda.
3 cups flour.
1 cup chopped raisins and citron.
1 teaspoon each allspice, nutmeg and cinnamon.

Simmer together the apple sauce and molasses until dark red or brown. Let cool and add shortening, soda, flour, floured fruit and spices. Bake in slow oven from two to two and a half hours.

SIMPLE SUGARLESS DESSERTS

Hot rice or hasty pudding (cornmeal mush) served with a sweet sauce makes a simple wholesome dessert. Chopped raisins or dates may be added to either but no sugar is needed. Here are a few easily made sauces.

Honey Sauce.

1 cup honey, ¼ cup water, 1 tablespoon butter substitue, ¼ teaspoon salt, ¼ teaspoon cinnamon, a dash of nutmeg, juice of 1 lemon or 2 tablespoons vinegar.

Boil together 15 minutes. The juice of one orange and grated peel may be used instead of lemon and seasoning in this recipe.

Molasses Sauce.

1 cup molasses or syrup, 1 tablespoon cornstarch stirred smooth with water, 1 tablespoon butter substitute, ¼ teaspoon cinnamon, a pinch of salt, lemon juice or vinegar to taste.

Boil all ingredients together 20 minutes. Hot molasses flavored with ground ginger makes an excellent sauce.

Maple Sauce.

To one cup of maple syrup add one-fourth cup of nut meats chopped fine. Heat and serve with hot rice.

Chocolate Sauce.

Add one square of melted choclate to one cup of hot corn syrup. Season with vanilla.

Fruit Sauce.

To one cup of corn syrup add one-half cup chopped raisins or dates. Heat before serving.

Honey-Grape Sauce.

Boil together until thick one cup of honey and one cup of grape juice. Apple sauce, prune juice, or the juice from canned fruit can be used in this recipe. Another variation can be made by using a cup of cooked apricots that have been run through the food chopper.

PRUNE PONE IN WAR TIME

Put this recipe along with the Canadian War-Cake in your new economy cook-book. These cheap cakes are deservedly popular.

1 cup cornmeal, 1 cup rye flour, 1 cup wheat flour, 1 cup washed chopped prunes, ½ cup molasses, 1 cup sour milk, 1 teaspoon soda.

Scald meal with enough boiling water to make a very stiff batter; stir in flour; add other ingredients, then fruit. Steam in mold three hours or bake two hours in moderate oven. Serve with sweet sauce or hot molasses.

GOOD RECIPES FOR FIRELESS COOKER

Oatmeal and cereals of all kinds are best cooked by the fireless method. A much enjoyed feature of the Fireless Cookstove is the "overnight" cooking. Cereals and food placed in the cooker at night "cook while you sleep" and are ready to be eaten at breakfast—any hour. All the health-giving substance, all the delightful flavor, is there waiting for a hungry breakfast appetite. Should the cooked cereal not be warm enough to serve, a few minutes over the flame of any stove will give it the temperature desired.

Several methods may be followed in cooking cereals.

Cereal first brought to boiling point and placed in cooker without radiator.

Cereal first brought to boil and placed in the cooker with heated radiator.

Cereal placed in cooker cold and raw with heated radiator.

Or "double boiler." A double boiler is made by placing a four-quart utensil inside of an eight-quart utensil. When cooked this way the food is usually brought to a boil and boiling water poured in the eight-quart utensil up nearly to the top of four quart utensil. Use one radiator.

Cooks differ as to which of the above methods they prefer; however, the majority seem in favor of the "double boiler" method.

Cracked Wheat or Oats.

One cupful cracked wheat, one teaspoonful salt, four cupfuls water.

Soak cracked wheat in two cups of water for two hours. Heat remaining water to boiling point, add salt and cracked wheat and water in which it has been soaking. Allow to boil for 10 minutes, place in cooker over night. Use one radiator.

The FOOD of The HOUR

is the food that proves its economy on a basis of food value—the greatest amount of nutriment at the least cost.

Ghirardelli's Ground Chocolate is an ideal blend of two ideal nutritious foods—cocoa and sugar.

By using Ghirardelli's Ground Chocolate freely and wisely—in place of other less nutritious and more expensive foods—you will save money and aid in food conservation.

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Ground Chocolate

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Three months from date of sale.

Following Round Trip fares will apply from Salt Lake City, or Ogden. (Rates subject to war tax after November 1, 1917)

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Pueblo	27.50
Omaha or Kansas City	42.50
St. Louis	53.70
Memphis	62.50
Chicago	61.50
Minneapolis or St. Paul	58.94

Correspondingly low rates from many other points to many other points. See Agents for details.

L. J. KEYES,
District Passenger Agent,
Hotel Utah.
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Salt Lake City, Utah.

Graham Mush.

One cupful graham flour, one teaspoonful salt, three cupfuls water.

Stir flour slowly into boiling water, being careful not to allow it to lump. Boil slowly for five minutes and place in cooker over night. Use one radiator.

Oatmeal.

One cupful oatmeal, three cupfuls water, one teaspoonful salt.

Stir meal into boiling salt water, boil five minutes, place in cooker over night. Use one radiator. If the oatmeal is preferred rather dry use two cups of water instead of three.

Boiled Rice.

One cupful rice, two teaspoonfuls salt, five cupfuls water.

Clean and wash rice, then stir it into boiling salted water and allow to boil five minutes. Place kettle in cooker and allow to remain three hours. It may be left over night without overcooking. Use one radiator.

Soup.

The real value of soup is brought out in a Fireless Cooker. Meats and bones for soup cost but little and by using the fireless method the real expense of the dish—the long cooking over a fire and constant watching, is done away with, and it becomes one of the most economical as well as healthful of foods. The foundation of all soups is the juice or extracts of meats, poultry, etc., that are used, and the true flavor and the nutriment of these things are developed more fully in a Fireless Cooker than when cooked by any other method.

Soup Stock.

Four pounds soup meat and bone, one onion, one tablespoonful salt, one-quarter teaspoonful pepper, one stalk celery, two and one-half quarts water, one turnip, one carrot, one-half bayleaf.

Wipe meat and cut into small pieces. Bring the entire mixture to a boiling point and allow the simmer 10 minutes. Place in the cooker for eight hours. Remove and skim fat from top before using. Use one radiator.

Plain Stock.

Use about two pounds of the hind shin of meat. Wash the meat and cut it into inch cubes. Place in with the meat three quarts of hot water, six whole cloves, one bay leaf six pepper corns, one sprig of parsley, one small onion, a small piece of turnip and carrot. Then place this in the cooker for five or six hours. Use one radiator.

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EAT, BUT DON'T WASTE POTATOES

How to Prepare Potatoes Without Waste, Told.

Eat more potatoes and save wheat does not mean to waste potatoes. Many housewives who would be indignant if accused of wasting potatoes are actually throwing away daily much of the valuable mineral and protein content of the potato because they pare the potato too deep. Some very valuable suggestions on the preparation of potatoes for the table in order to avoid waste have been prepared by the Extension Division of the Utah Agricultural College. These are, in part, as follows:

"If potatoes are to be pared but a very thin layer should be removed, as much of the mineral and protein content is directly beneath the skin and is lost in deep paring. Potatoes are best boiled with their jackets on, steamed, or baked. Prepared thus there is no nourishment lost and the flavor is best. When potatoes are to be baked, the skins may be eaten as they are rich in mineral. Baked potatoes are the most easily digested because the starch has undergone a stage of digestion in the baking.

"Potatoes should take even a more important place in the diet than they ever have as they are an excellent substitute for wheat flour when used with other nourishing foods as dairy products. They are cheap and easily digested."

Baked potatoes are best when cooked as follows:

"Wash skins with vegetable brush. Use smooth skinned, medium, uniform size potatoes. Bake in a moderate oven. If cooked very slowly they are soggy; if cooked in a hot oven, a thick layer is formed over the potato. The contents may be removed and mixed with cubed meat, sauces, hard cooked egg, cheese, fish, etc., then replaced and heated or just eaten with sauces or fat, as dripping, butter, etc."

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BROWN BETTY PUDDING

One cup of crisped bread crumbs, two cups of chopped apples, one cup of sugar, two tablespoonfuls of butter, one-quarter teaspoonful each of ground spices. Utilize stale bread crumbs for this pudding. Butter the bottom of baking pan, and put in a layer of the apples (which should have been stewed). Put over this a layer of bread crumbs, sprinkle with sugar and dot with butter. Sprinkle lightly with the spices. Continue until all the apple is used. Put a layer of bread crumbs for the top. Place in a moderate oven and bake until a nice brown. Serve hot with cream sauce or hard sauce.

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SALT RISING BREAD, WITH CORNMEAL

Bring to the boiling point half pint of new milk and one and one-half pints of water. Pour this, boiling hot, over three tablespoons of cornmeal; add a pinch of salt; let it stand overnight in a covered vessel. In the morning stir in flour enough to make a stiff batter and beat hard; place vessel in warm water and let it rise. In making up the bread put a little lard, salt, and sugar to taste in it. Mold into loaves; let it rise again. Bake forty-five minutes. I have tried many recipes for salt rising bread and find this the only sure one. It makes four fine, white loaves of delicious, wholesome bread.

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Assistant (to old lady who has handed in a badly spelled telegram)—"What is this word, please?"

Old Lady—"Never mind that; it's none of your business. They'll know at the other end."—Chicago Daily News.

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PROTECTION AGAINST MUSKRATS

Though of great value as source of fur, animal sometimes becomes troublesome.

Although the muskrat is the most valuable fur animal in the United States, under some circumstances it becomes detrimental and is responsible for considerable damage to growing crops, irrigation ditches, milldams, etc. Where the animal is not troublesome, it should be protected and trapped for fur. Even where the animal has become somewhat of a pest, its numbers often may be kept down by trapping, while the sale of pelts makes such activties profitable. Often crops may be protected by the erection of wire-mesh fences between them and the marsh or pond where the animals live. Such fences should reach at least 6 inches beneath the surface of the ground to prevent the muskrat burrowing under.

Where the animals prove troublesome by causing breaks in embankments, dams, and in the sides of irrigation ditches, probably the most practical remedy is to employ a trapper and hunter to patrol the property both night and day. In narrow waterways barrel traps have proved efficient in catching large numbers of these animals.

By erecting more permanent works, owners of embankments, dams, etc., may guard against injuries to their property by muskrats. A more general use of concrete, for example, has greatly minimized such troubles. The more liberal use of gravel or coarse sand for the surface of embankments has been found effective since the animals will not burrow in soil that fills the hole as fast as they open it.

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FARM LABOR PROBLEMS

David P. Houston, Secretary of Agriculture.

Attention has been given without cessation to problems in the field of labor. It was abvious that difficulties would be presented and that apprehension would run beyond the actual condition. An army could not be raised without taking men from every field of activity; and it would have been unfair to any class of workers in the community to have proposed its exemption. It was impossible in the haste of the first draft satisfactorily to work out in detail the principle of selective service; but, nevertheless, under the regulations, consideration was given throughout by exemption boards and by the officers of the War Department to the needs of agriculture. With ampler time at its disposal, the War Department has worked out a system of classification which gives due regard to the necessity of retaining skilled farmers and expert agricultural leaders on the farms and ranches and in the educational and administrative services. No less a burden in certain sections was imposed by the redirection of ind try and the large calls made for skilled labor in essential manufacturing enterprises.

The problem confronting us in this field was not, and is not, an easy one. To its solution the Department of Labor, the Department of Agriculture, and many State agencies are giving constant thought. The Department of Agriculture has placed in each State an officer whose sole duty it is to assist in the mobilization of labor in the rural districts, in the distribution of it from places where it is not temporarily employed to places where it is urgently needed, in the fuller utilization of forms of labor not heretofore fully employed, and in securing more perfect co-operation among farmers in the same district. The Department of Labor has undertaken to make available not only for industrial but also for rural undertakings urban labor which is at the time disengaged. The problem is one for constructive handling. I am confident that with the assistance of all the organized agencies and the alert and co-operative action of the farmers of the Nation the situation can be met and that those remaining on the farms can produce as much as or more than has heretofore been available. This is the aim before us and it must be attained.

UTAH IMPLEMENT & VEHICLE CO
Salt Lake City, Utah.

LIVE STOCK

THE COUNTRY'S CALL FOR HOGS

Figures Show a Big Opportunity and a Big Obligation for Farmers.

The Hog Shortage

Hogs on Farms September 1.

1916	65,645,000
1917	60,218,000
Decrease	5,427,000

The Corn Increase.

1917 crop, bushels	3,191,083,000
1916 crop, bushels	2,583,241,000
Increase bushels	607,842,000

There is the gap—from a decrease of more than 5,000,000 hogs to an increase of more than 607,000,000 bushels of corn—that hog raisers are expected largely to close up. Closing it by breeding more hogs is not only one of the big opportunities but one of the big obligations of American farmers. Other equally convincing figures enter into the equation but these are sufficient for present consideration; they show the reason for the "more hog" campaign, now at its height, to urge that sows be bred in increased numbers now to insure the needed number of pigs next spring to eat the surplus of the 1917 crop.

That the farmers of the country will respond as "minute men" in the hog emergency is the belief of officials of the United States Department of Agriculture who are urging in conferences with livestock men definite hog increases by States, and who have just returned from a trip through the corn belt.

With the Government backing them, through emergency legislation, as it never has before, farmers never have had greater assurance that their efforts would be justly compensated. The Food Administration has said that, until further notice, prices, so far as it can influence them will not go below the minimum of about $15.50 a hundred, for the average of the packers' droves on the Chicago market. Furthermore, it has said as the hogs farrowed next spring: "We will try to stabilize the price so that the farmer can count on getting for each 100 pounds of hogs ready for market thirteen times the average cost per bushel of the corn fed into the hogs." Experience has shown that this ratio of 13 to 1 is liberal, and that it should stimulate hog breeding now.

That is the immediate war duty of farmers: Breed sows now—and gilts if necessary. Breeding should be hastened, especially in the South. In the North it may be done until as late as February in some sections. But the sooner the new pig crop can be obtained, the sooner the urgent meat needs of the world will be met.

LIGHT OR HEAVY HOGS?

Farmers are sometimes puzzled as to the actions of the livestock markets in giving the premium to heavy hogs when they have light hogs to market, and reversing the preference when they are ready to sell heavy hogs.

Generally speaking, the division between light and heavy hogs is the 225-pound point, though when the three divisions—mixed packing, heavy packing and light packing—are used, 135 to 255, 255 to 400 and 135 to 195 are the divisions.

Generally speaking, light hogs have the premium when more heavy hogs are coming to market than the packers demand. Heavy hogs, of course, make more lard, fat backs and fat bacon than do light ones, and the consuming public demands a certain percentage of fat with the lean.

The time of year, industrial conditions and export trade, all have their influence on this proportioning of the demand. The packers merely buy what they can sell to best advantage, paying more for what is in greatest demand, as demand exceeds supply. On the other hand, they pay less for the kind that is coming to market faster than the consumer is taking it. Hence, on the light and heavy, or lean and fat, hog market, it is well to look ahead as well as back, in spite of the fact that war times has made the "pigs is pigs" expression more than true.

September brings the heaviest hogs to market, and that month is nearly always a premium month for light hogs on the markets. January and February are ordinarily the months of lightest weight hogs, and naturally heavy hogs are at a premium over light ones then. Of course, drouths, frozen corn crops, foot-and-mouth quarantines, hog cholera and war demands throw the markets out of stride, so that the heavy months of the year may come a month earlier than usual, or the advantage of heavy hogs over light be prolonged for more months than usual.

It is to this advantage of heavy hogs over light ones at the present time I wish to call your attention. It is an advantage that I think will hold out till the end of the war, and perhaps even for two or three years afterwards. Here are some fundamental reasons for the "edge" of the heavy hog over the light:

1. The world is starved lean, and fat is at a great premium. Lard was one of the first things Mr. Hoover, our new food director, asked the packers to export to the war-stricken nations.

2. Germany, one of our best lard customers before the war, will immediately, and for many months while herds are being built up, take great quantities of lard the minute war ends.

3. High-priced corn, high-priced hogs, and a competition for the corn crop between people and livestock will cause our normal production of fat per hog marketed to fall off to some extent at least.

4. Hog-raising is increasing rapidly outside the old corn-belt lines, and these hogs are made on less corn than is the average hog now.—F. H. Higgins.

FEEDING THE SUCKLING SOW FOR GROWTHY PIGS

By John M. Evvard, Iowa Experiment Station.

Pasture should by all means be provided the suckling sow if at all possible. One cannot expect good results from dry lot feeding of sows with litters following.

The milking sow as well as the milking cow needs a ration comparatively rich in protein and minerals because the milk which is secreted for the young is quite rich in these growing elements. The mineral nutrients should also be emphasized. We ordinarily figure that five to six pounds of carbohydrate or starch equivalent should be fed with every pound of protein to the milking cow. Considering the relative composition of the milk produced by the cow and sow, the ration should be richer for the sow or about one to five, depending upon the individual. The younger the sow, the heavier the milking tendency, the larger number of pigs following, the less the range, the less the pasture, and so on, the richer should the ration be in protein.

Just think of it! Sow's milk contains pratcically 82 per cent more protein (muscle and bone builders), two per cent more fat and 43 per cent more of that precious calcium and phosphorus ash which comprises most of the dry minerals of bone. Is it any wonder that sows get thin even though they are well fed, producing such a rich concentrated food as this through the mammary (milk secreting) glands? It pays well to minister to nutritional needs of the sow because she will not only lose less weight but her pigs will grow faster, be more healthy and make more profitable pork. Of course, it is needless to remark that the suckling sow on forage (blue grass, alfalfa, rape or red clover) can be fed much heavier than the sow in dry lot with practically no danger whatever from thumps or kindred ailments.

The grain ration in the corn belt should consist largely of corn, preferably soaked in season for the sow; the young pigs, however, should have their corn largely in the form of the ear starting out with the dry shelled and gradually changing over to the ear form.

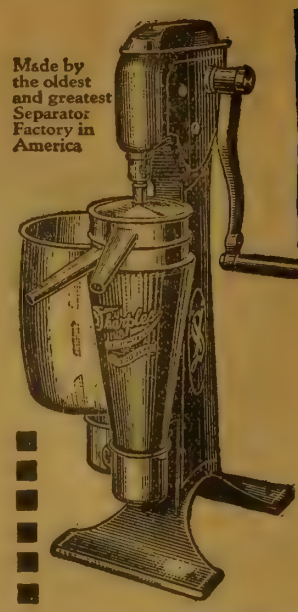
The best supplements to feed are skim milk or buttermilk, tankage, middlings, oil meal, a little bran and some ground oats. A very good ration with which we have had good success is to allow all the corn the sow and pigs will clean up nicely, feeding in addition a slop mixture of three parts wheat middlings and one part 60 per cent protein tankage. About half as much of this slop mixture is required on grass as in dry lot; the hog grower should by all means provide grass, preferably alfalfa, rape or clover. Blue grass, of course, is good, but needs considerable high-priced supplement along with corn for most profitable feeding.

Another ration which is quite efficient is made up of corn 60 pounds, middlings 20 pounds, tankage or meat meal 10 pounds, bran six pounds, oil meal three pounds and salt one pound. Another very acceptable ration would be corn 30 pounds, ground oats 30 pounds, wheat middlings 20 pounds, wheat bran 12 pounds and tankage or meat meal eight pounds.

On leguminous pastures, after the sows get well started, the ration can be composed largely of corn and tankage, enough middlings and ground oats being mixed with the tankage to make a nice slop. Sudden changes in the ration should be prohibited by all means.

It is wise to feed the sow abundantly during the suckling period so that she may lose little weight. It cost money to put this weight on, and incidentally the good feeding of the sow results in more milk; this ultimately means more vigorous and more growthy pigs for later profitable feeding and fattening.

By all means the boar should have a



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paddock in which to graze and range. As with the sow, his ration during the breeding season should consist of considerable, but not to much protein. A very good mixture for him would consist of three parts middlings and one part tankage in conjunction with a moderate corn ration. No two boars feed alike, hence it is necessary for the feeder to regulate the ration accordingly. It is wise to keep the boar by himself and hand-bred rather than allow him to run with the sows.

If the sire or boar has a changeable appetite a little skim-milk will often times bring him back to feed. There is little trouble, however, in keeping the boar in good shape if he has a good paddock to graze in, especially if he has one in which alfalfa and rape predominate. When in rape, alfalfa or clover the boar will need but little corn to keep him in good shape. When breeding begins, or about two weeks before, allow him some skim-milk, or tankage, or oil meal or other protein supplement to increase vigor of the sperm cells liberated and thus encourage fertile mating.

SALT YOUR OWN PORK

Much can be saved by Meat Conservation.

The average farm can well supply itself with its own salt pork by following these simple directions prepared by experts of the Utah Agricultural College:

For hogs weighing not over 125 or 130 pounds each, intended for dry curing, one bushel fine salt, two pounds brown sugar and one pound saltpeter will suffice for each 800 pounds pork before the meat is cut out; but if the meat is large and thick, or weighs from 150 to 200 pounds per carcass, from a gallon to a peck more salt and a little more of both the other articles should be taken. Neither the sugar nor the saltpeter is absolutely necessary for the preservation of the meat, and they are often omitted. But both are preservatives; the sugar improves the flavor of the bacon and the saltpeter gives it greater firmness and finer color, if used sparingly. Bacon should not be so sweet as to suggest the "sugar cure"; and saltpeter, used too freely, hardens the tissues of the meat, and renders it less palatable. The quantity of salt mentioned is enough for the first salting. A little more new salt is added at the second salting and used together with the old salt that has not been absorbed. If sugar and saltpeter are used, first apply about a teaspoonful of pulverized saltpeter on the flesh side of the hams and shoulder, and then taking a little sugar in the hand, apply it lightly to the flesh surface of all the pieces. A tablesponful is enough for any one piece.

If the meat at the time of salting is moist and yielding to the touch, rubbing the skin side with the gloved hand, or the "sows ear," as is sometimes insisted on, is unnecessary; the meat will take salt readily enough without this extra labor. But if the meat is rigid, and the weather is very cold, or if the pieces are large and thick, rubbing the skin side to make it yielding and moist causes the salt to penetrate to the center of the piece. On the flesh side it is only necessary to sprinkle the salt over all the surface. Care must be taken to get some salt into every depression and into the hock end of all joints. An experienced meat salter goes over the piece with great expedition. Taking a handful of the salt he applies it dextrously by a gliding motion of the hand to all the surface and does not forget the hock end of the bones where the feet have been cut off. Only dry salt is used in this method of curing. The meat is never put into brine or "pickle," nor is any water added to the salt to render it more moist.

Best Distribution of Salt

A rude platform or bench of planks is laid down, on which the meat is packed as it is salted. A boy hands the pieces to the packer, who lays down first a course of middlings and then sprinkles a little more salt on all the places that do not appear to have quite enough. Next comes a layer of shoulders and then another layer of middlings, until all these pieces have been laid. From time to time a little more salt is added, as appears to be necessary. The hams are reesrved for the top layer, the object being to prevent them from becoming too salty. In a large bulk of meat the brine, as it settles down lodges upon the lower pieces, and some of them get rather more than their quota of salt. Too much saltiness spoils the hams for first-class bacon. In fact, it spoils any meat to have it too salty, but it requires less to spoil the hams, because, as a rule, they are mostly lean meat. The jowls, heads and livers, on account of the quantity of blood about them, are put in a separate pile, after being salted. The chines and spareribs are but slightly salted and laid on top of the bulk of neat meat. The drippings of brine and blood from the meat are collected in buckets and sent to the compost heaps. If there are rats, they must be trapped or kept out in some way. Cats, also, should be excluded from the house. Close-fitting boxes, which some use to keep the rats from the meat, are not the best; the meat needs air.

In ten days to three weeks, according to weather and size of the meat, break bulk and resalt, using the old salt again, with just a little new salt added. In four to six weeks more, or sooner, if need be, break up and wash the meat nicely, preparatory to smoking it. Some farmers do not wash the salt off, but the meat receives smoke better and looks nicer, if washed.

WHY BURN THE LEAVES

(Continued from page 3)

them in open pits or boxes where they become valuable material, in a year or two, to mix with the potting soil for plants.

If we must rake the leaves from the lawn and street, why not make a leaf pit in the backyard, or, still better, bury them in a pit in the garden?

All soils, particularly in arid countries, are greatly improved by the addition to them of decayed organic matter—humus. Leaves are nature's humus supply.

Falling leaves have another and more immediate mission than furnishing fertility to the soil. They protect the roots of perennial vegetation from the drying and freezing of the dormant season.

Our lawns and gardens may look neater when the leaves are raked and burned, but by doing so we expose the grass and shrubs to the cold, dry winds of our Western winter. As a result many plants, and large areas of lawn, may be dead when spring comes. Where the leaves lie on the ground during the winter the soil is kept moist and largely free from frost. In the forests of the East it is not uncommon to find the ground unfrozen all winter under the snow and leaves.

These hints of how nature takes care of plants should teach us a lesson in gardening. If we remove the natural cover from our lawns and gardens, we should at least replace the moisture that is lost. In fact more harm will result from a lawn becoming dry in winter than from an August drought. If we want our lawns to retain a good turf and become green early in spring, we should irrigate them, filling the soil full of water just before the ground freezes for the winter.

For those who have shrubs, roses or a perennial flower garden the leaves will be found useful for mulching thickly around and over the plants.

We are learning our lesson on saving food. Why not also learn to save our fertility so that next year our gardens may be just a little better than they were this year, and, also, that we may live just a little more closely in accord with mother nature?

Hog men who complain that the "13 to one" arrangement does not leave them any profit will do well to study their own methods more closely.

EAT MORE CHEESE

"Store" cheese—more properly known as American Cheddar—is more nourishing pound for pound, than any meat and therefore should have a prominent place in the diet as a meat substitute, says a statement issued today by the United States Department of Agriculture.

Few people in this country eat cheese in sufficient quantities for it really to form an important part of the daily fare. Indeed, it is used more often simply as an appetizer or as a seasoning for some other food. Nearly every one relishes good American Cheddar or "store" cheese, but there is an impression that it is indigestible and constipating. Extensive digestion experiments carried on by the Department of Agriculture have demonstrated that more than 95 per cent of the protein of cheese is digested and 90 per cent of its energy is available. Even when eaten in large quantities and for long periods, no case of indigestion, constipation, or other disturbance was observed in those who ate it. One man who ate cheese as the chief source of both protein and energy, eating an average of 9.27 ounces daily, with bread and fruit, for more than two years, did a fair amount of muscular work and kept in good health.

American Cheddar cheese is a very satisfactory substitute for meat. It can be kept in storage for a long time, and contains much food in small volume.

A pound of cheese supplies more than twice as much energy as a pound of fowl or round steak and almost twice as much protein as the same amount of fowl or ham. Cheese, therefore, is usually a cheaper food than the meats.

Cheese can also be combined in many palatable dishes. When grated it may be used in soups or with many vegetables. Other foods in which cheese is used are: Macaroni and cheese, Welsh rabbit, tomato rabbit, baked rice and cheese, baked crackers and cheese, vegetable and cheese rolls, cheese omelet, oatmeal and cheese, and cheese mush.

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A wonderful hog for 16 months old, with good bone, high back, and a whale for his age. Is in the way of my "Defenders" sows.

Also a few choice young "Defender" boars for sale. Orders placed now for spring pigs.

V. R. FISHER
Oxford Idaho

To State Food Administrator
Salt Lake City, Utah

I am glad to join with you and help increase the number of hogs for next year.

For your information I submit the following:

Number of hogs I have on my farm.....

Number of sows or gilts I have or will breed this fall.....

Number of sows or gilts I have more than I can raise next year and will sell to neighbors or hold for your committee to sell.....

Number of brood sows I would like to buy.....

The breed of hogs I prefer.....

Number of fat hogs I will have ready for market.....

How many more hogs will you raise this year than last.....

How many hogs could you feed and care for if you were able to secure them.....

Name.....

Adress.....

Fill in the amounts and mail today to State Food Administrator, Salt Lake City, Utah.

Dry-Farming Possible In Garfield County

By J. W. Paxman, Extension Specialist in Dry-Farming for the Utah Agricultural College.

Apart from numerous small areas upon which dry-farming is and can be practiced, there are at least two distinct sections in Garfield County which are coming into prominence with encouraging promises, and it is with these two sections that we shall deal with in this article.

John's Valley.

This valley, formally known as Emery Valley is situated about 18 to 25 miles East of Panguitch the County Seat, at an altitude of 7,000 to 7,300 feet and is skirted in part with stately pine trees. There are numerous small streams from springs and the melting snows in the ravines, which find their way into the East Fork of the Sevier River the head of which is in the mountains at south end of this valley. Some of these streams are utilized in irrigating a small portion of the lands. By means of these streams and a contemplated reservoir on the fork of the river, some 10,000 to 12,000 can be irrigated.

The valley proper is quite extensive, comprising over 70,000 acres of cultivatable lands, is two to six miles wide and running from north-east to south-west about thirty miles. Over 50,000 acres at this writing are under entry, practically all being taken during the last six years.

The thriving little town of Widtsoe of 300 people has been established during the six years and the settlers are enthusiastic over their holdings and the prospects of the future. Much development work is being done year by year, as the ability of the settlers will permit, the major part of it being on the dry-farm areas.

Character of Lands.

The lands in the main are fertile and productive, varying from a rich black mountain loam to a rather heavy bottom clay. The most of it however, is light enough to work nicely, carrying considerable humus. The natural vegetation consists of a stunted or dwarf black mountain sage (not difficult to clear) and a rather vigorous rabbit brush, with a good growth of grass intermingling. In some small areas the hard pan is within a few feet of the surface, but most of the lands are underlaid with a good deep clay soil, calculated to hold the moisture well.

Climate.

The one drawback to the section is the short growing season, due to the high altitude. Settlers say the winters are not severely cold although they are of long duration, the thermometer very seldom registering more than 16 below zero, comparable with that of Juab Valley, only that the snows are deeper and lie longer on the ground. The spring months are exceptionally cool, retarding planting and checking the growing of plants. The frosts come early in the fall of the year and very frequently damage the crops before maturity.

The precipitation averages 15 inches annually, with copious rains generally in latter part of July and early August. Crops planted on well tilled lands do not show any signs of suffering for moisture. The cooling and balmy breezes from the mountains have a beneficial influence in checking evaporation and permitting the moisture to do better duty to the plants.

Crops.

By far the most important thing to determine is a cropping system and varieties that can safely be relied upon to make good with so short a growing season.

The extreme distance from the markets precludes the idea of growing any kind of grain or forage crops for commercial use. These crops, of necessity must be limited to home consumption. A market for such crops must be furnished by the farmers themselves—that of livestock to eat up the products of the farms and carrying the crops to market in a concentrated form in the carcasses of cattle, sheep and hogs. An ideal condition for such a system is afforded in the excellent ranges adjoining this valley both on the east and west. No better ranges in the state than the range on the east for cattle and the one for sheep on the west, so there are excellent opportunities of cheap and efficient ranges for use in the summer months.

All kinds of roots grow abundantly on the dry-farms as well as under irrigation. Potatoes do very well, but a larger tonnage comes from mangels, turnips, carrots, and the half sugar-beets, all of which make a quick growth in this high altitude and will afford an excellent succulent feed for all kinds of stock for winter. These crops should be grown more extensively, both from the standpoint of their value in the feed ration, and because of their safe and economic production.

Alfalfa is a more difficult crop to grow and is said to winter kill before the rooting system can develop. But a few alfalfa fields have succeeded so far, but it is hoped that the Grimm variety will show better results. This variety is being tried out. Rye succeeds well from fall planting but is in danger of frost killing in late June. Very few fall planted crops of grain have succeeded and because proper care in selecting varieties has not been heeded, a large percentage of the spring planted crops have been frosted before maturity. It is demonstration where a crop of winter wheat was planted at the beginning of August and pastured in the fall and again in the spring until about June 15th, a good crop matured 20 days earlier than the spring planted wheat on the same farm. The yield was some better than the spring planted and besides it afforded an excellent pasture of considerable value to the farmer. The rye crops can be made safe from the same methods. This method is recommended for all fall planted crops. Planting should be done in July or early August, pasture in the fall and again in the spring until about June 15th, a good crop matured 20 days earlier than the spring planted wheat on the same farm. The yield was some better than the spring planted and besides it afforded an excellent pasture of considerable value to the farmer. The rye crops can be made safe from the same methods. This method is recommended for all fall planted crops. Planting should be done in July or early August, pasture in the fall and again in the spring until about June 10th. The crop will then grow quickly and mature early, thereby escaping the early and late frosts which have been so menacing to the grain crops.

Experiment Farm.

In order to determine to varieties best suited to this valley and the methods that make for the safest and best production, the Experiment Station of the Agricultural College has established an Experiment Farm of 40 acres near the central part of the valley, and as the work develops, the farmers will be furnished with data which ought to eliminate many of the risks now taken by too many of the farmers in their promiscuous methods, and trusting to any variety of seeds.

Conclusion.

There is but little doubt of this becoming a valuable, productive and important dry-farm section. There seems to be every facility present for success, barring, of course, the shortness of the growing season. The lands are rich and of good quality to handle; living streams are ample for complete settlement and for irrigating a good portion of the country; the rainfall is sufficient and the air cool and balmy; grazing lands for cattle and sheep are abundant and in near proximity; sufficient timber and lumber are in the adjacent hills, and above all, a good class of hardworking, enterprising people occupy the lands. A few men of mature experience, such as David W. Woodard and Carl Mangum are both leaders and benefactors to the community, being fully awake to the needs of the country and energetic in looking after its development. The lands are highly prized, being held at $8.00 to $15.00 per acre in their raw state. But a very few years ago the valley was a lucrative grazing section for the stockmen. The name Adair is associated with the ranchers, and the first plowing in the valley is accredited to Mrs. Julia Ann Adair and her daughters, Ida, Ruhama and Charlotte, done some fifteen years ago, when Mrs. Adair and one of the daughters took the place of the team and, with pioneer grit, lugged away with might and main, until sufficient was plowed to provide a garden. Not until six years ago was there any great amount of farming attempted.

Hatch District.

A tract of about 10,000 acres of land lying about five miles east and north of Hatchtown, known as the East Bench, is now about one-half occupied with entrymen with some five or six families residing thereon. Between 1,500 and 2,000 acres are already under the plow.

The land is a typical bench soil, medium light in color with a reddish tint, a clam loam with sufficient sand a silt to make it work nicely.

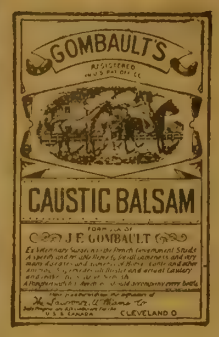
Most of the occupied land is fenced and much activity is shown in the rapid development now in process. This, too, is a new district, with a class of good, stable, Utah people operating; but, as in other districts, they are under the burden of scanty means and inadequate equipment. They, however, have an honest and resolute purpose and will eventually overcome and succeed. Bishop James B. Burrows, for years an interested student of dry-farming methods, is among the land owners, and is leading spirit in the development of the section. It is due to his enthusiasm and good judgment and foresight that the land is now occupied, and he in-

This is the Kind of Horse the Government Wants

No horse with a Spavin, Splint, Ringbone, Curb, Bony Growth, Capped Hock, Wind Puff, Strained Tendon or Sweeny can now pass the keen-eyed Inspectors of the Government Remount Stations.

Splendid-looking horses — otherwise sound—are being turned down because of some blemish that could be quickly cured with

Gombault's Caustic Balsam



Here is your chance to make money for yourself and at the same time help in the Government's great Thrift and Production movement.

Put your horse into condition with **Gombault's Caustic Balsam.** A safe and reliable remedy.

Gombault's Caustic Balsam if applied immediately after burns, bruises or cuts, is a perfect antiseptic—soothing and healing. An absolutely safe external remedy for man or beast.

Every bottle of **Caustic Balsam** sold will surely give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by parcel post with full directions for its use. Send for descriptive circulars, testimonials, etc.

The Lawrence-Williams Co., Cleveland, Ohio

BETTER CATTLE

Get full service from your cattle. Lameness, scouring, sore udders and kindred ailments reduce their usefulness and fruitfulness.

Use Sloan's Liniment; easily applied and quickly effective. It penetrates at once.

You will find many uses for this fine remedy in the home as well as in the barnyard. Always have it handy.

Buy it at your druggists. 25c 50c $1.00

The 18 oz. $1.00 bottle contains six times the 25c size.

Sloan's Liniment

REMOVE THAT SPAVIN

8

—or that Curb, Splint, Ringbone or other blemish with Kendall's Spavin Treatment. Mr. Martens of Shawano, Wis., writes this about

KENDALL'S Spavin Treatment

"I have been using your Spavin Treatment for years for Spavin and Ringbone, and would not be without it, because it never failed." Let us send you other letters. Get a bottle of Kendall's at once. You may need it any day. At your druggists $1 a bottle. 6 for $5. Ask for "Treatise on the Horse"—Free, or write to

Dr. B. J. Kendall Co., Enosburg Falls, Vermont, U. S. A.

If you want the best in Butte Wrappers send in your order to Th Utah Farmer TODAY.

vites more bonifide homeseekers to become his neighbors.

Mr. LeRoy Porter, another booster for the country, has perhaps produced the best results in the district, having grown good crops of wheat, potatoes and beans, demonstrating beyond any doubt the ability of the lands to produce profitable crops.

Potatoes of very fine quality and as high as 200 bushels per acre have been produced. All kinds of root crops do well. During the season of 1917 good crops of beans were produced, and from present indications, the future will undoubtedly witness some profitable harvests of this valuable crop. The bean plant bears well and ripens in time to escape the September frosts.

The record of precipitation shows an annual downfall of about 15 inches, the snow covering the ground 12 to 30 inches during the winter, and with proper cultural methods, there is no reason why the farmers should not obtain a liberal reward for their efforts.

The altitude is near 7,000 feet but the frost effects are not severe owing to an excellent draw affording a constant movement of the air. It is not a climate for corn production, however.

Rye has been the principal crop but a strong movement is now on to grow wheat, potatoes and beans. Improved methods and doing the work in proper season are the factors that will make for crop improvement and place this district more prominently on the dry-farm map. Hope of speedy results in these and other movements are entertained, because here the farmers exhibit a spirit to co-operate and to be instructed.

Water is available from small springs and from wells 10 to 30 feet deep. We look for this section to develop successfully and the furnish enough grain for home consumption and considerable beans and pork for export.

FARM MACHINERY SHOULD BE CONSERVED

How to Conserve Agriculture's Artillery.

1. Orders for new equipment and repair parts should be placed as soon as possible.

2. To produce maximum results with a minimum of labor, new and modern machinery in large sizes should be used wherever possible.

3. Serviceable equipment, not needed, should be sold or made available to others.

4. Useless machinery should be returned to the channels of trade as junk.

5. Thorough lubrication and proper care when in use will materially lengthen the period of service of farm equipment.

6. More care should be given to protecting farm implements from the weather.

During the coming winter farmers should give careful attention to the work of repairing all machines which will be used next season. Also, orders for repair parts and new machines should be placed as soon as possible. This will acquaint manufacturers and their agents with the demand in different sections and enable them to make the best possible distribution. At the same time, it will eliminate expensive delays in transportation at the busy season.

Economical Replacements.

The use of the largest and most improved farm machinery, always desirable, is of special importance. Where large acreages are far ed the largest machinery is the most economical. Many of the latest machines embody improvements which will often justify their purchase where obtainable from the standpoint of economy even though the old outfit is still serviceable.

When new machines are bought on large farms to replace others still capable of service, it is suggested that the owners afford an opportunity to other farmers who operate on a smaller scale to purchase this replaced machinery at a reasonable price. This plan should benefit both parties.

Dispose of Worn-Out Implements.

All worn-out machinery should be sold for junk at the first opportunity, the specialists advise, first removing all bolts or other parts which might be useful in repairing other equipment. It is usually false economy to attempt to use a worn-out machine, as the time wasted with breakages and other delays and the extra power required for its operation usually more than offset the saving effected by continuing it in use.

Importance of Oiling.

More damage can be done to a machine in half an hour through lack of oil or grease on some bearings than by a whole season's exposure to the weather, the specialists declare. For this sort of neglect there can be no excuse, it is said. Operating a machine without lubrication, especially when the bearings are slightly rusty, will quickly result in the wearing away of the metal, often to a considerable depth, in a very few minutes. Expensive breakages, as well as serious delays, also may be caused by operating machines on which nuts have worked loose or have come off entirely, allowing bolts to loosen or drop out.

All practicable steps should be taken to preserve machinery now on hand. Needless exposure to the weather should be avoided, and in cases where it is not practicable to house machinery when idle, all bearings should receive a thorough application of heavy oil or grease to keep out moisture and prevent rust. It is believed that on many farms machinery could be more adequately sheltered in the buildings available by exercising care in placing them so as to economize space.

HOW TO MAKE GOOD USE OF STRAW

(Continued from page 1)

as good as wheat or rye straw for bedding purposes. It is advisable for livestock owners and growers to use as much straw as they consistently can during the winter and early spring for bedding their livestock. Well bedded animals will gain much more rapidly in flesh than they would if they were not made comfortable in this way. Straw used for this purpose is afterward made valuable on the fields in the way of manure, and every bit of it used for bedding should be carefully taken out and spread on the various fields with a manure spreader just as quickly as possible after it is made.

At the present time, the price of straw on the market ranges from nothing at all in some sections to $15 a ton for baled straw of good quality in others. Properly used, it is calculated that on an average it should be worth $5 a ton to the farm which produces it. On the other hand, reports from farmers indicate that in their opinion its average value is only $3.70 a ton. The explanation of the difference is that many farmers fail to realize that straw has any value at all or else use it in some comparatively unprofitable way. Feed your straw if you can. If you can not, use it in some way.

A use to which straw is very profitably put by some of our live stock men is that of making straw sheds for winter protection. A framework of lumber, or, probably, better, posts and poles, can be constructed and the straw put on this framework at threshing time. The straw covering should be renewed each year. Often when these sheds are made they are left until the straw is completely rotted. We don't believe this is a good practice for more reasons than one. First, an old straw shed of this kind is one of the best places we know of to harbor animal disease germs. Hog cholera is often retained in one of these sheds for many years.

Another man I know bales enough of his straw to build a shed or building using the bales for sides and ends. These sheds can be used for several years and have proven very successful.

Straw Increases Crops.

I have seen many practical demonstrations of the value of straw spread on different kinds of crops. It is good spread on fall wheat fields. I have seen farmers who have followed this pratcice tell us that fields on which straw was spread in the fall retained the snow much more readily than did the adjoining fields on which no straw was spread.

I have talked to men who have followed the practice of spreading their straw on pasture lands and they have told us they have met with splendid results in this work, the straw acting as a mulch to the ground and assisting in retaining the moisture much longer than the soil that was not covered in this manner. The value of spreading straw is especially noticeable on lands of a sandy nature that are inclined to blow more or less. Farmers who have had experience in this work on these kinds of soils are strong in their opinion that straw spreading is valuable in crop production.

Straw can be successfully spread on stubble fields that are to be fall-plowed. It is best in these cases not to spread the straw too thickly and to disc the ground thoroughly with a sharp disc after spreading and before plowing. This chops the straw up and makes it mix better with the soil, allowing decomposition to take place much sooner than if it were turned under without being cut with disc. This is equally advisable if the straw is spread in the spring and the ground plowed at that season of the year.

Of course it takes more work to get the best results and pays in the end for all the time and labor spent in the increased crops that come in return for the work done on the land.

In the earlier days fertilizing was not necessary, the ground being sufficiently rich to produce any kind of crop that was desired to seed. That was true to a large extent on some of our soils, but the time is here, when we must give a whole lot more attention to soil-building than we have in the past. Our soils are not inexhaustible. This is evidenced by the vast amount of fertilizer that is necessary on the farm lands.

Farmers of this country should use every effort possible to retain what fertility they now have in their soil, and whatever they possibly can to make it more fertile and stop throwing away such a valuable product as our straw.

Not many years ago many of our farmers were equally as careless, if not more so, with the manure they produced as they are now with the straw. They have long ago learned the folly of carelessly wasting manure, and the time is not far distant when they will be equally as careful in saving their straw.

In the future issues of the Utah Farmer I plan to give my ideas on other ways in which straw can be used and made a profitable product of the farm.

"PRIMARY INTERIOR POINTS"

The term "primary interior points," as used in the grain trade, and more recently in published statements of the U. S. Food Administration, includes twelve important markets. Arranged alphabetically they are: Buffalo, Chicago, Detroit, Duluth, Indianapolis, Kansas City, Milwaukee, Minneapolis, Omaha, Peoria, St. Louis and Toledo.

"Primary" should not be construed to mean the first or the home market. It refers rather to the interior grain points of chief importance as listed.

A DISTINCTION

"Hubby gave me twenty dollars this morning."

"Fine Going shopping now, I spose?"

"Shopping! Not much! I'm going to buy something!"

OMINOUS

"Along with all this home dehydrating and conserving of fruits, vegetables and things comes one gloomy apprehension."

"And that is?"

"That it may bring back the dried apple pie."

The best way to take care of our big potato crop is to eat it. Then we can send more meat and wheat to our own and the Allied armies.

Remember the heavy snows of last winter?

Don't be caught napping!

The GOOD SENSE sled is simple and durable in construction, yet priced unusually low. We guarantee the GOOD SENSE to give long and unfailing service. It comes in 5 models.

The next time you are in Murray, drop in and let us show you the Good Sense. We can make immediate deliveries.

Miller-Cahoon Co.

Murray Idaho Falls

Pioneer implement dealers of Utah.

WAR DEMANDS NEW DUTY

The following article taken from the Toronto Globe shows the change that is going on with our northern neighbors in Canada. This paper declares a social conscience must be aroused, the rich must cease all extravagances and aid toilers, who need a fuller life as well as a full dinner pail. We quote the article:

Very slowly, almost imperceptibly it would seem, Canadians are beginning to realize that all is not well with country in these days of stern war. The change of government removes one of the causes that have contributed to the deadening of the public conscience. The success of the Union government will depend to a large extent on the vigor with which it applies itself to the task of undoing the mischief which three years of party government has accomplished through failure to nationalize the energy and patriotism of the country for war purposes. That there is an awakening of the public conscience is evidenced by the trend of thought since the outbreak of war, in the pulpit, the platform and the press.

In the British Isles luxury and extravagance have ceased to be regarded as "bad form" only; they are looked upon as morally wrong. Anything that tends to divert essential labor to nonessential employment is frowned upon as unpatriotic. The hundreds of private chauffeurs that one sees every day on the streets of Canadian cities are an evidence that the social conscience has not been deeply stirred in the Dominion.

Extravagance is Selfishness.

Sometimes it is urged that thrift campaigns are apt to interfere with fundamental economic laws and that expenditure of money by those possessed of wealth maintains "business as usual" and keeps someone employed who otherwise might be out of work and destitute. When a woman is compelled to pay $50 to $60 for a coat and a man $9 to $11 for shoes, the average purchaser is not impressed by the theory that war time extravagance is balanced by the higher wages paid to those through whose hands the coat and shoes pass on their way from the raw material to the finished product. Apart altogether from the reasonable doubt that exists as to the destination of the extra profits on such articles of clothing during war time, the question is raised whether the labor expended on high priced coats and shoes, which encourage extravagance on the part of the public, is employed in an essential occupation.

Any expenditure by the wealthy classes that diverts labor from essential to nonessential industries should be discouraged. One of the most unjust aspects of the social problem is the unfair advantage enjoyed by people of wealth in competing against the bulk of the community for the necessaries of life.

The indifference to the necessities of the poorer portion of the community is shown by those who attract labor from essential, productive employment to non-productive and nonessential occupations, such as that of a chauffeur, or to industries that cater to the extravagant and luxury loving members of society by the production of $60 coats and $10 shoes, is a selfish and unpatriotic use of wealth which is indefensible in the present state of war.

The fact that such things are being widely discussed is significant of the change which has come over the temper of the people, and evidences a keener determination to fix a moral, if not a legal, barrier to extravagance by making it fundamentally wrong at the present time for people of wealth to indulge their untutored taste for luxury and comfort without a thought for the harrowing background of the battle fields.

Material vs. Spiritual.

Why, it may be asked, has Canada been so slow to abandon the ways of ease and luxury in time of war? Those who have amassed wealth belong to an era that regarded profiteering as the legitimate aim of the man who was "diligent in business."

This is the unpardonable national sin—"the crushing of the spiritual in the effort to increase the material."

It is the fuller life, not the full dinner pail only, that the toiling masses are seeking. The materialistic spirit of the industrial age, which is coming to an unhonored close, has reduced the worker to a mere cog in the whirling machinery of trade and commerce.

The war has come to remind the world that man does not live by bread alone; that the reform of society must take account of the spiritual as well as of the material needs of the individual. The Allies are fighting today not for territory or indemnities or trade advantages, but in defense of their spiritual heritage, which has come down through the changing centuries. If society is to be enriched with the democratic impulses of these spacious days we must break with the traditions of the past and cultivate a new social conscience.

HOUSE THE MACHINERY

It is unnecessary for us to tell our readers that prices of farm machinery have risen considerably in the last two years. The rise varies all the way from 15 to 35 per cent for different machines and in different localities and it is said that still further advances will be made next year. We hope that this prediction will not materialize because with the reduction in the price of steel that has recently been made by the government, it doesn't seem as though there should be any necessity for further increasing the price of farm machinery. Be that as it may, it is evident that it will pay to take the very best care possible of the machinery now on hand. If your binder can be made to last a year or two longer, it may save you the necessity of buying another one while prices are so high. The same is true of all other machinery. A binder that is well taken care of will last from ten to fifteen years on the average farm. One that is allowed to stand outside and become rusty and weather-beaten will wear out in from five to six years.

Let us avoid such unnecessary waste. See to it that every bit of machinery this fall is put under cover where it can be kept dry and where it can also be put in first-class repair on days when little or nothing else can be done. It isn't the actual damage done by the weather to a machine that stands outside that causes it to wear out so much sooner than one that is housed as it is that the parts become rusty and those that are out of repair are not put in shape, and then when the machine is needed the following year it won't work as it should and the result is unnecessary wear. When machinery is housed and put in first-class condition it will be in good repair when needed and the wear and tear on it reduced to a minimum.

WAR'S DRAIN ON FOOD RESOURCES OF FRANCE

The drain in the resources of France made by the war is shown in figures recently received by the United States Food Administration.

Using the production of 1913 as a basis, the 1917 wheat crop of France is short 53.3 per cent of 176,000,000 bushels; the potato crop is short 33.1 per cent or 165,000,000 bushels; the sugar beet crop is short 67.9 per cent or 148,000,000 bushels; the number of cattle has declined 16.5 per cent or 2,435,000 head; the number of sheep has declined 36.6 per cent or 5,535,000 head; the number of hogs has been lessened 40.2 per cent or 2,825,000 head.

Measures adopted in France for the conservation of wheat flour consist in the use of bread made of 80 per cent wheat flour with an admixture of other cereals such as rice, barley, oats, rye, maize, beans, and ground nuts. Rice flour is the most practicable of these admixtures... This rice is now being obtained from the French Colonies of Indo-China, Tunis, and Algeria, where there is an exportable surplus.

When you answer an advertisement always mention the Utah Farmer.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

CAMAS PRAIRIE, IDAHO.

480 acres land, 123 cattle, 17 horses, 2 mowers, rake, buck rake, hay derrick, spring wagon, 2 lumber wagons, sleighs, chop mill, gasoline engine, drill, binder, discs harrow and other tools. With this place goes 165 tons hay. Price $17,500.00.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER
A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

In Cache valley we have one of the best ranches in that part of the state, containing 244 acres. This ranch is under a high state of cultivation and has been farmed for 60 years. There is a good house, containing six rooms; large barn, that will hold ten head of stock; cow sheds, granary, chicken houses, hog pens; in fact, all buildings necessary on a farm and ranch. There is a first-class spring of water piped into the house and to the barn. All kinds of plows, harrows, grain drills, disc harrows, threshing machine, hay derricks and other tools too numerous to mention; 25 head of cows, 12 head of first-class horses. This property is on the main county road and right near one of the best towns in Cache valley, and has an independent water right, maintenance absolutely free. This farm is planted to grain, alfalfa, timothy, and clover, two acres of orchard, about one-eighth of an acre in small fruit. The farm is particularly adapted for stockraising, dairying and dry farming. However, there is a lot of first-class sugar beet land on this farm. We are offering this farm at the ridiculously low price of $85.50 per acre. In addition to the 244 acres there is eighty acres of pasture land adjoining that will be thrown in with the sale free of cost to the purchaser.

Just below Fourteenth South we have one acre, with a new, two-room house, for $800.

We have several first-class farms for sale in Salt Lake county. One farm of 42 acres for $11,000; another farm of 113 acres; this farm has an 8-room brick house and a 3-room frame house; has a good barn and other outbuildings. It is all under a high state of cultivation; has 11 head of fine horses, 7 head of good cows, 40 head of hogs, chickens; all machinery to run the place. There are seventy tons of good hay which go with place; 1000 bushels of grain, and other crops and machinery too numerous to mention. All goes for this price. This property is one of the best farms in Salt Lake valley and can be had for $25,000. We will accept some Salt Lake City property in exchange for this.

In the same neighborhood, 40 acres, without any improvements; has been farmed for twenty years; for $115 per acre; one-fourth down, ten years on the balance, 6 per cent.

On the state highway, two miles west of Tremonton, we have 185 acres of highly cultivated land, with a 10-room house, barns and other outbuildings. This house has a hot-water heating system, sleeping porch and every modern convenience; good orchard; water piped to the house for domestic purposes. This farm lies on the corner of the state highway and the country road, with a beautiful row of trees, a nice lawn, hedge, and the surroundings are beautiful. This place has been one of the leading farms in the Bear River valley for the last twenty years. It is under a high state of cultivation and can be had for $160 per acre, on terms.

We have, right adjoining the town of Preston, some of the best land in Cache valley. This land is under a high state of cultivation and well improved; has been known for years as one of the leading farms both in point of production and location, and character of soil, in the entire Cache valley. The man has moved away from Cache valley; has retired from business; is desirous now of selling this property on very good terms. All he wants is enough to know that the property is sold, and giving a long time on the balance, or he will consider taking Salt Lake City property in exchange. If you are looking for a home right near one of the best towns in this part of the country, this certainly will appeal to you. This property ranges in price from $150 up, with a first-class water right.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

We Write Fire Insurance.

BUY NOW

IN THE

Growing New Country

AT

Delta, Utah

ALFALFA FARMS SUGAR BEET FARMS

WHEAT, HAY AND SEED.

A NEW

Sugar Factory

JUST BUILT

Write

Melville Land Company

DAIRYING

BUYING FEEDS

W. H. Underwood.

Those who are well supplied with alfalfa or clover hay and corn silage will not have to buy very much mill feed. Those who depend upon such feeds as corn and grass hay are the ones who will be forced to purchase the largest quantity of mill products. If they would have a proper and balanced ration they must buy their protein. In making their selection they must purchase if they are going to make their purchase scientifically the concentrated feeds that give them the largest quantity of protein at the least cost per pound.

The guaranteed analysis of a food is an important guide not to be ignored. Successful dairymen have learned that between corn and cottonseed meal they get more milk from the conttonseed meal than from the corn although in a ton of both there are 2000 pounds. They know, however, that in a ton of corn there are but 150 pounds of digestible protein while in the cottonseed meal there are 750 pounds of protein or five times as much as in the corn. The corn may be the cheaper per ton but the question is, what is the realtive cost of the protein? The buyer of dairy feeds ought to consider the purchase in this light.

There is considerable variation in the cost of feeds. Between some there is a difference of but $3 to $4 per ton while in others there is a difference of $10 to $15 per ton and sometimes the feed selling at a lower price contains more protein than another food at a higher cost.

If the buyer will make a list of the foods that are available to him and will get the cost per ton of each and then from the analysis ascertain the number of pounds of protein that each contains he will be able to determine pretty accurately what each pound of protein in each feeding stuff costs.

Of course, this method of reckoning ignores the carbohydrates and fats contained in the feeding stuffs. The purchaser of feeds who has a shortage of the fats and carbohydrates will take into consideration the quantity of these materials contained in the feeding stuffs purchased.

In buying feeds one will find most available the highly concentrated advertised goods everywhere, the gluten feeds and meals, cottonseed meal and several others equally well known. And these, when figured on the basis of variety and cost per pound of protein, will meet his needs. Purchased in this manner the selection will be made intelligently and will give in return an increased production of milk and butter and also greater fertility to the land because of the manure now rich in nitrogen that will come from the organized protein.

SAVE COWS AND HEIFERS

Every farmer owes it to his country to save every productive dairy cow and her promising female offspring. By so doing, you can help feed the nation, save its children, and, above all, help to sustain the sons of the nation in their heroic effort in behalf of world freedom and right. Do not sell your cows for slaughter. Remember, in this time we all must make some sacrifice, fulfill some duty. The sons of the nation are doing their share; you on the farm can do yours by maintaining the production of milk and thus contribute to the food supply of the Allies. Remember that you can produce no food on the farm more important than milk. Remember, no nation can exist and maintain its physical and intellectual vitality and energy without milk. Butter fat is absolutely essential to the existence of our nation. Butter, cheese and ice cream are among our most wholesome and necessary foods. The supply of these vital foods depends entirely upon you, and the nation appeals to you to sustain this supply by keeping your dairy cows on your farm.

You can aid yourself and help the nation by increasing the production of your cows; this can be done by improving the quality of your cows by the use of well bred dairy sires. Every pound of milk added to your production is clear profit to you and a patriotic help to your country. Breed up and produce more. Don't breed down and produce less.

You can help the nation and yourself by exercising every care in handling the product of your cows. Avoid loss and unnecessary waste by use of clean utensils, and keeping the product in clean, cool places. A moment's attention by you may save the life of a child or a soldier. The food department of the government will render you every possible service in production and distribution both in the cost of feeds and the marketing of your products.

WHAT MAKES A GOOD MILK COW

One of the most valuable assets to be found in any dairy herd is the cow that keeps up a good flow of nice rich milk at all times regardless of conditions.

Such cows are sometimes termed as persistent milkers, but there are two kind of cows in this class. Some cows give a generous flow of milk for a great length of time but it sometimes happens that the milk is of a very poor quality at best. Such cows never will pay any large revenue or profit back to the owner, no matter how well they are cared for, but the cow that gives a generous quantity of rich milk for a reasonable length of time, under ordinary conditions will be a money maker and pay back a good profit to her owner.

Any dairy owner who wishes to add to the productive value of his herd will always be on the lookout for cows of this kind. A productive cow is not always a pretty cow. I have seen cows that really didn't have any good traits as a dairy cow except that they gave a large quantity of milk that was exceedingly rich in butter fat.

In these days, what most dairymen are looking for, and must have is dairy cows that are capable of taking care of the best feeds obtainable and converting this into a product that has a still greater value attached—that of milk, cream, butter and their various by-products.

To secure these results would be almost an impossibility when a herd is made up of cows that go dry and stay in that condition for three or four months out of the year.

In taking up the matter of a good milking cow, I have reference to the cow that does not show signs of going dry as the time for freshening draws near.

It is a well known fact, however, that she should not be milked during the entire year, while this no doubt would not be altogether harmful, yet. she should have ample time in which to rest up for another productive milking period.

One mistake often made in having rows of this kind, is the fact that most owners milk them too steadily and thereby lessen the value of the cow.

All cows should be dry from a month to six weeks before calving time so that they can have an opportunity to gain in flesh and strength and in this way be able to properly take care of and nourish the offspring.

If they are not given this privilege the calf most assuredly will be small and lack health and vigor which is so essential from the beginning in order to develop into a first class animal later on.

If a cow is not allowed a rest up period before freshening, there will also be another source of loss, that of maintaining a steady milk flow as the years of productivity roll by. Should this happen once, her value may not be greatly impaired providing she is carefully watched and given the very best attention, but if it happens a second time it is almost certain to injure her milking qualities permanently. It is very often the case that some very valuable cows are sacrificed in this or some other manner, while if proper care had been exercised they would still be, perhaps, the most valuable animals in the herd.

When a cow has been allowed to get into this kind of a condition, some way should be thought out to get her back into a good producing condition again. I would never dispose of a cow until I was convinced that her value as a dairy cow had passed by. A good cow in the dairy herd is deserving of a great amount of care and attention. It is along these lines that a great dairy business has been built.—H. W. Swope.

CORRECTING AN ERROR

In our November 24th issue a typographical error was made in the advertisement of the Chicago Hide, Fur and Wool House of Douglass Wyoming. The advertisement states that the company is capitalized at $250,000,000.00 and it should have read $250,000.00. In setting up the adveristment the error was made and it was no fault of that company in over stating the amount of their capital stock.

UNSENT

Old Rastus, a familiar figure in a section of Boston, entered a drug store on Commonwealth avenue and carefully scanned the contents of a case given over to various soaps.

"Gimme a cake, boss," finally observed the customer to the clerk who came forward. "A cake jes' like dat," indicating a particualr variety.

"Certainly," responded the clerk. "Will you have it scented or unscented?"

"I'l jes' natu'ally take it wif me, boss," said the old fellow.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE AND SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

FOR SALE $750

Buick six, 7 pass. newly painted and new top. Tires good, one spare tire, tube, and rim; thoroughly overhauled.

R. A. WOOD
2269 McClelland Ave.
Salt Lake City, Utah.

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS
Provo Utah

DUROC JERSEY'S

I have a few good Duroc Jersey fall pigs, sired by the Champion Richard's Defender and Pathfinder, out of my big type, prolific sows.

Priced very reasonable and guaranteed to please. Write me.

ERIH W. OLSEN
Virginia Idaho

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.

Virginia, Idaho.

"Home of the Champion Durocs"

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

Also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.

Mailing bags for samples sent fr .

THE MANGELSDORF SEED CO.
Atchison, Kansas.

FOR SALE

Tread powers suitable for sheep, dogs, goats, burros or ponies. Very low prices for immediate sale.

H. E. WALKER
Box 964, Salt Lake City, Utah.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER
Buhl Idaho

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

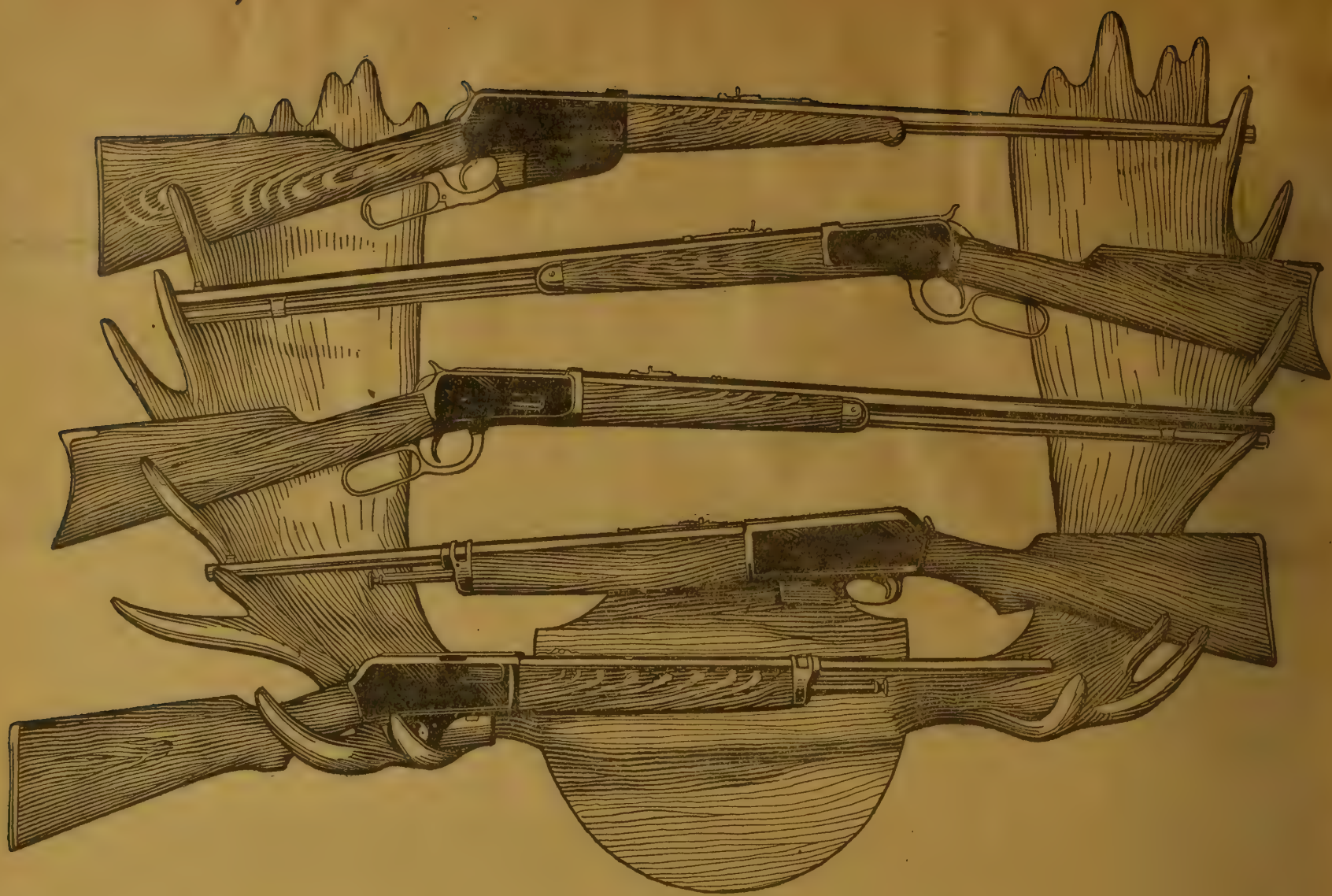
I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN
Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR



Five famous models of the world's greatest rifle makers

Here are five Winchester models, famous alike among old pioneers and sportsmen and the hunters today. These are the outcome of the old Winchester rifles that "built the West."

As the need grew, Winchester originated a model and a caliber for every purpose. Today Winchester makes a greater variety of rifles and shotguns than any other small-arms manufacturer. But the five particular models shown on this page continue to be the standard all over the country.

In the *Model 95* (at the top) the sportsman finds his most powerful weapon. This lever-action, box-magazine, repeating rifle shoots the heaviest army cartridges. Made for .30 Army, .30 Gov't Models 1903 and 1906, .303 British, and .35 and .405 Winchester Cartridges. Its high velocity and flat trajectory develop tremendous killing power at long range. Every sort of wild beast in the world has been instantly killed by this powerful sporting rifle. Nickel steel barrel.

The *Model 92*, second from the top, is a lever-action repeating rifle, made solid frame or take-down. It embodies the principles of construction of the famous rifle that was Winchester's contribution to the winning of the West. This rifle shoots standard types of ammunition that can be purchased wherever firearms are sold. Made for .44, .38, .32, and .25-20 W. C. F. Cartridges.

The next is the famous *Model 94*, the all-'round lever-action repeating rifle. It is the most popular with sportsmen and farmers because it shoots the famous .30 Winchester high-power smokeless cartridge, light in weight, but with high stopping power, and easily obtained. It is also made to handle the .25-.35, .32 Winchester Special, .32-.40 and .38-.55 cartridges. Made with nickel steel barrel to handle the high-power cartridges.

The *Model 10*, next shown, is a hammerless, take-down, self-loader. Shoots only its own Winchester .401 Self-loading cartridges. Hits a harder blow than any other self-loader made. Every working part made of nickel steel. Shoots five knockdown shots as fast as the trigger can be pulled and will down any beast found in North America.

At the bottom is the *Model 07*, the "little brother" to the Model 10. Shoots only its Winchester .351 Self-loading cartridges. The best self-loader for deer hunting and for all except the very biggest game.

The barrel *is* the gun

Men who know guns realize that the accuracy and durability of a rifle lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard of quality of the barrels on the highest and lowest priced Winchester guns. With Winchester the barrel *is* the gun and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel.

The Winchester barrel

The barrel of every Winchester rifle has been bored to micrometer measurements for the cartridge it is meant to shoot. In rifling the barrel the exact twist that is necessary to produce the best results with every cartridge has been mathematically calculated and is verified by exhaustive practical tests before leaving the factory.

A bullet fired from a Winchester barrel spins point on with unerring accuracy the limit of its range.

The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that, with proper care, will last a lifetime.

What (P/W) means

This mark on the barrel means *Viewed and Proved Winchester.* This stamp stands for Winchester's guarantee of quality, with 50 years of gun-making reputation behind it.

Every rifle that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times for smooth action and accuracy, and with excess loads for strength. At every stage of Winchester manufacture, machine production is supplemented by human craftsmanship. It is a *test and adjustment process.*

Write for details of Winchester rifles, shotguns and ammunition

The Winchester catalog is an encyclopedia on rifles, shotguns and ammunition. It gives detailed specifications of these five famous models shown here and describes at length the principles on which every one of the world-renowned Winchester rifles and shotguns is built. Write today. We will mail you a copy free, postpaid.

WINCHESTER REPEATING ARMS CO.
Dept. W D 5 NEW HAVEN, CONN.

HOME DEFENSE LEAGUES!

We have a Winchester for County and Home Defense Leagues which is meeting with Universal approval. Many Home Defense Leagues throughout the United States have already been equipped with this gun.

WINCHESTER

World Standard Guns and Ammunition

30,5-
UT ag. Sem.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 20 LEHI AND SALT LAKE CITY, UTAH. DECEMBER, 15, 1917

Is Utah's Alleged Water Shortage Real?

By O. W. Israelsen of the Utah Experiment Station.

Pioneer settlers in various parts of Utah frequently tell of the serious water shortages of early days, and of the conflicts which arose in distributing water to various claimants. In relating these early experiences, they express wonder at the vast increase in the area of land brought under irrigation without increasing the water supply. Very recently one settler of 1865 said that he remembered when Cache Valley irrigated only one fourth of the land that it now irrigates with the same quantity of water.

"At that time, people argued that extension of irrigation to new land without building reservoirs was impossible," he continued "and now I believe that past experience proves that we shall yet irrigate twice as much land as we do with our present water supply."

The above is by no means an isolated case. It is typical of similar remarks heard during the last two years among pioneer irrigators in Uintah, Sanpete, Sevier, Piute, Wayne, Garfield, Kane, Washington, Utah and Salt Lake Counties; the principal irrigated sections of Utah: typical, not only in Utah, but also of the Inter-mountain West. The uniformity of attitude evidence by such expressions in so many sections suggests a deep-seated change of irrigation—farmer—public opinion concerning actual water needs for profitable crop production and this new public opinion implies that Utah is not yet experiencing a real water shortage.

What is the cause of this marked change in opinion? Does the sugar beet crop, which has so largely taken the place of wheat on the irrigated farm, need less water than the crop of wheat? Has alfalfa, or any crop in fact, so changed that it actually uses less water now than it did in years past; or have Utah's climatic conditions, soils, methods of irrigation, and individual irrigators been so changed as to reduce the quantity of water actually needed to grow crops? And further, if significant changes have occurred, that have decreased the amount of water needed to produce crops, and hence made the alleged water shortage only apparent and not real, are these changes still continuing? If not, is it desirable and within the power of Utah irrigators to so change existing conditions that a real water shortage will not be experienced in the State as a whole by the present generation?

Careful examination of Utah's irrigation conditions, past and present, warrants the assertion that the change of opinion of the irrigation-public has been caused by two general movements: one a change is some physical conditions; the other an inherent change in irrigators.

Storage of water for irrigation defers the time of a real water shortage.

Tracing the depth to which water penetrates and thus avoiding waste through excessive applications.

Concrete lined canals help to prevent water shortage.

Sugar beets really require more water than wheat, and alfalfa crops, like others, no doubt require (other things being equal) the same amounts of water as they did formerly; and hence these factors have not contributed to a decrease in water needs. Climatic conditions have changed but little, if any; but significant changes have no doubt occurred in soils, irrigation methods and in the individual irrigators. Many soils have been made more fertile by the nitrogen added through the growing of legume crops as well as by the addition of manure; and increased fertility actually decreases the amount of water needed to grow a paying crop. Others have been so saturated with water that they now need little, if any irrigation. These things are now tending to extend the time of a real water shortage, and they support the belief that the present alleged water shortage is only apparent.

Flood waters have been stored for use when most needed; leaky ditches have been puddled and lined; unlevel lands have been smoothed; and small continuous-flow delivery streams have been consolidated into large-stream rotation deliveries. All these improvements have contributed to the increase of land area supplied from a given stream system. Only a meager beginning has been made, however. These changes are now going on and will, in all probability, continue for decades to come, as the number of people in the State increases and the value of making the water supply cover the greatest possible area of land becomes more fully appreciated. At that time, and not until then, Utah may experience a real water shortage.

Significant as the changes in mental attitude of individual irrigators have been, herein lies the greatest opportunity for advancement, and the fundamental basis for permanent progress. Individual attitude toward water rights has not kept pace with the advances in physical irrigation conditions. Some court decrees written more than twenty years ago, though entirely unfitted to present conditions, are tenaciously adhered to, despite the fact that adherence to such decrees is bad for both the individual irrigator and the public. Quantities of water which were properly and beneficially used twenty years ago are now frequently used very wastefully. In spite of the fact that such wastefulness in the use of water under old decress is generally recognized, many irrigators maintain that they must use their full share of water in order to maintain their decreed rights, and unfortunately, this conception has been permitted to grow, notwithstanding the assertion by the legislature that "beneficial use of water shall be the basis, the measure, and the limit of all rights thereto." Use of excess amounts of water to maintain rights thereto is certainly not "beneficial use," and whether or not such practice shall continue must be decided by the irrigators of Utah. If they decide that such practice shall continue, Utah's alleged water shortage may soon become real, whereas if they decide that it must be stopped, they will take a significant step in making the alleged water shortage only apparent. And the State's irrigators will, no doubt base their decision on that condition which is likely to bring the greatest good to the greatest number or which will contribute most to their permanent productivity of Utah soils under irrigation and thus extend the time of a real water shortage. The fact that

(Continued on page 13)

MAKE MORE MONEY---PRODUCE MORE PORK

You are assured a profit---Be patriotic and raise more pigs

Trapping Is Profitable

Many people make good money this season of the year in doing some trapping. Furs now bring a good price and pay well for the cost and time of getting them.

Good Traps

Good traps are the most essential thing to select in the matter of trapper's equipment. If poor, cheap traps are used the animals will either pull out or twist a foot off and escape. Thus is not only a high-priced pelt lost, but a wiser animal is left to cause others of its kind to be more cautious. Watch for advertisements of the most progressive trapmaker's product and buy what appeals to you as being the most effective device. You should buy specially designed traps to suit the particular animals you expect to trap. For instance, the mink is an agile little animal that is quite hard to hold, but seldom gnaws or twists out. A No. 2 double-spring trap with good springs is the proper thing for fox and raccoon. A high-gripping trap is required for skunk and muskrat to prevent them from gnawing and twisting out.

One general fault of traps manufactured in the past has been that they gripped too low on the animal's leg. The higher any trap catches an animal the less chance it has to escape.

Care of Raw Furs.

However successful the trapper may be at catching animals, he must present the furs in first-class shape if the most is to be realized in dollars and cents. They should be cased evenly on the board and never placed near artificial heat or in the sun to cure. All burrs, mud and such foreign matter should be combed out before sending to the dealer.

Habits of Animals

It is necessary to know thoroughly the habits of the animals that are being trapped to secure the most pelts. Otter and mink generally stay close to the watercourses and are wandering animals that travel long distances, exploring all holes, drift piles, tiles and ditches. Muskrat and skunk are most often caught at their dens, though the muskrat will wander up the bank of a stream searching for food. During the fall they will make well-worn slides in climbing up and down the bank from their feeding places. The raccoon is a semi-land animal, generally denning in bluffs or hollow trees and searching along the streams for its food. Foxes generally stick to the woods and ridges, and here is where to look for their trails and dens.

There are many peculiarities of animals that the successful trapper takes advantage of in making sets. For instance, the 'coon is a curious animal that will invariably investigate any bright object in the water. So a catch is often made when the trap pan is merely covered with tinfoil and set in the water where the 'coon is accustomed to feeding. The habit of the mink to explore all holes and dens makes sets at such places very successful.

Muskrat and Skunk Trapping

The skunk is more at home in rocky and hilly country. If no hills are near they den under barns, straw stacks and the roots of an up-turned tree. Every rocky bluff along a stream or body of water should be searched for skunk dens. It will be readily seen whether the den is in use or not, as there will be well-worn trails leading away from it and shedded hairs lying around the smooth, worn mouth of the den. Generally the odor will be sufficiently strong to tell whether the den is occupied.

This animal is easily attracted by tainted meat bait. Chicken is best and should be hung up over the trap near their trails or in a hollow tree, if one is near.

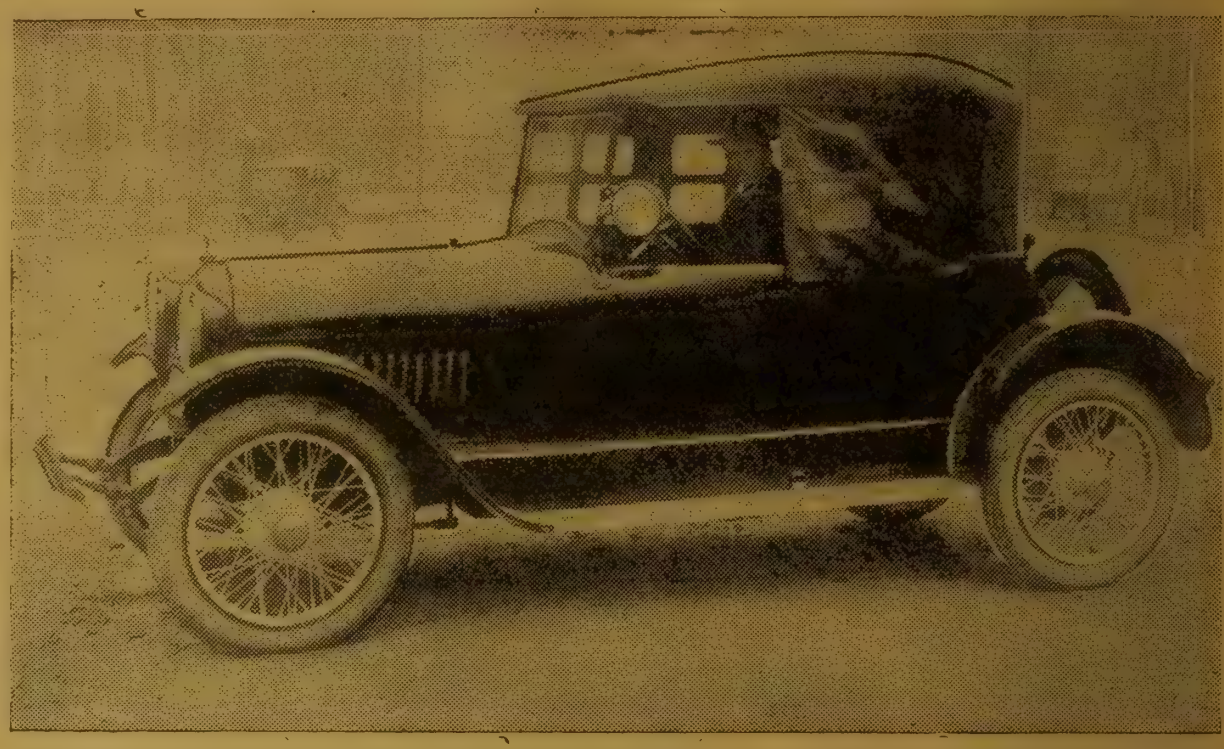
In the fall, when the muskrats are busy feeding and laying up a winter's supply, they will have well-worn trails and slides along the banks of streams that will be easily found. Traps set at the foot of the side or in the trials, with sticks stuck up to guide them in the trap will be producive of many rats. The trap should be lightly covered with mud or fine leaves, as a 'coon or mink is liable to happen along and get caught.

One of the best baits I have used for muskrats is parsnip, with apples a close second. Oil of anise is a good scent bait for use in the winter and spring. The bait should be placed on a stick over the trap if no thieves are in the community, otherwise place the bait around the trap in such a manner that it will not be noticed by a passerby.

Paige Owners Appreciate New Service

Letters of Congratulation Pouring In

INthe picture, J. W. Jackson of Fountain Green, one of Utah's big cattle raisers, is seen at the wheel of his new Glendale roadster. Mr. Jackson was one of the first Page owners to recieve a personal call from the now famous "yellow streak" service car. This car, driven by an expert mechanic, has just completed a tour of southern Utah and is now on the way around the northern section of the state.



Letters from all over the state of Utah are reaching Sales Manager J. E. Windle of the Paige Motor Sales company from Paige owners who are voluntarily expressing their appreciation of the new statewide service inaugurated by the company for the benefit of its patrons.

When Mr. Windle first proposed the establishment of a continuous all year service for Paige owners in all parts of the state without cost to the owners some of his friends appeared a bit skeptical. They pointed out to him that the idea was revolutionary and that at best it could be regarded as only an experiment. Though the "yellow service car" has been on the road only two weeks, Mr. Windle is already convinced that it has more than justified the expense in the increased satisfaction of the big army of motorists who own one or more of the famous Paige models.

Following is a partial list of owners who will be called upon while the car is away this time:

Paige owners in Davis county—Frank Smith, Centerville; J. Holbrook, Bountiful; M. Holbrook, Bountiful; B. Holbrook, Bountiful; E. B. Clark, Farmington; Bishop Stringham, Bountiful.

Paige owners in Ogden territory—D. O. McKay, 676 Twenty-first street; R. M. Jones, Hooper, Utah; J. W. Dahl, Hooper, Utah; George R. Bennett, Hooper, Utah; H. P. Green, Hooper, Utah; David Holbrook, Clearfield, Utah; George Childs, Clinton, Utah; Alex Patterson, Roy, Utah; George D. Bennett, 2673 Van Buren; Walter Bingham, 445 Thirty-second street; Ogden commission, 2246 Washington avenue.

Paige owners in Cache valley—Lyman Marble, Deweyville, Utah; Porter Barnard, Deweyville, Utah; D. D. Butters, Lewiston, Utah, George W. Davis, Avon, Utah; H. C. Parker, Wellsville, Utah; J. C. Parker, Wellsville, Utah; C. W. Porter, Logan, Utah; A. Anderson, Logan, Utah; Alfred Picot, Logan, Utah; Alvin Nielson, Milleville, Utah; R. T. Thornley, Smithfield, Utah; W. A. Blair, Lewiston, Utah; Thomas Bowden, Lewiston, Utah; A. E. Bowden, Logan, Utah; J. A. Thompson, Clarkston, Utah; T. S. Karen, Lewiston, Utah; J. D. Baker, Mendon, Utah; Willard Parker, Wellsville, Utah; John Butters, Clarkston, Utah; Mrs. L. Mower, Lewiston, Utah; Ralph Spence, Wellsville, Utah; Robert Murdock, Logan, Utah; James Lishman, Wellsville, Utah.

The service care will go straight through to Logan on the up trip and will make all intervening towns on its return.

DISTRIBUTORS AFFECTED BY THIS SUPERIOR PAIGE SERVICE

Logan Sales & Service Co.	Mack B. Crome	Pope Garage	Helper Garage
Logan, Utah.	Bountiful, Utah.	Evanston, Wyoming.	Helper, Utah.
W. H. Barnard	W. H. Vowles	Booth Mercantile Co.	Williams & Preston
Brigham City, Utah.	Tooele, Utah.	Midvale, Utah.	Ely, Nevada.
Paige Motor Sales Co.	Walter Evans	W. A. Hines	Auto Lodge
Ogden, Utah.	Park City, Utah.	Provo, Utah.	Myton, Utah.

PAIGE MOTOR SALES CO., Salt Lake City

FARM ADVERTISING PAYS IN DOLLARS AND CENTS

W. E. Grimes.

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The Feeding of Silage To Dairy Cows

By J. E. Dorman, U. S. Dairy Division.

Many Utah Dairymen are feeding silage this season for the first time and a report has been circulated that when silage is fed no other feed is necessary. This is not true. While silage is an excellent feed, it is not a complete one for dairy stock. It is too bulky and watery and contains an insufficient amount of protein and mineral matter to meet the requirements of the dairy cow. It should be fed in combination with some leguminous hay, such as clover, alfalfa or cow-pea hay. These will tend to correct the deficiencies of the silage in dry matter, protein and mineral matter. Corn silage and alfalfa or clover hay make a satisfactory and fairly well balanced ration and an economical milk flow can be obtained on this alone. However, a grain ration fed in addition to the silage and alfalfa to cows in full milk is desirable because it will add strength which tends to lengthen the lactation period.

Amount to Feed.

The amount of silage to feed a cow will depend upon the capacity of the animal to consume feed. She should be fed as much as she will clean up without waste when consumed along with her hay and grain. Raise or lower the amount until the proper quantity is ascertained. Generally speaking, a good cow should be fed just short of the limit of her appetite. If she refuses any of her feed it should be reduced at once. The small breeds will eat 25 or 30 pounds per day; the large breeds 40 or more; and the mediumsized ones amounts varying between.

Rations.

Ironclad directions for feeding cows can not be given. In general, however, they should be supplied with all the roughage they will clean up with grain in proportion to butterfat produced. The hay will ordinarily range between 5 and 12 pounds per cow per day when fed in connection with silage. For Holsteins 1 pound of concentrates for each 4 pounds of milk produced will prove about right. For Jerseys 1 pound for each 3 pounds of milk or less will come nearer meeting the requirements. The grain for other breeds will vary between these two according to the quality of milk produced. A good rule is to feed seven times as much grain as there is butterfat produced.

The following rations have been found satisfactory:

For a 1,300-pound cow yielding 40 pounds of milk testing 3.5 per cent:

	Pounds
Silage	40
Clover, cowpea, or alfalfa hay	10
Grain mixture	10

For the same cow yielding 20 pounds of 3.5 per cent milk.

	Pounds
Silage	40
Clover, cowpea, or alfalfa hay	5
Grain mixture	5

For a 900-pound cow yielding 30 pounds of 5 per cent milk.

	Pounds
Silage	30
Clover, cowpea, or alfalfa hay	10
Grain mixture	11

A good grain mixture to be used in a ration which includes silage and some sort of leguminous hay is composed of:

	Parts
Corn chop, or chopped barley	4
Wheat bran	2
Linseed-oil meal or cottonseed meal	1

In case the hay used is not of this kind some of the corn chop may be replaced by linseed or cottonseed meal. In many instances brewers' dried grains or crushed oats may be profitably substitued for the bran, and oftentimes gluten products can be used to advantage in place of bran or oil meals.

Time to Feed.

The time to feed silage is directly after milking or at least several hours before milking. If fed immediately before milking the silage odors may pass through the cow's body into the milk. Besides, the milk may receive some taints directly from the stable air. On the other hand, if feeding is done subsequent to milking, the volatile silage odors will have been thrown off before the next milking hour. Silage is usually fed twice a day. Many objections have been made to the feeding of silage, some condenseries even refusing to let their patrons use it. These objections are becoming less common, since milk from cows fed silage in a proper manner is in no way impaired; furthermore there is nothing about silage that will impair the health of the animals.

Feeding Frozen Silage.

Frozen silage must be thawed before feeding. If it is then given immediately to the cows before decomposition sets in no harm will result from feeding this kind of silage; neither is the nutritive value known to be changed in any way.

Silage for Calves, Bulls and Dry Cows

Calves may be fed silage as soon as they are old enough to eat it. It is perhaps of greater importance that the silage be free from mold or decay when given to calves than when given to mature stock. They may be given at all times all the silage they will eat up clean. Yearling calves will consume about one-half as much as mature stock that is, from 15 to 20 or more pounds a day. When supplemented with some good leguminous hay, little, if any, grain will be required to keep the calves in a thrifty, growing condition.

There is a decided opinion among some breeders of dairy stock that a large allowance of silage is detrimental to the breeding qualities of the bull. Whether there is any scientific foundation for this opinion remains to be determined. Pending further investigations, however, it is advisable to limit the allowance to about 12 pounds of silage a day for each 1,000 pounds of live weight. When fed in this amount silage is thought to be a good, cheap and safe feed for bulls. It should of course be supplemented with hay, and with a small allowance of grain also in the case of bulls doing active service or growing rapidly.

Cows when dry will consume almost as much roughage as when they are milked. Silage may well form the principal ingredient of the ration; in fact, with 25 to 40 pounds of silage and a small supplementary feed of clover, cowpea, or alfalfa hay, say 5 to 6 pounds a day, the cows will keep in good flesh and even make some gain. Cows in thin flesh should receive in addition a small amount of grain. Silage will tend to keep the whole system in good condition and in this way lessen the troubles incident to parturition.

Silage for Summer Feeding

One of the most trying seasons of the year for the dairy cow is the latter part of summer and early fall. At this season the pastures are often short or dried up, and in such cases it is a common mistake of dairymen to let their cows drop off in flow of milk through lack of feed. Later they find it impossible to restore the milk flow, no matter how the cows are fed. Good dairy practice demands that the milk flow be maintained at a high level all the time from partiurition to drying off. It becomes necessary, therefore, to supply some feed to take the place of the grass. The easiest way to do this is by means of silage. Silage is cheaper and decidedly more convenient to use than soiling crops.

The amount to feed will depend upon the condition of the pastures, varying all the way from 10 pounds to a full winter feed of 40 pounds. It should be remembered in this connection that silage contains a low percentage of protein, so that the greater the amount of silage fed the greater must be the amount of protein in the supplementary feeds to properly balance the ration.

Feeding Beet Pulp and Molasses

Written for Millard County Farm Bureau News by Dr. W. E. Carroll, U. A. C.

Livestock appear in their roll of highest service to mankind when their growth and gain in weight are made from waste and by-products not suited directly for human food. In most sections of the State there are available only a limited number of such feeds at prices sufficiently low to justify their use. When ten dollars worth of a by-product feed will not produce as much gain in weight in cattle as ten dollars worth of wheat, or some other feed which is suitable for direct human consumption, it is not good economy for the feeder of beef cattle to use the by-product in the ration. Probably in these abnormal times when the value of human food cannot be completely estimated in dollars and cents, the feeder can well contribute a little to the common good by feeding by-products even though their feeding value is somewhat less than grains having a human food value.

In sections near sugar factories two by-products are available for cattle feeds which can very largely replace the grain in the ration. These are wet beet pulp and beet molasses. The pulp contains so much water (about 90 per cent) that the cost of hauling it any considerable distance from the factory prohibits its very wide use. Molasses, on the other hand, being a more concentrated feed, can be fed at greater distances. Both, however, are feeds which require for successful results, special skill on the part of the feeder and careful observation throughout the feeding period.

They are carbohydrate in nature and are also rather laxative. Such characteristics suggest that they would best combine with some high protein, rather constipating roughage. A single roughage having these two characters is hard to find. The protein can well be supplied in alfalfa hay, while straw will help to counteract the laxative effect of the other feeds and will at the same time reduce the cost of the ration.

The particular combination of these feeds which will give best results will depend upon the relative prices of the feeds, the age of the cattle to be fed, and the object for which they are fed. Where alfalfa hay is relatively cheap, say below $7 per ton, it will be advisable to feed a fairly liberal allowance of hay. With high priced hay, on the other hand the animals should be encouraged to eat as much pulp and straw as is consistent with good gains. The allowance of molasses will be governed chiefly by the ability of the animals to consume it without injury. When it is to be fed for only a short time, as in case of fattening animals, a larger amount can be fed than is safe for breeding stock on feed for a longer period. Fattening animals have been fed with safety from 4 to 6 pounds of molasses for each 1000 pounds liveweight of steers. The amount which can be safely fed to breeding stock has not been definitely determined. Probably not more than one half that suggested for fattening stock should be given. Straw can well be kept in a rack before the animals at all times. Usually, pulp can also be fed in unlimited quantities. Exception to this must be made where the pulp is hauled any great distance.

The following ration can be taken as a standard for fattening cattle, variations being made as the individuality of the animals may necessitate. The weights suggested are for each 1000 pounds live weight and should be fed only after gradually accustoming the animals to the new feeds.

Alfalfa hay	15— 20 pounds.
Beet pulp	90—125 pounds
Molasses	4— 6 pounds
Straw at will.	

During the finishing period it will probably be necessary to add from 3 to 5 pounds of grain. Some grain may be advisable throughout. The amount under any condition can only be determined by the careful observation of the feeder in charge.

To make it a real "war ration" the grain in most sections of the State could well be bran and shorts. In most cases this will also be cheaper than the grain. Low grade wheat, barley, corn, or rye are all suitable where grain is to be added. It will probably pay to grind all of these grains, otherwise a considerable quantity may pass through the animals unutilized.

To prevent waste, the hay and straw should usually be fed in racks, the molasses can be diluted and sprinkled over the hay or straw or it can be poured over the pulp and fed with or without grain in regular feed bunks. The bunk should be of 2 inch material with 4x4 legs. It is also necessary to brace it well. The bunk is made as a shallow wagon bed on legs. The box part proper is about 8 inches deep and 3½ to 4 feet wide. It should stand on 4x4 legs so that the top of the bunk is about 3½ feet above the ground. In very muddy feed lots it may be advisable to build a 6-foot plank platform on each side of the bunk to keep the animals out of the mud while feeding. Where the lots are good size the bunk can be moved from time to time to the drier places About 3 feet on the side of the bunk should be allowed for each mature animal.

DAIRYING

HOW TO MAKE COTTAGE CHEESE ON THE FARM

K. J. Matheson and F. R. Cammack.

A Desirable Food Easily Prepared.

Cottage cheese can be made on the farm or in the home with little labor and expense. It is a palatable, nourishing product that furnishes a means of utilizing skim milk to excellent advantage.

Cottage cheese, a most palatable and nutritious product, is one of the few varieties of cheese which can be manufactured on a small scale. It furnishes a convenient and economical means for using skim milk as a human food, and supplies, more cheaply than meat, the protein or body-building part of the diet. In fact, pound for pound, it contains 25 per cent more protein than a medium-fat side of beef and costs about half as much.

The haphazard methods used in the making of this product, together with the lack of simple and easily available directions, probably are responsible for the small quantities made and consumed in the farm home. Uncertainty of results and defects in the finished product also have been causes for discouragement to the beginner. It is hoped, however, that by following the directions given in this bulletin a better and more uniform product may be obtained.

For making the cheese in small quantities for home use a very simple process and ordinary household equipment will suffice. But if it is desired to market the product and to insure good, uniform quality it will be necessary to follow somewhat more elaborate methods. Details sometimes must be modified according to conditions, and only experience will give proficiency.

Quality and its Requisites.

Cottage cheese is judged by its flavor and texture. A high-quality cheese should have a clean, mild, acid flavor and a texture smooth, free from lumps, and uniform or homogeneous throughout. The undesirable flavors commonly found are described as unclean, tasteless, too acid, and sometimes even bitter. Flavor can be controlled by the use of clean, sweet skim milk and a good "starter," but texture depends largely upon careful manipulation during the making process. Good, clean skim milk, clean utensils, and careful attention to the details of making are essential to good quality in the product.

Good Skim Milk Necessary.

The first consideration in the production of good cottage cheese is the quality of the milk itself. Milk which is dirty or has undergone any abnormal fermentation is undesirable. The fresher the milk the more satisfactory it is for cheesemaking, because then it is possible to direct and control the souring. It is absolutely necessary to give the milk proper attention, both at the time of its production and in all its subsequent handling. The temperature at which it is kept from the time of production until made into cheese determines in a large measure the quality of the cheese. For best results milk should be kept cool, at 50 degrees F. or lower, if possible, until it is to be made into cheese.

Cleanliness of Utensils.

The material and construction of all equipment used in handling milk and in the manufacture of cheese should be smooth and free from crevices, so as to allow easy and efficient cleaning. The most scrupulous care should be exercised in order to keep all utensils sweet and clean. For cleaning utensils the following method is advised:

1. Rinse with cold water.
2. Wash and scrub with hot water to which a cleaning powder has been added.
3. Rinse in hot water above a temperature of 150 degrees F.
4. Steam or immerse in boiling water for five minutes.
5. Place all equipment in a clean place free from dust.

A Simple Way to Make Small Quantities for Home Use.

One gallon of skim milk will make about 1½ pounds of cheese. If the milk is sweet it should be placed in a pan and allowed to remain in a clean, warm place at a temperature of about 75 degrees F. until it clabbers. The clabbered milk should have a clean, sour flavor. Ordinarily this will take about 30 hours, but when it is desirable to hasten the process a small quantity of clean-flavored sour milk may be mixed with the sweet milk.

As soon as the milk has thickened or firmly clabbered it should be cut into pieces 2 inches square, after which the curd should be stirred thoroughly with a spoon. Place the pan of broken curd in a vessel of hot water so as to raise the temperature to 100 degrees. F. Cook at that temperature for about 30 minutes, during which time stir gently with a spoon for 1 minute at 5-minute intervals.

At the conclusion of the heating, pour the curd and whey into a small cheesecloth bag (a clean salt bag will do nicely) and hang the bag on a fruit-strainer rack to drain, or the curd may be poured into a colander or a strainer over which a piece of cheesecloth has been laid. After 5 or 10 minutes work the curd toward the center with a spoon. Raising and lowering the ends of the cloth helps to make the whey drain faster. To complete the draining tie the ends of the bag together and hang it up. Since there is some danger that the curd will become too dry, draining should stop when the whey ceases to flow in a steady stream.

The curd is then emptied from the bag and worked with a spoon or a butter paddle until it becomes fine in grain, smooth, and of the consistency of mashed potatoes. Sour or sweet cream may be added to increase the smoothness and palatability and improve the flavor. Then the cheese is salted according to taste, about one teaspoonful to a pound of curd.

Because of the ease with which the cheese can be made it is desirable to make it often so that it may be eaten fresh, although if it is kept cold it will not spoil for several days. If the cheese is not to be eaten promptly it should be stored in an earthenware or glass vessel rather than in one of tin or wood, and kept in a cold place.

The Use of Starters.

The first step in the making of cottage cheese is to sour or ripen the milk. If care has been used in the production and handling of milk, a good grade of cheese may be made by allowing the milk to sour naturally. Uncertainty of results and lack of uniformity in the cheese, however, have caused many to resort to a more definite means of controlling fermentation or souring by the use of starters. Some of the dangers and disadvantages of natural souring are—

1. Slow coagulation of curdling.
2. Gassy and undesirable fermentations, causing loss of curd in whey.
3. Bitter and other undesirable flavors.
4. Lack of uniformity in the cheese.

When cottage cheese is to be produced in large quantities it is advisable to use a starter. Starters aid and hasten acid fermentation and tend to suppress and eliminate undesirable fermentation. A starter, in brief, is a quantity of milk in which the acid-forming bacteria have grown until the milk contains a great number of them. There are two kinds of starters, commercial and homemade.

Commercial Starters.

When cottage cheese is to be made on a large scale it is advisable to use a commercial starter, obtainable from a reliable starter company or through a dairy-supply house. The small package of starter, which may be either liquid or solid, is added to a pint of pasteurized skim milk and the milk covered and set away at 75 degrees F. to sour. This is called a "mother starter." After curdling or coagulation, a teaspoonful of the "mother starter" is added to a quart of pasteurized skim milk, which, when coagulated, is used to ripen the milk for cheesemaking. In pasteurizing milk for starters, it is heated to 175 degrees F. and held at that temperature for 30 minutes, after which it is cooled to 75 degrees F. before the starter is added.

Homemade Starters.

Homemade starters are made as follows:

1. Clean thoroughly and boil for five minutes several pint fruit jars or wide-mounthed bottles, together with tops or tumblers for covering them. (Fig. 1.) After boiling, keep the jars or bottles covered to prevent the entrance of bacteria.
2. Select several pint samples of fresh milk, put into the jars or bottles, cool to 75 degrees F., cover and keep at that temperature until curdling occurs.
3. The curdling or coagulation should take place in about 30 hours. An ideal curd should be firm, smooth, marblelike, free from holes or gas bubbles, and should show little separation of the whey. To be a good starter the curd should have a clean, sharp, sour or acid flavor.
4. Select the sample that most closely meets these conditions and propagate it. This is done as follows:

a. Prepare, shortly before using, a quart jar or bottle and a teaspoon according to the method described in paragraph 1.

b. Fill the jar or bottle with fresh skim milk and pasteurize by heating to 175 degrees F. and keeping at that temperature for 30 minutes.

c. Cool to 75 degrees F. and add a teaspoonful of curdled milk or starter described in paragraph 3, and set away to curdle.

d. Propagate the starter from day to day until one is found with desirable qualities. In doing this repeat steps a, b, and c, but in the last use the starter of the day before instead of that originally mentioned in paragraph 3.

Pasteurization.

While for small-scale operations the

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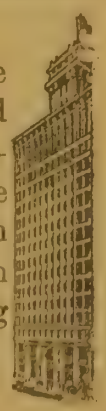

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SALT LAKE CITY

pasteurization of milk may not always be practicable, it permits a better control of the fermentations, increases the yield of cheese, and renders the product safe from disease-producing organisms. If milk is pasteurized it is absolutely necessary to use a vigorous starter for ripening. Otherwise, great difficulty is found in draining the curd, and as a result the cheese probably is spoiled.

Skim milk is pasteurized for making cottage cheese by heating it in a pail, can or vat to a temperature of 145 degrees F. and holding it at that temperature for 30 minutes. The milk then is cooled quickly to 75 degrees F., when it is ready for adding the starter.

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WAYS TO USE COTTAGE CHEESE

Suggestion by the Department of Agriculture.

Cottage cheese is richer in protein than most meats and is very much cheaper. Every pound contains more than three ounces of protein, the source of nitrogen for body building. It is a valuable source of energy also, though not so high as foods with more fat. It follows that its value in this respect can be greatly increased by serving it with cream, as is so commonly done.

Cottage cheese alone is an appetizing and nutritious dish. It may also be served with sweet or sour cream, and some people add a little sugar, or chives, chopped onion, or caraway seed.

The following recipes, according to home economics specialists of the department, illustrate a number of ways in which cottage cheese may be served:

Cottage Cheese With Preserves and Jellies.

Pour over cottage cheese any fruit preserves, such as strawberries, figs, or cherries. Serve with bread or crackers. If preferred, cottage cheese balls may be served separately and eaten with the preserves. A very attractive dish may be made by dropping a bit of jelly into a nest of the cottage cheese.

Cottage Cheese Salad.

Mix thoroughly one pound of cheese, one and one-half tablespoonfuls of cream, one tablespoonful of chopped parsley, and salt to taste. First, fill a rectangular tin mold with cold water to chill and wet the surface; line the bottom with waxed paper, then pack in three layers of the cheese, putting two or three parallel strips of pimiento, fresh or canned between the layers. Cover with waxed paper and set in a cool place until ready to serve; then run a knife around the sides and invert the mold. Cut in slices and serve on lettuce leaves with French dressing and wafers or thin bread-and-butter sandwiches. Minced olives may be used instead of the parsley, and chopped nuts also may be added.

Cottage Cheese Rolls.

(To be used like meat rolls.)

A large variety of rolls, suitable for serving as the main dish at dinner, may be made by combining legumes (beans of various kinds, cowpeas, lentils, or peas) with cottage cheese, and adding bread crumbs to make the mixture thick enough to form into a roll. Beans are usually mashed, but peas or small Lima beans may be combined whole with bread crumbs and cottage cheese, and enough of the liquor in which the vegetables have been cooked should be added to get the right consistency; or, instead of beans or peas, chopped spinach, beet tops, or head lettuce may be added.

Boston Roast.

1 pound can of kidney beans, or equivalent quantity of cooked beans.
½ pound of cottage cheese.
Bread crumbs.
Salt.

Mash the beans or put them through a meat grinder. Add the cheese and bread crumbs enough to make the mixture sufficiently stiff to be formed into a roll. Bake in a moderate oven, basting occasionally with butter or other fat, and water. Serve with tomato sauce. This dish may be flavored with chopped onions cooked until tender in butter or other fat and a very little water.

Pimiento and Cottage Cheese Roast

2 cupfuls of cooked Lima beans.
¼ pound of cottage cheese.
3 canned pimientos chopped.
Bread crumbs.
Salt.

Put the first three ingredients through a meat chopper. Mix thoroughly and add bread crumbs un-

(Continued on page 15)

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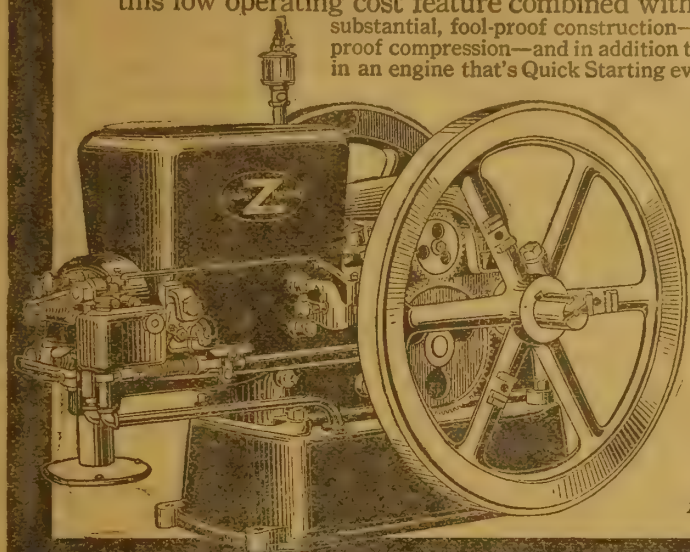

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WHY MILK SHOULD BE PASTEURIZED

The value of milk as a food is becoming better known all the time Milk is known to carry germs of certain kind of diseases; to protect the one who may use milk against anything of a contageous nature it is put through a modern process called pasteurization.

Bacteria are so small that they are readily borne on the smallest dust particles of the air. They are present in and among almost everything. A solid, liquid or gas germ free is said to be sterile. Those found in milk are of the lowest order of plant life and for the most particular change which they produce—i. e., souring, bitter taste, foul smell or some other unnatural condition.

The lactic acid germs are generally the most numerous and the first to show their work. They gain access to the milk immediately after if not while being drawn. To prevent this is practically impossible. Furthermore, there are present in warm milk all the joys and comforts of home for bacteria. Each half hour the population is doubled—a new generation is launched upon the "milky way." Unless this increase be held in check a single germ will in 24 hours be responsible for nearly 17,000,000 others. Fortunately, the development can be checked.

There are three general means of controlling the germ situation.

(1) Prevent infection.
(2) Retard germ growth.
(3) Destroy germs already present.

To prevent the infection of milk is parctically impossible. The milker many have clean hands and clothes, the cow's udder may have been washed and dried, the stables the cleanest ever, the utensils thoroughly sterilized yet, invaluable as are these practices in keeping down the bacteria count, the prevention of infection is not absolute.

Retarding germ growth can be accomplished very effectively by the prompt and continued use of cooling devices. Keep the milk cool from the beginning.

Destroying the germs already present is often accomplished by applying certain well known drugs. This, while effective, is always to be condemned as harmful to the human system. Heating to high temperature is the only safe and feasible means. To absolutely sterilize requires a temperature of 212 degrees to 240 degrees F. for one hour on each of three successive days. Milk subjected to this treatment suffers seriously in taste and food value. Hence pasteurization.

Pasteurization differs from sterilization only in the degree of heat used. It may be called incomplete or partial sterilization. The general practice is to heat it for 25 minutes at a temperature of 145 degrees F. and then quickly cool to 50 degrees.

When properly executed it is an efficient and practical means to protect the consumer against the dangers from disease infected milk. For practically all the disease germs are destroyed. Furthermore, it makes possible the commercial handling of milk in large cities where it must be brought from different points, and in many cases has been carelessly if not criminally handled. It interferes neither with its digestibility nor palatibility.

Pasteurzed milk posseses a sanitary wholesomeness which is winning its way into the hearts and stomachs of the consuming public.

DEVELOPING DAIRY HEIFERS

An experiment that is expected to prove of inestimable value in the development of the dairy industry is being conducted at the Kansas agricultural college. Its purpose is to determine the feeds that will tend towards the perfect physical development of heifers and the production of a maximum amount of milk at the lowest possible cost.

The tendency on the part of the average dairyman is to breed early and underfeed. On account of this fact the dairy cattle do not attain full size. The best producers of any breed are those which have been fully developed to the breed standard.

The experiment in question was started two years ago. Twenty-four grade Holstein heifers—all related—were fed on skim milk up to six months of age. Since that six heifers have been fed on alfalfa hay and silage and twelve on alfalfa hay, silage and grain.

The heifers are bred to freshen at thirty months, with the exception of those in half the lot, which are fed grain as well as alfalfa hay and silage. These are bred to calve at two years. Professor Reed expects to find out whether or not cows getting the grain will develop sufficiently and give enough extra milk if allowed to calve six months earlier to pay for the extra feed they will receive. The experiment will be continued until the cows are six or seven years old. By that time the department will have records on at least three milking periods.

Two of the heifers have already freshened. One of these, which is fed on alfalfa hay alone, is giving thirty pounds of milk a day and producing it at a low cost. She is eating forty to forty-five pounds of hay a day. The ordinary amount consumed is fifteen to twenty pounds a day. The other heifer that has freshened is fed alfalfa, silage and grain. It is giving thirty pounds of milk, eating twelve pounds of hay, thirty pounds of silage and seven pounds of grain

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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

You can help the spring labor problem by getting the fall work done up in good shape.

Be careful and keep all kind of young livestock growing. To overfeed or underfeed is a back set. The animal that brings the best returns is the one that is kept growing.

You will never regret it if you invest in a feed mill or grain roller for the farm. Some kind of grain mill should be found on every farm. It can be used in preparing feed for all kinds of stock, from poultry to horses.

Now is the time to get together and organize drainage districts, put your land in better shape so that you will be able to produce more with the same amount of labor. It costs just as much to farm a poor producing acre as the one that brings larger returns.

Right now is a good time to select your seed for next year. Some kinds are well worth the hand assorting. Seed will have as much or more influence on increased production next year as any one thing you can do. If you did not grow your own seed of any certain kind begin now to look around where you can find the very best.

KEEPING ACCOUNTS

How many farmers actually know the cost of producing a bushel of wheat, ton of hay, or an acre of beets. We have a good idea as to about how much, but few know the actual cost as given by records they keep.

This is the time of the year when you should plan to take an inventory of all you own and then start with the new year and keep accounts of all you do.

Blank books can be had for a very small amount and one will only have to fill out the pages in order to get at the cost of any crop he may grow.

It will be time well spent, for every one should know the cost of producing any one of the crops they grow.

PAYS TO KEEP WELL POSTED

This is a day of improvements and changes. It pays to keep well posted on machinery, seeds, incubators, cutters, tractors or any thing else that you expect to buy in the future.

You may be considering buying some product, then send your name and address to the manufacturer or dealer and tell them what you are interested in and you will received booklets, interesting and instructive catalogues and information. When you have carefully studied all this information you will be in a much better position to buy, you will be posted. When you write always mention the Utah Farmer it helps us and protects you.

PROTECT YOUR LIVESTOCK

The first storms of winter reminds us of the fact that our livestock should be provided with good protection against storms and the extreme cold weather.

It takes feed to furnish heat for the farm animals. A given number of pounds of feed have to be consumed in generating sufficient heat to keep the animal warm before any can be used for putting on fat. Cold sleeping places, cold drinking water and cold winds all take this heat and mean that more feed must be consumed to replace it.

Plenty of straw for bedding, shelter from biting northern winds and warm water will save many pounds of feed this year, and feed is high. With the straw you have on the farm a shelter may be built very cheaply, and arrangements for heating the drinking water are inexpensive.

THE FARMER WHO READS

In line with the discussion of agricultural extension it is timely to consider the farmer who reads. Off hand one would say that the farmer who reads the best agricultural publications would be the one who would have the least need for the services of a county agent and yet in every county you will find that they are the ones who are most actively supporting the movement. Why?

The most ignorant man in the world is he who does not know enough to know how little he knows. His condition is described by the old, old saying that "there are none so blind as those who will not see." It is equally true that when we begin to study and learn we begin to realize how little we really know. That encourages us to study more so that we may know more. It is entirely natural therefore that the farmer who reads much and wisely is stimulated to seek information in every quarter from which it may be reliably obtained.

THE NEED OF ECONOMY

When we put a million and a half soldiers in the field we withdraw those men from productive enterprises. They do not while they are actually in training or in service produce anything. They do, on the other hand, consume much. There is nothing more expensive on earth than to support and maintain a great army in the field, especially if it is on the fighting line. The attrition of supplies and everything else is tremendously great when we have a fighting army in the field.

America is the one great remaining storehouse in the world of supplies and credit. We must maintain and make effective as possible our own soldiers and the soldiers of those nations who are fighting for us. We must therefore draw as little as possible upon our common store of supplies and money. The more we lessen our domestic demand the more we can contribute to the support and effectiveness of our allied armies.

Economy is now a national duty, such a duty upon the people at home as fighting is upon those Americans who are bravely offering their lives for the honor of America and the preservation of liberty and justice.—Official Bulletin.

CONSERVING FARM MACHINERY

It has always been a poor way for one to leave his machinery and tools unprotected to rust and waste in the storms of the winter. This year the farmers should give more attention than ever to the care of their machinery. All machinery should be repaired during the winter and make it ready for service next spring. The situation also demands that all orders for new equipment and repair parts be placed as soon as possible. It will take much longer to get your orders filled. During the winter find out what parts or extras you need and order them at once even if you do not have them delivered to you until you are ready to use them. Wherever it is possible to repair and put in good working order any machinery by securing a few new parts you ought to do it.

Labor saving machinery must be used to partially replace the farm help that has gone to the front. Factories will be worked to capacity, where they are able to secure help, so the need of ordering early any machines you need for next year is the right thing to do. Decide what you want, take time during the early winter to do it and then place your orders.

You should do every thing possible to conserve and better care for the machinery and implements on your farm.

USE WOOD FOR FUEL

From the daily press we learn of the crying need of coal in the larger cities among the poor. They were not able to store coal and now must suffer because they can not buy it.

An appeal has been made to the people in this inter-mountain country to use wood in order to save coal. President Heber J. Grant a member of the fuel committee has sent out a letter asking the co-operation of the people suggesting that we look over our farms, orchards and shade trees, and see how much dead or fallen timber can be used to replace coal. Every cord of wood used will shorten the war across the water.

Why not go back to the old custom of hauling some wood from the nearby canyons or hills. This is not practical with all but many will be able to do it. We are called upon to do many things now that are a sacrifice of time and labor.

Farmers can help very materially in this matter. While many of them depend solely upon wood for fuel, many more can, with a little effort, find wood supplies near at home. Because of the high coal prices also, it will often be the part of economy to do so. At any rate, by burning wood instead of coal, they will be helping the Nation solve a perplexing difficulty.

The load of wood from the woodlot that is burned in your home this winter will not only keep you warm, but will also release some coal for another family that might suffer without it. The ring of the axe in the farm woodlot will mean less suffering from cold in the tenements. As a duty to our country let's use, as our grandfathers did, the fuel furnished by the farm.

THE AGRICULTURAL COLLEGE

We want to remind all young men who are seeking for a better education that agriculture is the greatest industry of our nation. There has never been a period in the history of the world when greater systematic effort has been put forth for the study and intelligent operation of the soil, the cultivation of crops and the improvement of livestock.

It is the agricultural schools that help make successful farmers. It teaches them the principles which underlie soil management and animal production. It gives them a knowledge of the remedies for animal disease and insect pests and makes them acquainted with the most approved methods of farm operations and farm management.

The important points in connection with every farm are, that it be so handled that its owner shall be master of the labor applied in its operation, rather than a slave to labor; and just as important, is the knowledge of how to produce the largest net profit with the least expenditure of energy upon the farm.

The great problem of the farmer is to utilize land and maintain its productivity and at the same time, by intelligent farm management, secure a maximum return for the labor expended upon this land.

We are proud of the work our Agricultural College is doing and the past record it has made. They should have the good will and support of every citizen in the splendid work they are doing.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending December 10—Livestock market steady. Cattle—receipts, 2,003; market steady throughout week; choice steers, $9 @ $10; good, $8 @ $9; feeders $7 @ $8; choice cows and heifers, $7 @ $7.50; fair to good, $6 @ $7; canners, $4 @ $5; feeder cows, $5@$6; veal calves, $9 @ $10.

Hogs—receipts, 2,186; market, steady; tops, $16.25; bulk of sales, $16.25.

Sheep—receipts, 4,140; market, steady; lambs, $15.00 @ $16; ewes, $9 @ $10.

NORTH SALT LAKE, Dec. 12.—Cattle—Receipts 182; market steady. Choice steers, $9 @ 10; good steers, $8 @9; fair steers, $6@7.50; choice cows and heavy heifers, $6.75@7.50; fair to good cows and heifers, $6@6.50; cutters, $4.75@5.50; canners, $4.25@4.75; grass bulls, $5.75@6.75.

Hogs—Receipts 380; market steady. Choice fat hogs, 175 to 250 lbs. $16.25 @16.50; mixed fat hogs, 160 lbs. and up, $15.75@16.25.

Sheep—Receipts 19; market steady. Grain-fed lambs, $15.50@16; grain-fed yearling wethers, 80 to 95 lbs. $10@11; do heavier, $10@10.50; ewes, $9@10.

Kansas City.

KANSAS CITY, Dec. 12.—Hogs—Receipts, 15,000; lower. Bulk, $17.15@ 17.45; heavy, $17.30@17.65; packers and butchers, $17.15@17.40; light, $16.90 @17.30; pigs, $15.00@16.00.

Cattle—Receipts, 15,000; dull. Prime fed steers, $12.50@15.50; dressed beef steers, $11.50@13.50; western steers, $9.00 @ 12.00; cows, $5.75@10.00; heifers, $6.50@11.00; stockers and feeders, $7.00@11.00; bulls, $6.00@ 8.50; calves, $6.00@12.75.

Sheep—Receipts, 6000; higher. Lambs, $16.50@16.90; yearlings, $12.50 @14.00; wethers, $11.75@13.25; ewes, $1.00@12.25.

WHAT HOOVER SAYS ABOUT PRICES

When in New York City the other day Mr. Hoover gave out a statement as follows:

"If we are going to have general price fixing, we must have power to fix prices all along the line. It is not fair to the farmer—nor for that matter to the retailer—to fix prices at which he must sell, if we do not fix prices at which he can buy.

"This is not solely a food question. If we limit the farmer as to what he must charge for his wheat, we must conrtol the price to him of fertilizer, clothing, machinery and of everything he must buy. It is the same for the retailer. It is a matter of human justice to take the problem all around.

"What is to be done rests with Congress, but I believe that the country is between the two horns of a delemma. Either the prices of commodities must be regulated or we must expect continuous increases in wages, and every time there is an increase in wages there is a decrease of national efficiency, as wage increase are not gained without trouble.

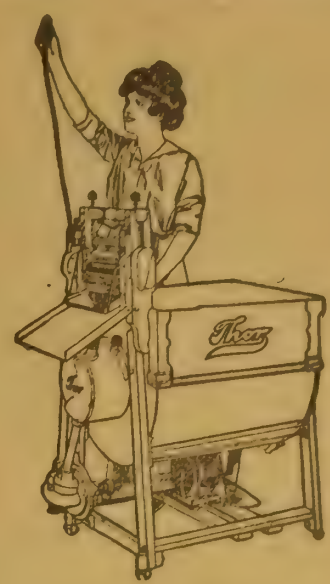
"We must bring the rising cost of living to a stop or have a constantly increasing wage scale. The lesser of these two evils is to bring a stop to the increasing cost of living. We must regulate, at least, the great primary commodities—the frills of life don't matters. That issue has been faced by every European country as the war went on, and I don't see any possible evasion of it here."

TWO RECORD-BREAKING CROPS

That American farmers have responded loyally to the task of feeding a world at war is evident from crop estimates lately announced. The corn crop of 1917, estimated at over 3,210,000,000 bushels, is notable as occupying the largest acreage and as being the largest total crop ever recorded. The yield per acre was, however, not exceptional because of a late spring and cool summer.

The potato crop, estimated at 440,000,000 bushels, is also the largest ever produced and the quality is above average.

Give Something Electrical This Christmas



Solve your Christmas gift problem the Electrical Way. Give presents that have a permanent value—that every day in the year, for years to come, will be a pleasant reminder of your thoughtfulness.

This Christmas the appropriateness of gifts will be measured by their utility. Every Electrical Appliance is useful—it fills a need. Electric Washing Machines, Vacuum Cleaners, Irons, Toasters, Percolators and Grills and other cooking devices, lighten labor in the home and remove much of the drudgery of housekeeping. Other electrical appliances, such as Warming Pads, Curling Irons, Vibrators and Room Heaters, are sources of constant comfort and convenience.

Our Store is An Electrical Store

You will find here a wide variety of gifts from which to choose—each of them useful and helpful—ideal gifts for this war-time Christmas.

The cost of operating Electrical Appliances is so small that it need not be considered. If you desire, you can buy Electrical Gifts at our store by making a small payment down on each article, and we will add the balance to your light bills, a little each month.

Make our store your first stop when you start your Christmas shopping. It will save time and money.

Utah Power & Light Co.

Efficient Public Service

PROTECT YOUR HOGS FROM TUBERCULOSIS

Hog tuberculosis last year sent more than 25,000,000 pounds of hog meat into the condemned tanks of only the federally inspected slaughter houses. This meat, but for the fact that it was infected with germs of tuberculosis, would have been worth more than $2,000,000. Being infected it was valuable only for soap grease or fertilizer. Hog tuberculosis in one year sent 66,000 hog carcasses into the fertilizer tank and it is estimated that annually it causes from one-fourth to one-third of the hogs shipped from certain infected farms to be rejected for food purposes, necessitating their sale at tankage prices.

In badly infected districts many slaughterhouses protect themselves against losses by offering lower prices for all hogs. Because of the prevalence of tuberculosis packers in some sections refuse to accept hog shipments from certain dairy districts except as "subject" shipments, that is subject to examination for tuberculosis after slaughter. The disease, according to the bureau of animal industry, is causing thousands of farmers to turn their good corn, alfalfa, concentrates and skim milk into low-priced soap grease instead of into high-priced pork.

Tuberculosis in hogs is contracted largely from dairy cows, which are extremely subject to the disease. The disease in a cow infect her milk system, lungs and throat with tubercle bacilli. Farmers are therefore cautioned to pasteurize or boil all skim milk before it is fed to the hogs, and to keep their hogs away from cow lots and barns, and to keep dairy drainage out of the hog lots.

Hog raisers throughout the state are urged to join with their neighbors in insisting that the creameries shall pasteurize all skim milk before delivery for hog feeding purposes.

The bureau of animal industry is emphasizing the necessity of quick action on the part of the county agent in co-operating with the government in ridding the swine of the country of tuberculosis, that the production of healthy pork may reach the maximum in 1918.

My Tuesdays are meatless,
My Wednesdays ar wheatless,
I am getting more eatless each day.
My home it is heatless,
My bed it is sheetless,
They're all sent to the Y. M. C. A.
The barrooms are treatless,
My coffee is sweetless,
Each day I get poorer and wiser,
My stockings are feetless,
My trousers are seatless,
My ——, but I do hate the Kaiser

An American

HOME

HOW BARLEY CAN BE USED

Jane Eddington.

Mild and soothing enough for the most enfeebled stomachs, and strength producing enough for those who develop the highest kind of health in the rude and raw climate of Scotland, is the barley. Barley water has long been a famous invalid drink, but it is used by the prize-fighter as well.

And, by the way, it will do no harm to call attention right here to a very simple lesson in eating that common, every day people never take to heart. Just read about what these men eat when preparing for athletic work of any sort. They take only the nourishing foods that are easiest of digestion. This is a recognition of the fact that digestion is work, often made very hard by lack of thought (and lack of exercise in fresh air), and if a man puts a great deal of energy into that work he has less for his hands or his legs or his fists, as may be.

After such a summer as we have had, there must be many a stomach for which must be prepared some lightest nutrient like barley or rice water, perhaps flavored with cinnamon, if flavoring is imperative other than its own good taste. Never, to my mind, should any of the starchy drinks be flavored with lemon juice. This complicates the chemical problem we call digestion, even if the chemical action is not actually unfavorable. And this is not because lemon juice is not very good in itself.

When our stomachs are not strong, one food at a time presents the simplest digestive problem. When it is mixed with the digestive juices, chemical action begins. If we add another element to the mixture, like fruit juices to a starch, we have a triangle that may be as hostile in outcome as the eternal triangle of fiction.

Barley porridge is one of the most nourishing of cooked cereals. Its use often comes as a welcome change from oatmeal and wheat and corn breakfast dishes, especially when the latter are served cold. When it is hot it is palatable enough to be eaten without cream or sugar, and therefore is extra good for those suffering with digestive troubles. This presupposes that it is cooked sufficiently and in the right way. Cold porridge is palatable enough for anybody with cream alone. Sugar on cereals is one of the additions that no dietitian indorses. It is very much like adding soft coal to a hard coal fire.

Though it is the stomach that makes the complaints in dyspepsia, it is really the whole body that is miserable and uneasy. Well prepared barley is not only easy on the stomach, but supplies material for toning up the whole system as well as energy. It is the richest of the cereals in mineral content.

Pearl barley is a most economical food because it will go as far as hominy and many ways of using it are to be found in our cook books. Like hominy, it will take up almost eight times its measure of water, and if cooked with sixteen times its measure it will yield per cup of raw material one quart of porridge and one thick jelly-like liquid for soups and drinks. Dates may be legitimately added to barley, as to any other cereal, and they make sugar unnecessary, as the long cooking also helps to do, but other fruit soups made with a barley water foundation I would now omit from any dietary.

Barley has especial healing qualities, as well as being easy to digest. Some starchy foods, especially if carelessly cooked, irritate the stomach and digestive canal as a whole, in no small measure, just as beans sometimes do. The latter even render the [illegible] and its lining is probably as [illegible] as any part of the tube of which it is the first. Barley is good for those with summer colds in any form, including hay fever, because easy and soothing to mucous membrances, as well as for a long list of what seems like more serious diseases, fevers, bowel troubles of all sorts. It is good for the anemic and convalescent; in short, for any one who needs or wants to get the most benefit for the smallest digestive expenditure.

Barley Porridge.

It is not necessary to add your barely to boiling water, but all the world almost did, and so did I up to two years ago and printed recipes to that effect, to one cup of washed pearl barley in a kettle with a cover which may be clamped down, add eight cups of cold water and bring to a boil slowly, stirring often. When at the boiling point cover and put over the simmering burner to simmer for three hours. It may be necessary to stir it once in a while. One way to make this unnecessary is to wash it as we do rice to remove the superfluous flour, which is what makes it stick on if cooked. It may be cooked in the fireless cooker overnight. Barley porridge warmed up in a double boiler is as good as freshly cooked, if it has been kept carefully. It must be remembered that all starchy foods in a damp condition quickly ferment in summer temperature.

Barley Soups.

There are no end of ways of making barley soups, the economical mutton broth being the best known. One tablespoon of uncooked barley to a quart of liquid is generally enough for thickening a soup. It is more economical to add cooked barley when the broth is partly done, or when the vegetables are added. With water alone and no meat, but a considerable mixture of vegetables, always carrot and onion, a very agreeable mixture may be made and a safe one for general use in a family of various idiosyncrasies.

Scotch Broth.

The following recipe was given me at a famous Dickens' hotel in England: Take the liquor any mutton has been boiled in and remove the fat when cold. Wash a cup of pearl barley and put it on to boil. When done add to the liquor; also a turnip, carrot, onion, and a little celery. Boil until the vegetables are tender and serve." Grated raw carrot on the top of this soup improves the flavor and adds much to the appearance. There was enough of the stock, probably a large kettle full, so that the broth was thin. A single pound of mutton shoulder, the fat and skin removed before it is cooked in two quarts of water, will flavor a barley liquid sufficiently for a delicate soup, but three pounds are often used. To preserve some of the strength of the meat, which may be taken out and used with a gravy or a curry sauce, saute it in hot fat and add boiling water to cook it. Left over barley porridge may be used for thickening a broth.

Barley Candy.

So-called barley candy usually contains no infusion of barley. A real and deliciously soft barley candy, good for children, may be made as follows: Strain one cup of barley water, add to it two cups of sugar, stirring the two together until they boil, being sure that the sugar is thoroughly dissolved. This will spin a long thread before it cooks at all. Cook until this thread will keep its form in cold water, no matter how finely spun. Pour out on a greased plate or into small molds, using small muffintins perhaps. Stick a skewer into one candy muffin and give it to the child right atfer a meal for a sucker—his dessert. Do not give it between meals. You can pull this candy if you choose. It is soft and bland without any flavoring. Do not allow to boil up on sides of pan as it will crystalize.

Tool sheds haven't risen in price nearly so fast as farm machinery.

LITTLE CAKES FOR YULETIDE

Eleanor Record Sigel.

Christmas Rocks.

1 cupful sugar, two-thirds cupful butter, 2 eggs, 1½ cupful flour, 1 lb. English walnuts, 1 teaspoonful soda, 1 lb. raisins, 1 teaspoonful cinnamon, 1 teaspoonful cloves, 1½ teaspoonful hot water, and 1 lb. dates.

Cream the butter and sugar very well. Add eggs, and when well mixed, the flour, which has been sifted with the cinnamon and cloves. Add the walnuts, dates, and raisins, which have all been put through the chopper. The soda, dissolved in the hot water, goes in last. Stir well and drop by half teaspoonfuls on buttered tins and bake in a fairly quick oven. Watch them carefully and, if they begin to burn, lessen the heat of the oven. They are almost as rich as fruit-cake and improve with age. This recipe will make about one hundred cakes.

Bohemian Cookies.

4 cupfuls flour, 1 cupful sugar, 2 cupfuls butter, 1 whole egg, 3 yolks, ½ teaspoonful lemon or vanilla, and almonds.

Put the flour, butter, and sugar on a board and work all together with the hands. When thoroughly mixed, make a hole in the middle of the dough, add the yolks of three eggs and one whole egg; fold dough over lightly until the eggs are thoroughly worked into the mixture; add flavoring. Make dough into a ball, and set in a cool place overnight. In the morning, take small pieces of dough, roll out on a floured board with slightly floured rolling-pin. Cut in fancy shapes with cooky cutter. Brush them with slightly beaten white of egg. Sprinkle some coarse sugar, some with chopped almonds, and have some of them plain. Bake in a quick oven until delicately browned.

Cinnamon Cakes.

½ lb. sugar, 3 eggs, cinnamon, flour, and ¼ lb. butter.

Work butter until foamy, add sugar gradually, then beaten eggs. Mix well, and add enough flour to roll out lightly. Mix the paste with cinnamon until brown and work it all into the dough. Let it stand in a cool place overnight. Roll out in the morning as thin as possible, cut into shapes and brush with yolk of egg; sprinkle half with granulated sugar. Bake in fairly quick oven. These are quite hard, but delicious to nibble over a cup of tea or coffee.

PEANUT COOKIES

Shell, remove skins, and chop one quart of peanuts; there should be one cupful. Mix and sift two cupfuls of flour, one-half teaspoonful of salt and one-half teaspoonful of soda, and add one cupful of brown sugar, then add one-half cupful of melted shortening, one egg, well beaten, one-half cupful sour milk, one teaspoonful of vanilla and three-fourths of the nut meats. Drop from top of spoon on a well buttered sheet and sprinkle with remaining nut meats. Bake in a moderate oven.

Baked Indian Pudding.

A hundred year old recipe for this pudding is like the simplest one of today except that more of ginger and cinnamon was used formerly than we think good or necessary today.

This old recipe reads: "Scald a quart of milk, skimmed milk will do, and stir in seven tablespoons of sifted Indian meal, a teaspoon of salt, teacup of molasses, and a great spoonful of ginger or sifted cinnamon. Bake three or four hours. A smaller pudding may be made with one pint of milk, four tablespons of meal, one-fourth cup of molasses, one-fourth teaspoon of salt, and a little ginger or cinnamon. Sweet apples are nice cooked in this pudding."

This is one of the most palatable and inexpensive desserts.

MOLASSES CAKE WITHOUT EGGS

1 cup of molasses, sorghum preferred, 1 cup of sugar, 1 cup of butter or lard, or ½ cup of each, 1 pint of hot water in which has been dissolved 1 teaspoonful of soda, 1 square of bitter chocolate grated, ½ teaspoon each cinnamon and spice. Beat all thoroughly together, then stir in enough flour to make a stiff batter, pour in greased tins and bake in moderately hot oven until done.

DEVIL'S FOOD CAKE WITHOUT EGGS

Cream 1 cup of sugar with ½ cup of butter, add 2 heaping teaspoons of cocoa and cream well. Put 1 teaspoon soda in a cup and add 1 cup sour milk, pour into creamed sugar and cocoa. Add 2½ cups flour and 1 cup chopped nut meats. Filling: 2 tablespoons cocoa, add enough water to wet it, add 1 cupful of sugar and 1 egg, 1 teaspoon vanilla, stir over fire until well mixed, having beaten egg well before adding.

MARSHMALLOW BREAD PUDDING

Take 4 slices stale bread (buttered), 1 quart milk, 3 eggs, ½ cupful sugar, ¼ teaspoonful salt, 1 teaspoonful vanilla, 1 dozen marshmallows.

Cut bread three-eighths of an inch thick if the loaf is large, one-half inch thick if it is a small loaf. Place buttered bread in a buttered baking dish, buttered side up; over it pour the eggs slightly beaten with the sugar, salt and vanilla and then add the milk. Bake in a moderate oven one hour. Halve the marshmallows and put them on top of the pudding. Return to the oven and bake until the marshmallows are delicately browned. Serve hot with hard sauce or cold with whipped cream. It is very good without any additional sauce.

PEACH TAPIOCA DESSERT.

One-half cupful granulated tapioca, 3 cupfuls boiling water, ½ lemon, juice and rind; ¾ cupful sugar, 6 large peaches, ¼ teaspoonful salt.

Cook together in a double-boiler the tapioca, water and salt until the mix-

"BALL Red Ball BAND"

For the Christmas Tree

Give the "Ball-Band" Rubber Footwear to the men and the women, also the boys and the girls.

It's warm and comfortable, vulcanized by vacuum process to give it extra long wear.

Worn by nine and one-half million people, and sold by 55,000 merchants—nearly every footwear store in the country.

Write for booklet illustrating the different kinds of footwear.

Mishawaka Woolen Mfg. Co.
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ture is very clear. This will take from one-half to three-quarters of an hour. When the tapioca is nearly done, add the peaches, pared and cut into very thin slices. Remove from stove, add sugar and lemon juice. Serve very cold topped with whipped cream, sweetened, and flavored with almond. This recipe will serve six generously.

PINEAPPLE POINTERS

Pineapple is essentially a fruit that appeals in hot weather. It looks cool. It is refreshing and it has remedial principle that are quite worth while. We are told that the juice of ripe pineapple contains a remarkable active digestive principle, similar to pepsin, termed bromelin.

To get the best results from pineapple, pare and remove eyes, tear apart with a silver fork, throwing aside the core. Let the pineapple thus prepared stand on ice for a few hours. Fresh pineapple is preferable, of course, but canned pineapple is very good to use.

A refreshing drink, particularly for an invalid, may be made by pouring half a glass of pineapple juice over crushed ice, filling the glass half full of the ice and then adding more if needed.

An excellent pineapple punch is made by using one large pineapple shredded, the juice of four lemons and six oranges and a pint of strawberry juice or canned cherries. Let all stand one-half hour, sweeten to taste and add enough ice water to make four quarts in all.

Pineapple tapioca is made by mixing one-half cupful of minute tapioca, one-half cupful of sugar and a pinch of salt together and adding slowly to three cupfuls of boiling water. Cook in the double boiler 15 minutes and then pour over two cupfuls of shredded pineapple. Decorate the top of the pudding with any kind of jelly or preserves that you like.

Pineapple ice is refreshing and also is easily made by boiling three-quarters of a cupful of sugar with three cupfuls of water for three or four minutes, then adding two cupfuls grated pineapple, six tablespoonfuls of lemon juice. Cool, strain and freeze. This will serve six persons.

SALAD DRESSING

Peel 3 nice apples and 4 large oranges. Chop fine, adding ½ cup of finely chopped nut meats. Also 1 diced celery stem. Set aside. Now beat 1 egg very light with ½ cup sugar and 4 tablespoonfuls of fresh cream. Place on fire and bring to boil, stirring all the time. Allow it to cool ½ minute, then add to above mixture. This is very savory dish for turkey and dressing.

COUNTY STEW

Clean and unjoint a fat hen as if for frying; put in a large stewpan with plenty of water to cook. Add 1 cup onion and 3 cups Irish potatoes (minced fine), about 1 quart each of corn and tomatoes, either fresh or canned, 3 tablespoons of chili powder, salt to taste, also add butter or strips of fat pork to season. Cook until meat falls from bones. This will make about 2 gallons of stew. Serve with crackers. Beef, squirrel or lean fresh pork can be used in place of chicken.

TAMALE LOAF

Boil ½ pound of beef until tender; take liquor it was boiled in and make a mush with meal. Grind meat fine and season well with chili pepper; into a baking pan put a layer of mush, then a layer of meat. On top have a layer of mush; pour a little water on it, put inside the oven and bake.

PEARL BARLEY SOUP, WITH CABBAGE

Take 2 tablespoonfuls barley, 1½ quarts water, ¼ pound bacon, 1 pound head cabbage, 3 green onions and one cupful top milk.

Soak the barley in the water for six hours. Put the bacon through the food chopper; cut cabbage and onions rather fine and add all three to the boiling barley and water; let simmer gently for one hour. Just before serving add the milk, scalded. Season well with salt and pepper.

MEXICAN VERMICELLI

Wash and put to boil ½ package of vermicelli. In a skillet put 2 tablespoons of butter, slice 2 medium sized onions into the hot butter, add ½ teaspoon black pepper, 1 teaspoon salt. Let fry 5 minutes, then add 1 small can tomatoes, then add the boiled, strained vermicelli and let cook 15 minutes and serve hot.

THE FOOD SITUATION IN FRANCE

By Fred B. Pitney.

The French government is very bureaucratic, but the French people do not like to be overgoverned. They object seriously to anything that savors to them of meddling in a man's private affairs. For this reason it has been extremely difficult to get a workable income tax law in France. The people immediately rose against the proposal to give the government the right to examine their books and find out if they told the truth about their incomes, or find out what their incomes were, if they failed to make a return. So a scheme was figured out for taxing a man on seven times his rent, if he made no income tax return, or one the government thought too low.

Saying how much or what a man shall eat is, also, getting pretty close to private affairs, and therefore, the French government, knowing intimately the people it has to deal with, is slow -s-l-o-w- in coming to such measure, even in face of the only too evident food shortage in the country. There have been efforts at price fixing, but they have not worked satisfactorily, one reason being that they have not been national but local. Paris, for example, has tried fixing the price of butter, but it has been found that the result has been to drive butter away from Paris to localities where it could be sold for what the market would pay.

National Price Fixing to be Tried

A scheme of national price fixing is to be tried now with beans and potatoes. Both of these crops are far below the requirements of the country. I have seen many days when potatoes could not be bought in Paris, and it was a common thing last winter to have to run half over the city to find a market where green vegetables could be bought. The national price fixing scheme for beans and potatoes will divide the country into districts and fix the price for each district, with a penalty for sending either commodity out of the district without permission.

So far, meat has withstood all efforts to control its consumption—there has been no attempt to control its price—and yet it is vitally necessary either to control the consumption of meat in France or to increase the supply. Otherwise, the end of the war will see the country so reduced in its herds that it will take many years to bring them back again to the point where France will be once more self-sustaining.

Supply Must be Increased.

Of course, the thing to do is to increase the supply. When a country has had its bread stuffs cut down to the extent to which France has suffered, the people naturally fall back on meat. One might think they would fall back on vegetables, but the same reasons that have deprived them of grains have deprived them of vegetables. There have not been the hands to cultivate the ground. They could no more raise vegetabels than wheat. And they have fallen back on beef, mutton and pork. The herds existed and they have been eaten up. The people had to have something to eat.

To what extent the herds have disappeared is shown by the cutting down of the meat ration of the soldiers at the front. At the beginning of the war they were allowed one pound of meat a day. Twenty per cent has now been cut from that allowance. And I will point out again that only dire necessity will countenance reducing the food allowance of soldiers at the front.

Meat Shortage Serious.

Civilians, naturally, were the first to suffer, when meat became scarce. The price went soaring. Retail prices to consumers doubled and trebled. The poor out down in quantity, one understands, and the very poor went without entirely. But those who could pay could have meat, if they were willing to give the price.

The time came, however, when there had to be an attempt to control the consumption. The army requires 36,000 tons of meat a month, or 432,000 tons a year. France's herds suffered enormously at the very beginning of the war. A total of approximately 2,500,000 cattle, sheep and hogs from the French herds were seized by Germany in the invaded provinces. Coming immediately on top of this loss France found herself compelled to find food for some millions of Belgian and French refugees. This had to be done at once and the herds remaining had to be slaughtered without stopping to ask questions about the future. One does not say to a starving man, "What will I do to-morrow, if I give you this crust of bread today?"

England, therefore, undertook to supply France with 250,000 tons of meat a year, and this supply was kept up at the rate of about 20,000 tons a month until February of this year. At that time the English supply stopped. England was having then all she could do to feed her own people on reduced rations.

Thus, since Feburary, France has had to supply from her own resources 432,000 tons of meat a year to her armies. 1,428,000 tons for the civilian population and another 350,000 tons for refugees, making a total of 2,000,000 tons of meat a year demanded by France.

Herds Depleted.

What are the herds she has to do this with? At the beginning of 1914 her cattle herds comprised 14,787,710 head; sheep 16,131,390 and hogs 7,035,850. By the end of 1914, after five months of war, her cattle were reduced to 12,668,243, her sheep to 14,038,361 and hogs to 5,925,291. Today her cattle herds are cut down more than twenty per cent, while her sheep number no more than 10,000,000 and her hogs 4,000,000—a loss of nearly fifty per cent of her hogs and three-eighths of her sheep on top of the loss of twenty per cent of her cattle.

Cattle feed is short in France and the cattle are poor and under weight. More of them have to be killed in proportion to supply the needed quantity of meat. Milk cows have been killed and the shortage of proper feed has reduced both the quantity and quality of milk. Why, I have seen the time when it has been next to impossible to get milk for my little baby in Paris. I have gone from store to store, begging some one to sell me as little as two cents worth of milk for my baby.

Crying Need For Meat.

The government is trying to conserve the meat supply and save the herds now, by limiting the use of meat to one meal a day. The endeavor is made to accomplish this purpose by forbidding the sale of meat after 1 p. m. and ordering the butcher shops closed at that hour, while hotels and restaurants can serve meat only with the noonday meal. But this measure has had little effect on the use of meat as it serves only against the restaurants. Housekeepers can buy all the meat they want before 1 o'clock, and they do it, as there is no restriction in the amount that can be bought. Moreover, in the restaurants one can eat all the meat one wants at midday, and thus make up for having none at night, and, this, also, is the practice.

There is only one real solution of the problem. France must have more meat. Her herds are disappearing rapidly. They are today far below the danger point. Soon they will have to be reconstituted entirely. Meat, meat, meat and again meat is a pressing need for France.

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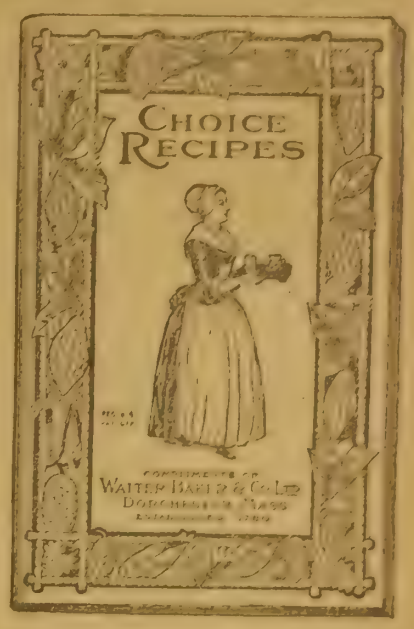

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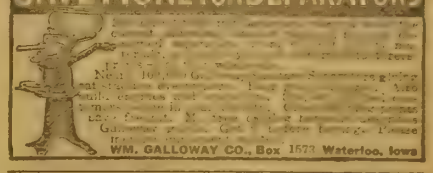

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Some of you may feel that you are poor—that you do not have all you need to make you happy. This leads me to tell something: While you may need some things to complete your happiness, think how much better situated you are than were thousands of children in this country fifty or sixty years ago.

I remember of living from 200 to 2000 miles from any railroad during much of my childhood. I never had a day's schooling. I was a man before I ever saw a Sunday school.

I never saw but few toys for children—and never owned but one. It was a top! What a pleasure it was until a coyote carried it off and lost it in the grass!

In those old days sports and amusements were almost unknown. Life was a stern reality. Our parents were kind, but they had always lived amidst hardships and dangers, and had reached the state of mind that regarded it sinful to do anything in an easy way if a hard way could be thought of! Let us rejoice that we live in better days! Children, live and enjoy! Don't complain if you need something. Help father, mother and all the family to be happy. [illegible] thankful that you did not live on the frontier fifty years ago!—M. R.

LIVE STOCK

PORK PRODUCTION FO 1918

Department of Agriculture Ask States to Increase Swine 5 to 50 Per Cent—Big Corn Crop Will Help.

The United States Department of Agriculture urges every farmer to do his personal share toward increasing pork production in 1918 by 15 per cent throughout the United States. The department first makes an exhibit of the slaughtering in 1916 and 1917 as follows:

The Swine Situation.

Slaughter of hogs under Federal inspection for fiscal years ending June 30:

1916	40,483,000
1917	40,211,000
Decrease	272,000

It is quite accurately estimated that the slaughter of hogs under Federal inspection represents 60 per cent of the total slaughter of the United States. On this basis we therefore find the following estimate for the total slaughter of the country for the two fiscal years in question:

1916	67,470,000
1917	67,020,000
Decrease	450,000

It should be pointed out that the actual decrease in the amount of pork produced is greater than the figures above would indicate. The hogs slaughtered during the fiscal year 1917 were lighter in weight than those marketed in the previous year. Further indication of the decrease in swine production is found in the report of the Bureau of Crop Estimates of the United States Department of Agriculture for stock hogs on farms September 1, as follows:

1916	65,645,000
1917	60,218,000
Decrease	5,427,000

Supply of Feedstuffs.

So much for the situation in regard to hog stocks. The increase in cereal production in the United States in 1917 is very much above the year 1916. The estimate of the corn crop on November 1 by the United States Department of Agriculture was 3,191,083,000 bushels; the December estimate of the 1916 crop by the same authority was 2,583,241,000 bushels. The five-year average for the year 1911-1915 was 2,754,164,000 bushels. The increase of the 1917 year over that of 1916 based on the November estimate is 607,842,000 bushels. The increase in 1917 over the five-year average is 436,919,000 bushels.

The Department of Agriculture estimates an excess of 20 per cent of the corn crop to be soft. This soft corn must be fed to livestock. However, in view of the heavy southern crop (which is in unusually good condition) and the fact that most of the corn crop is always fed to livestock, it is safe to say that there will still be an abundance of corn of a marketable quality to meet the usual market demands and insure reasonable prices for corn for feeders who must purchase grain. The following brief survey of the grain increase in the country should be considered:

Cereals—Increase 1917 Over 1916.

	Million bushels
Corn	500 to 607
Oats	329
Barley	21
Rye	9
Total	859 to 966
Wheat shortage (compared with full crop)	300
Net increase	559 to 666

The very extensive campaign now in progress to replace as much wheat as possible with corn should be encouraged in every possible way.

The corn production of the country is above 30 bushels per capita. The normal wheat consumption is about 5.3 bushels per capita. It is apparent that if it were possible to replace the entire wheat consumption in the United States with corn or other grains, there still would remain a very large grain surplus. If we even assume the wheat shortage to be 300,000,000 bushels and subtract the entire amount from the minimum grain increase indicated above, we still should have a net grain increase of 556,000,000 bushels as a minimum, with the possibility that this amount will be over 600,000,000.

The Grain Situation.

Stocks of old corn on farms November 1 are estimated at 34,745,000 bushels (1.3 per cent of the 1916 crop), compared with 87,908,000 bushels on hand a year ago and an average for five years of 100,523,000 bushels. Charge of this shortage against the 1917 crop and we still have a huge surplus, thus:

	Million bushels
1917 grain surplus (minimum)	859
Less assumed wheat shortage	300
Less difference in stocks of corn on farms	53
Net grain surplus	506
Or, less difference in hold-over corn, five-year average basis	493

It should be noted that the above calculations are based on an increase of 500,000,000 bushels in the 1917 corn crop over 1916. The Government estimate for November shows an increase of over 607,000,000 bushels. This estimate is very close to the actual yield. As a matter of fact, therefore, the December estimates will probably show an increase in the cereals available for feed of more than 950,000,000 bushels over 1916. The duty of American farmers to themselves and to the nation is clear. Livestock production, especially hog raising, must be increased.

Livestock Makes the Corn Crop Marketable.

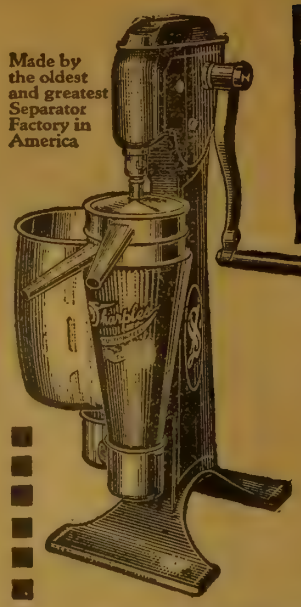
Of a normal crop, 75 to 80 per cent is fed. When the crop is greatly increased above normal, a still greater proportion must be fed in order to make the remainder marketable at a profit. If there should be a serious shortage of hogs in the country in 1918, there will be more corn on hand than the market can absorb. The increase in the 1917 corn crop over that of 1916 is nearly 24 per cent. The demands on the country for domestic consumption and for export require an increase of 15 per cent in pork production in 1918.

Increases in Pork Production, by States.

The following statement shows the requirements of each State which is asked to increase swine production next year:

Allotments by States to increase pork production 15 per cent in 1918 in the United States.

State	Increase for 1918 per cent.	Interpretation: Where a farmer bred 20 sows in the fall of 1916, he should breed in the fall of 1917—
Missouri	50	30
Alabama	30	26
Kansas	25	25
Iowa	25	25
Illinois	20	24
Indiana	20	24
Nebraska	20	24
Arkansas	20	24
Mississippi	20	24
Ohio	15	23
Kentucky	15	23



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Tennessee	15	23
South Carolina	15	23
South Dakota	10	22
Maryland	10	22
North Carolina	10	22
West Virginia	5	21

Farmers who do not breed as many as 20 sows can readily calculate the amount of increase which they should make in order to "do their bit." For example, if a farmer bred 4 sows in the fall of 1916 and breeds 5 in the fall of 1917, . contributes at the rate of a 25 per cent increase. If he bred 10 sows in 1916 and breeds 11 in 1917, he shares in a 10 per cent increase. If he bred only 2 sows in 1916 and breeds 3 in 1917, he contributes exactly his quota if he lives in Missouri.

Use of Gilts.

The supply of breeding sows is undoubtedly short this fall. The breeding ranks will have to be filled to a considerable extent with gilts from the feed lots. These gilts will not produce quite so large litters as mature sows may be expected to produce. Therefore, farmers using gilts should breed slightly above the prescribed quotas in order to insure the requisite increase in spring pigs.

Attention should be given to the fact that this program has been carefully worked out accoruing to the known requirements for 1918. If it is met in every detail, these requirements will be fulfilled. If the farmer breeders of the various States do not reach the quotas set forth for them, a more acute shortage of pork products will result than now prevails, extremely high prices for hams, bacon, and lard will prevail and only a few will benefit, the consumer suffering from extremely high prices and a shortage of necessary animal fats. On the other hand, if the program is carried out, a market is provided for about one-third of the 1917 corn crop, the demands on the country for prok products can be met without strain, prices to the producer will be remunerative, and those paid by the consumer should be reasonable. The country banker will indorse a systematic, business-like plan such as is herein outlined.

The Food Administration already has announced that prices of hogs will be kept at a point which will assure remunerative returns to producers so far as it has power to do so through its purchases for the Government and for the allies.

MAINTAINING HEALTH IN SWINE

Hogs feed with their noses to the earth and are filthy when they are compelled to be so. They appreciate clean quarters and pens. On our farm all the pens yards and surroundings are kept clean by the use of disinfectants and fresh air slaked lime. The manure as it accumulates is hauled out and spread on the land.

While this is not a sure guarantee against disease it is an excellent preventive. Some hogs are kept in a tight building well banked up with windows and doors that can be closed shutting out all cold air. A dozen fat hogs in a tight room will raise the temperature to a degree that will make their sudden dash out into the outer air dangerous. Fresh air is not to be excluded but all drafts ought to be.

Another danger in a hog house is from dust. Dust in a sleeping place cannot fail to get into the bronchial tubes, and lungs causing coughing and irritation. For this reason it is necessary to supply goo: clean bedding and change it frequently or whenever it becomes filled with dust.

In a well constructed hog house comparatively little bedding is required. In a floorless house the dust problem may become a serious one. The ground will become hard and dry and the hoofs of the animals will grind the earth into dust which becomes mixed with the bedding material. If the house is on a well drained spot the dust can be swept out when occasion demands but this continued for a time will make the floor of the house lower than the surrounding surface of the yard and the water will settle therein. This must be guarded against and I know of no better way of doing it than to make a good wooden floor and keep it bedded with straw or similar material.

We keep charcoal in reach of our hogs at all times during the winter. Free use of it is a good way to rid hogs of worms and inasmuch as it has no medicinal properties the effect must be purely mechanical.

Hogs have insatiable appeties—especially when being given such feeds as corn—for burnt corn cobs, slack coal, and charcoal, in every possible form. All this indicates that these meet some requirement of the animal system. What is palatable seldom does the system any injury and then only when taken in excess, which it is likely to be if the animlas are not accustomed to it, especially if they are hungry.

The very fact that hogs when on full feed of fat making food eat all forms of charcoal with avidity and never get too much of it is sufficient grounds for providing it in abundance and keeping it within reach at all times.

Charcoal can be made conveniently by digging a pit about two or three feet wide and as many feet deep, starting a fire in the bottom, filling up the pit with corn cobs, and, when they are thoroughly charred, covering the pit over and smothering the fire. Then if some salt is mixed with this corn cob charcoal and put where the hogs can have free access to it their requirements both in the way of salt and charcoal will be met. This mixture will help a great deal in maintaining the animals in good health.—W. H. Underwood.

TURN THE BIG CROPS INTO MEAT

Production of Feed only Half of Agriculture's War Task, Federal Specialists Point Out. The Feedstuffs Supply.

Cereal Increases of 1917 over 1916.

Corn increased by	607,842,000 bu
Oats increased by	328,722,000 bu.
Barley increased by	20,732,000 bu.
Rye increased by	8,661,000 bu.
Total increases	965,957,000 bu.

Will the largely increased feed crops be consumed and turned into food? Will farmers breed sows now for a pig crop next spring large enough to take care of the hogs' share of the big 1917 corn yield. Can cattle raisers take their share of the feed harvest, especially the soft corn?

With the first season of production in the war emergency showing marked increases in feedstuffs, Federal officials of the Department of Agriculture are wondering if the other half of Agriculture's obligation—converting the feeds into meat and other food products—can be met. Upon the consumption of the 1917 feed crops depends the success of growing greater crops next year, it is pointed out. Farmers are not likely to carry out proposed crop increases in 1918 if large surpluses of the 1917 harvest remain unfed in their bins.

Livestock make the corn crop marketable. Of the normal crop 75 to 80 per cent is fed to stock. When the yield is greatly above normal a still greater proportion must be fed in order to make the remainder marketable at a profit.

The Department of Agriculture estimates that 20 per cent of the corn crop will be soft. This soft corn can only be used for livestock. The increase in cattle feeding in the corn belt can be depended upon largely to take care of the soft corn situation in the States which are called upon for an increase in pork production. It is safe to say, department officials believe, in view of the heavy southern corn crop, which is in unusually good condition, and the fact that most of the corn crop always is fed to livestock, that there will still be an abundance of corn of a marketable quality to meet the usual market demands and insure reasonable prices for corn to feeders who must purchase grain.

Department officials who have just returned from conferences and campaign trips for more livestock believe the farmers of the country will rise to the present emergency. At the same time they realize that extra efforts must be made by all the livestock producers—beef and mutton producers as well as hog growers. Definite campaigns to promote increases in all livestock, particularly to urge the breeding of more sows at this time, are being carried on throughout the country by Federal and State workers.

DON'T COMPETE WITH UNCLE SAM

"Don't enter into competition with Uncle Sam" is a valuable bit of advise offered by Dr. F. S. Harris, Director of the Utah Experiment Station. Every time we buy a suit of clothes that we don't need, every time we purchase an extra pair of shoes, every time we get any unnecessary article, we are competing with the government. The reason is plain. Every bit of labor that is used to make something for you that you don't need is just so much labor taken from useful production that Uncle Sam needs. Every bit of material you buy for which you have no immediate use is just so much material taken from our soldiers who need it now.

Buy only for your present needs. Don't keep an extra pair of shoes in your shoe box when some soldier is likely without. It is not only patriotism but economy to wear your old suit a few weeks longer. Don't compete with Uncle Sam.

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RAISE MORE CHICKENS
$600,000,000 Worth of Poultry Products Could Be Added to Our Food Supply Next Year.

The poultry products of the United States could be doubled within a year if everybody in a position to help did their part, and $600,000,000 worth of food would be added to our supply.

This includes both meat for the table and eggs. Very few farmers practice a systematic plan of disposing of their fowls after they have ceased to be productive, although it is well known that fowls of the heavier breeds, such as the Plymouth Rocks, cease to produce a profitable number of eggs at the end of their second laying year, and that this holds true of the lighter breeds, such as the Leghorns, at the end of their third laying year. Consequently, if efforts were made to dispose of all females when their best laying days were over, a large quantity of poultry meat would be placed on the market. All poorly developed chickens should likewise be culled out and used as meat. This way of disposing of unprofitable fowls would allow the farmer to feed his grain to younger and more productive fowls.

Another practice that should be adopted more widely is that of fattening all chickens that are to be marketed before they leave the farm. This can be done easily by confining the birds for a week or 10 days and feeding them a good fattening ration. They will come to market then in better condition and the farmer will receive a profit for their added weight.

The greater production of turkeys, ducks, geese, and guineas, all of which can be profitably raised and a ready market found in most sections, would increase the supply of poultry meat considerably. The production of ducks especially should be emphasized at this time, because of the rapidity with which they grow. Ducks of most of the meat breeds, properly fed and managed, frequently weigh from 5 to 6 pounds of 10 weeks of age. It is estimated by poultrymen making a specialty of growing ducks that the feed cost per pound of producing duck meat ranges from 8 cents to 12 cents, depending upon the current prices of grain and other feeds.

The number of marketable eggs can be increased by following a few practical suggestions. Among the most important of these are the production of the infertile egg after the breeding season is over, and the proper handling of eggs by the farmer before sending them to market. The infertile egg is obtained when all male birds are removed from the flock. This does not decrease the number of eggs produced, but it does increase greatly their keeping qualities. The production of the infertile egg and the proper handling and marketing of eggs by the producer would increase tremendously the number of marketable eggs each year by diminishing the quantity that are rendered unfit for food.

An increased production of ducks' eggs is advisable where available markets are found.

The poultry house should be clean and sanitary and the fowls free from insect pests, thereby preventing disease and mortality. It is estimated that nearly $9,000,000 worth of poultry is lost each year through disease alone. Special attention should be given to the feeding and housing of laying fowls at seasons of the year when their natural source of food supply is cut off.

LAYING HENS NEED GRIT

Ground feeds are necessary for most efficient digestion in poultry. Hopper feeding saves labor and furnishes the necessary supplementary feed at all times. There is no danger of poultry over-eating on ground feeds fed dry in a hopper.

Limestone grit or oyster shell is also necessary for laying hens. A laying hen requires large quantities of shell-making material. Nearly all of this must come from the grit and shell she eats. It is poor economy not to keep a liberal supply accessible. One extra egg a year will pay the bill. It returns the money invested a hundred fold.

Chickens raised on range can be produced much more economically than those kept closely confined around the farm buildings. Not only is less feed required, but the danger from disease is reduced. The edge of the corn field makes an ideal poultry range. Chickens grow best on plowed ground and the corn furnishes shade, which is essential during the summer. Under such conditions, a pound of chicken can be produced from three to four pounds of grain.

POULTRY HOUSE WHITEWASH

A whitewash that disinfects, kills mites, and brightens the poultry house is made as follows: Slack 5 quarts of rock lime with hot water to about the consistency of cream. To this, add 1 pint of crude carbolic acid or zenoleum, and 1 quart of kerosene. Stir thoroughly, and dilute with twice its own volume of water. Apply with either spray pump or whitewash brush. When properly prepared, this solution serves three purposes: The zenoleum acts as a disinfectant, killing the germs; the kerosene penetrates the wood, destroying the mites; and the lime whitens the walls, making the building sweet and light.

RATION FOR ONE HEN COSTS $2 A YEAR

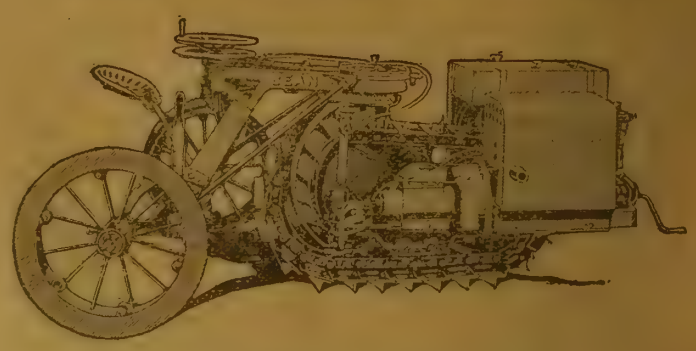
The question before all poultry raisers is how to feed their chickens more economically and yet get satisfactory results. In making changes in rations, one must remember that any quick or marked changes will have a bad effect on the hen. Changes should be made gradually. It takes a month for a hen to respond to a new method of feeding and if this new method can be adopted gradually no ill effects are likely to follow. Frequently a new ration is criticised, when the fault is not with the ration but with the feeder in making the sudden change. The Missouri College of Agriculture recommends corn, 2 parts and wheat, 1 part for scratch food. This constitutes two-thirds of the ration. A mash consisting of equal parts by weight of bran, shorts, corn meal and beef scrap is recommended for the rest of the ration. At present prices for corn and wheat, the scratch food mentioned will cost $4 a hundred. At present prices for mash constituents—bran $1.60, shorts $2.60, corn meal $4, and beef scrap $4—the mash would cost $3 a hundred.

If a hen requires 70 pounds of feed per year, 50 pounds scratch food and 20 pounds mash, the cost for grain and mash would be $2 and $0.60 respectively. Thus the total food cost per hen per year would be $2.60.

By introducing oats into the ration, the cost can be reduced. With oats at 2 cents a pound, a scratch food of one-half oats can be made which will cost 3 cents a pound. This will reduce the cost of the scratch food 50 cents a year for each hen. The mash can also be reduced in cost by substituting middlings for the corn meal. It is doubtful whether wheat should be used for poultry feeding. The by-products, such as bran, and shorts are still available at comparatively reasonable prices. By careful figuring, the cost of feed per hen need not be over $2 a year. If a hen lays ten dozen eggs, the feed cost of a dozen eggs need not be more than 20 cents.

There's no law against eating turkey before and after Thanksgiving, as well as on the national holiday. The more poultry Americans eat at home the more red meat we can spare the boys in France and our Allies.

Make two blade of grass grow where one grew before



TrackPULL Tractor

Here are some reasons why you should buy a Bean TrackPULL Tractor:

1. Pulls instead of pushes itself over the ground.
2. Can be "gee-ed" and "haw-ed" out of holes and soft places like a team.
3. Has full-power pull on turns as well as on the straight-away.
4. Turns clear around in a 10-foot circle (5-foot radius).
5. Plows or harrows as close up in the corners of fields as a team.
6. Plows as close to vines and trees as a team.
7. Makes little difference how far off center you hitch.
8. Goes under branches of trees that no team can get under.
9. Runs stationary machinery up to 10 H. P. when not plowing.
10. Weighs less and costs less to run than wheel-type tractors of same ability.
11. Pays for itself in what it saves.
12. Light weight on long track surface.
13. Cultivates 10 to 15 acres in 10 hours.
14. Plows from 4 to 7 acres in 10 hours.
15. Little power required to pull tractor—power all goes to pull.

A post card will bring full description, price and terms.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

WILL THE TRACTOR MAKE EACH FARM FEED FOUR FAMILIES?

Alfred Jones.

A century ago, nine-tenths of the people were engaged in the occupation of farming. In those days only a small surplus over the needs of one family was produced on each farm. In fact, crude farming methods made it impossible to produce much more.

But today with fully two-thirds of the population engaged in other pursuits, each farm must produce enough to support three families in America and war conditions now make it necessary to export great volumes of food stuffs, so that in reality each farm must now support four families.

What has been the result? Prices of food stuffs have soared beyond figures ever before known. The demand has been so far beyond the supply that a problem has presented itself to the people of America as serious as it is difficult to solve.

What is the answer? Can you doubt that the tractor will solve the problem? Isn't it logical that the tractor—a power plant that will permit turning two or three furrows where before you only turned one—a power plant that will travel across the field twice as fast as a team; that will do the work of several horses and several men—do it better, easier and faster. Can you doubt when you consider these facts that the tractor will solve this world problem?

Many will say they still doubt because thousands of farmers have never yet seen a tractor which was practical to operate on the small farm. Most tractors they have seen and read about were designed for big ranches and thousand-acre farms. Therefore, the vast majority of farms, averaging in the neighborhood of 100 acres, would still be without tractors.

In spite of this general feeling that only the large farmer can profitably use the tractor, the writer wants to most emphatically state that tractors will be offered to the owners of small farms which will be so ideally adapted to use on small acreage that no farm, however, small, will be without one.

When the owner of a small farm can eliminate the expense of keeping horses by purchasing a tractor, which eats only when it works, he will want that tractor.

He will want it because it will do his work so quick and easy, because it will save the hardships which old farming methods worked on both man and beast; and because the old ways in all farm work have never been so profitable as the new ways have been.

In short, farmers will turn to the tractor because it will bring as big a step forward in farming as the reaper and other modern farm implements brought a few years ago.

PAT SCORED.

An Irishman once met an Englishman with an artificial leg. Being of a sympathetic nature, Pat inquired the cause of the loss of the limb, whereupon the Englishman said:

"A short time ago I discovered that there was some Irish blood in my body and that it had settled in my left leg, so I had it cut off."

"Sure, 'tis a pity it hadn't settled in your head," was the quick retort.

A RULE OF THE ROAD

"You are fined for assult and battery," said the police justice.

"But judge," insisted the motorist, "I didn't mean to run the man down."

"But you were driving on the left side of the road. Don't you know the law requires you to keep to the right"

"Yes, judge, but I'm left-handed."

Snap Shots In The Feed Lot

Written for the Utah Farmer by J. C. Wheelon.

With oats, barley, wheat and corn selling at prices beyond the hope of using them in the feeding of cattle, hogs sheep or horses that are being wintered over for breeding or working purposes it becomes of vital interest to compare all our feeds with each other in the amount of Protein and Fat they contain along with the actual feeding value as compared with each other. This can be done by selecting some well known feed that we know possesses first class feeding qualities and at the same time is stableized on the market.

Wheat bran is a good example for this purpose and the following table gives the approximate feeding value of several common feeds when their combined protein plus fat totals are compared with wheat bran ton for ton, thus giving a graphic illustration of their values as feeds to be compared by the farmer, to the prevailing market prices.

COMPARATIVE VALUE OF FEEDS IN PROTEIN PLUS FAT WITH WHEAT BRAN @ $34.00 PER TON:

Tons	Protein Lbs.	Fat Lbs.		Total Lbs.		Is worth $ per ton
Wheat Bran	242.00	57.40	=	299.40	=	34.00
Alfalfa Hay	211.60	27.60	=	239.20	=	27.00
Straw Oat	31.60	14.80	=	46.40	=	5.30
Wild Hay	84.40	26.60	=	110.00	=	12.65
Beet Syrup	160.00	60.00	=	220.00	=	25.30
Beet Pulp	16.00	5.00	=	21.00	=	2.42
Barley (Whole)	173.80	32.00	=	205.80	=	23.67
Corn (Shelled)	158.40	85.60	=	244.00	=	28.06
Cotton Seed Meal	740.00	251.60	=	991.60	=	114.00
Corn (Ensilage)	24.00	10.00	=	34.60	=	4.00
Oats (Whole)	185.00	83.60	=	268.60	=	30.89

$34.00 a ton is about the price bran can be purchased at the mills early in the fall and before the winter feeding begins and the feeder who expects to use it should lay it in early.

A careful study of the above table tells us that we cannot judge the feeding value of a feed by its market price, and right here lies the secret of economical feeding of animals. Oats, barley and corn have become so popular as feeds that their market prices have gone away beyond their actual economic value; this is partly because of a lack of knowledge of their real comparative value and partly because they are clean, easily handled and are most readily obtainable on the market.

We learn that alfalfa hay at $15.00 per ton is one of the most economical feeds we have that is produced on our lands. While the grains at present prices of $45.00 to $55.00 per ton are out of the question except for those who are finishing fine beef or fitting stock for the show ring. On the other hand cotton seed meal at the present price of $50.00 to $60.00 per ton is the cheapest of all concentrated feeds.

"CONCERNING THIEVES"

W. E. Meyer.

There are thieves and then there are more thieves—a new variety, but old in years, has been discovered; namely the butterfat thief. We submit below a synopsis of a report compiled by W. A. McKerrow of Minnesota.

"Forty-four farmers in 9 Minnesota cow-testing associations keep a "butterfat thief" in their dairy. No farmer should have a separator that wastes butterfat. During July, 170 farmers in 9 of the same associations had their cream separators tested. The report shows that a large quantity of valuable butterfat is lost on Minnesota dairy farms. Butterfat in July was worth from $800 to $900 a ton. One farmer with ten cows was losing $1.45 a day from his butterfat-thief separator, and 43 other farmers smaller amounts. To do efficient work, a separator should skim milk so that there would not be more than .005 to .03 pounds of butterfat in a hundred pounds of milk. Of the 170 tested separators on the farms in the various parts of the state, 126, or 78 percent were skimming clean, although more than one of every five machines tested was wasting valuable butterfat.

126 machines tested O. K.
28 machines tested, fairly poor, average test .06.
16 machines tested, very, average test .29.
1 machine tested, no good, average test 1.10.

Are there any "butterfat thieves" in your association?

IS UTAH'S ALLEGED WATER SHORTAGE REAL?

(Continued from page 1)

nearly 300,000 acres have been rendered non-productive, either partially or wholly, due to canal losses or over-irrigation, indicates that the public has grave questions to settle in this connection.

Those most interested in the future of Utah's irrigation were highly pleased by the enactment of the last legislature creating a water rights commission especially to study these problems, and they are looking forward with very much interest to the report and recommendations that the commission will make.

It is no doubt clear that the future welfare of irrigation is dependent on continuous, careful study of these questions with a view to the design of irrigation laws and customs best suited to the present and future needs of the community. It is undoubtedly not only desirable, but also within the power of Utah irrigators to create conditions that will tremendously increase the efficiency of our present water supply which will, when used in the most efficient manner possible, irrigate only one-fifth of the State's agricultural land. In spite of this fact, however, laws and customs which will stimulate and assist irrigators to store the flood waters; to line leaky canals; to properly smooth and grade their lands; to use large streams on porous soils; and to limit single irrigations and seasonal amounts to beneficial use; these will contribute very much to the extending of the time of a real water shortage to many years in the future and will convince irrigators of the next few years that Utah's alleged water shortage is not real.

TOMATO AND GINGER CONSERVE

Pare and slice four pounds of ripe tomatoes. Let them stand until the water has run from the fruit. Add three ounces of preserved ginger cut into fine pieces and the juice of one lemon with the grated peel, grated well into the white inner skin. Cook the mixture until it begins to thicken, and add four pounds of granulated sugar. Continue boiling the mass until it is very thick, stirring it continually to keep it from burning. Pour it into glasses, and when cool, cover the glasses with paraffin.

EGGLESS ICING

One cup powdered sugar, one tablespoon butter, two tablespoons cream or milk, flavoring. Beat together until thick, sugar, cream or milk, butter and flavoring. This makes an excellent filling as well and may be varied by adding chopped nuts. If you wish chocolate icing add two tablespoons of cocoa to the sugar and use two tablespoons of coffee instead of cream or milk.

WHY THICK GLASSES BREAK EASILY

Thin glasses do not crack so easily as thick glasses when you pour hot water into them. This is because the heat penetrates the thin glass so quickly as to heat all parts of it equally, and they hold together in the expansion which occurs. When hot water is poured into a thick glass the particles forming the inside of the glass begin to expand before the heat has penetrated to the outside of the glass, and in the effort to expand the inside particles of the glass break away from the particles of the outer side, thereby causing the crack.

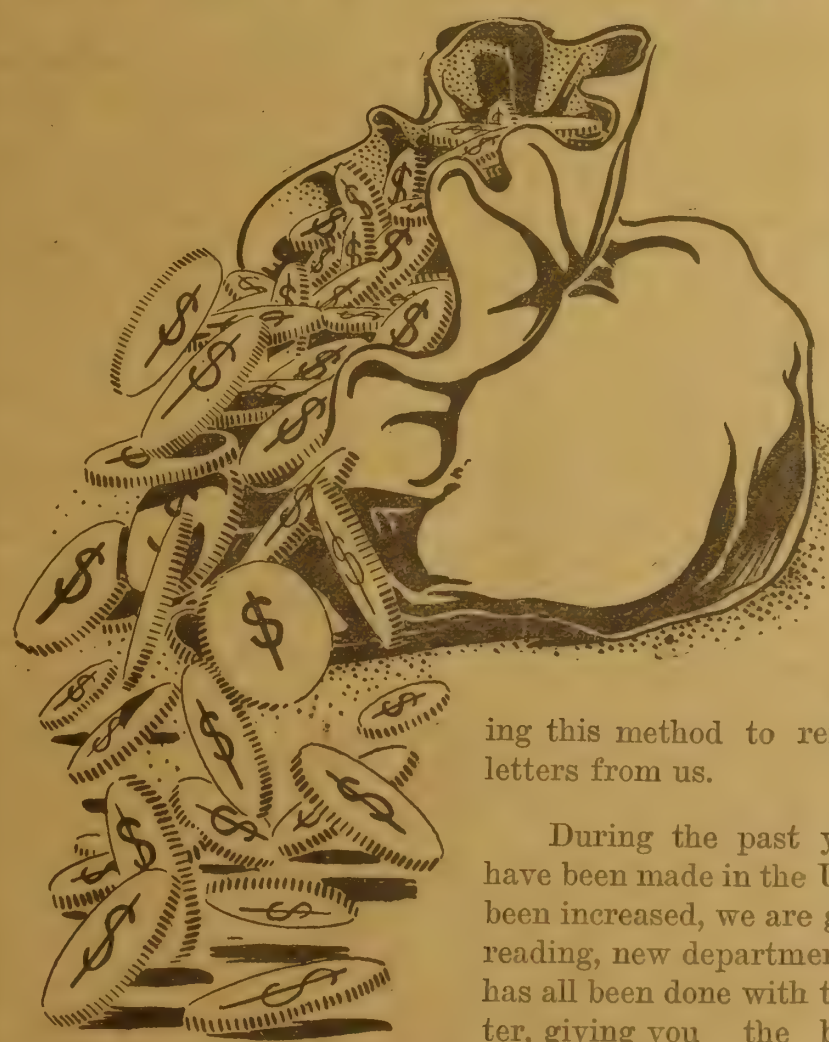
The sugar that goes to waste in the bottom of American teacups would help to sweeten the life of many a French home.

COMMON SENSE BOBS

SOLD EXCLUSIVELY BY

CONSOLIDATED WAGON & MACHINE CO.

Did You Get Your Money?



This is the time of the year when crops are being marketed and turned into money. The farmer is "paying up" because he has sold his crops.

At this time of the year many of our subscriptions are due. It is renewal time. A number of our readers have received letters telling them all about their account.

This is the day of conservation and we are using this method to remind those who received letters from us.

During the past year many improvements have been made in the Utah Farmer. The size has been increased, we are giving you more and better reading, new departments have been added. This has all been done with the idea of serving you better, giving you the biggest dollars worth of practical local help you can possibly get.

"A hint to the wise is sufficient." Send your renewal today to our office at Lehi.

Those Present at Beet Topper Demonstration

On November 28th another demonstration was held at Lehi of the Devey beet toppers. Some small changes had been made and were successfully tried out.

The ground was partly covered with snow and the topper had things in general against it as far as condition of ground and beets where concerned, still it did good work.

It was the general opinion of those present at each of these demonstrations that the topper would do as good a work as the average hand topping.

With a machinical topper assured for next season's harvesting, it will be a big help to increase the beet acreage next year. Many farmers had decided to cut down their acreage for 1918 but when they saw the topper work they changed their mind and said they would grow as many beets for 1918 as they did for 1917.

Just what the cost is going to be is yet to be determined. Bids are being asked of the largest manufacturers and will soon be given out.

Farmers came from many parts to see the demonstration. We have been asked to publish the names of those who attended these demonstrations so that their neighbors would know who was there and could ask the farmers themselves who saw the machine working, just what they thought of it. Here are the names as they were gathered on the ground. A number got away before their names and addresses was secured.

Merrill Nibley, Salt Lake City; J. H. Richie, West Jordan; Sam King, Cresent; P. T. Bateman, West Jordan; Rueben Gardner, West Jordan; Hugh Nelson, West Jordan; Robert Gardner, West Jordan; J. E. Burgen, Cresent; Robert Diamond, West Jordan; R. W. Palmer, West Jordan; R. B. Gardner, West Jordan; W. E. Egbert, West Jordan; Jos. Hibbard, West Jordan; Jos. Goates, Lehi; George Austin, Lehi; Jas. M. Kirkham, Lehi; Storrs Bros., American Fork, Scott Taylor, Lake View; Clifford Austin, Provo; Victor Anderson, Vineyard; Frank Holdaway, Vineyard; S. J. Green & Son, Pleasant Grove; S. H. Kirk, Pleasant Grove; Jas. Goates, Lehi; John Bradshaw, Lehi; W. J. Taylor, Provo; Spencer Madsen, Lake View; Arthur J. Harding, Heber City; J. H. Allen, Vineyard; Whitney Snider, Vineyard; Spencer Madsen, Provo; Delbert Walker, Pleasant Grove; Herman Green, Pleasant Grove; Abel Beck, Spanish Fork; R. T. Green, Spanish Fork; Lew Miller, Spanish Fork; John E. Lewis, Payson; T. W. Wilson, Jr., Payson; J. J. Daniels, Payson; John T. Wignall, Payson; Wm. H. Reese, Payson; J. R. Butler, Payson; Francom Bros., Payson; Wm. Wignall, Payson; Isaac Hansen, Payson; Moroni Jensen, Elsinore; Geo. S. Taples, Moroni; Delbert Burgess, Salina; L. P. Hansen, Richfield; Dan Peterson, Richfield; Peter Lundgren, Monroe; F. R. Gould, Monroe; M. M. Whiteside, Layton; Geo. W. Layton, Layton; John H. Layton, Layton; Richard Scoffield, Layton; Jos. E. Ellison, Layton; David E. Layton, Layton; S. L. Miller, Tremonton; Jas. Bigler, Riverside; Bishop Jensen, Corinne; Rasmus Hansen, Bear River City; Vernon Rhodes, Garland; Geo. H. Smith, Blackfoot, Idaho; Francis T. Halverson, Blackfoot, Idaho; W. C. Solenberger, Blackfoot, Idaho; John E. Kelley, Shelley, Idaho; Wilford Christensen, Goshen, Idaho; John Dick, Shelley, Idaho; Heber C. Austin, Idaho Falls, Idaho; T. W. Davis, Idaho Falls, Idaho; John W. Hart, Menan, Idaho; Hugh Hall, Annis, Idaho; Alfred A. Green, Lewisville, Idaho; Ole Hansen, Menan, Idaho; Leonard Ball, Idaho Falls, Idaho; W. W. Sleck, Lewisville, Idaho; P. B. Green, Lewisville, Idaho; T. C. Shippler, Menan, Idaho; Parley Hamilton, Sugar City, Idaho; Peter Taylor, Reburg, Idaho; Heber Harrison, Lehi; Thomas Kirkham, Lehi; S. L. Wells, Lehi; T. D. Atwood, Pleasant Grove, Michael Brown, Lehi; West Hutchings, Springville, Joseph S. Wheeler, Springville; Bruce Roylance, Springville! James I. Dewey, Box Elder County; Iseral Hunsacker, Honeyville; W. S. Mackey, Taylorsville, Bernard Christensen, American Fork; J. P. Holmgren, Bear River City; O. E. McCellean, Payson; Mark Austin, Rexburg Idaho; James W. Jones, Salt Lake City; W. A. Star, Nephi; L. J. Riter, Salt Lake City; John Lant, Payson; A. J. Devey, Alpine; W. W. Taylor, Lake View; A. J. Johnson, Lake View; G. H. Williams, Provo; Samuel Green, Pleasant Green; J. C. Wheelon, Garland; Otto Franpton, Pleasant Grove; J. H. Ward, Riverside; Arch Gardner, Lehi; O. P. Huish, Payson; R. A. Hanson, Spanish Fork; F. D. Proctor, Spanish Fork; J. H. Snell, Spanish Fork; A. D. Stubbs, Provo; J. D. Child, Springville; J. W. Alliman, Springville; F. L. Mendenhall, Springville; T. L. Mendenhall, Springville; A. G. Rose, Provo; H. W. Clayson, Lake Shore; Frank Birch, Lake Shore; C. M. Bird, Mapleton; P. H. Hurst, Payson; Dave Huish, Payson; John Done, Payson; John Cowan, Payson; J. W. Johnson, Mapleton; W. V. Jones, Lake Shore; Parley Austin, Lehi; W. W. Goodridge, Provo; Geo. H. Watts, West Jordon; James E. Clay, Murray; A. E. Bushman, Lehi; Darrol Schow, Lehi; Harvey Oakey, Lehi; A. F. Gaisford, Lehi; Joseph Quinney, Logan; John Barton, Ogden; John Devey, Sr., Lehi; Frank Devey, Lehi; Hyrum Smith, Lehi; Mickel Kearney, Lehi; Edward Street, Lehi; John Austin, Lehi; George Francom, Payson; J. A. Francom, Payson; J. C. McClellan, Payson.

WILL THE FARM TRACTOR WIN THE WAR?

Alfred Jones.

It is entirely possible that the winning of the great war may yet hinge upon the ability of the American farmer to greatly increase crop production. We must not only feed our own people at home, but our non-productive armies in the field and at the same time provide an enormous surplus to sustain our allies.

In this emergency the Farm Tractor comes like a God-send to the nation. The suecessful development of the Farm Tractor seems to have been providentially timed to meet the crying need for more help and more power on the farm; so the American Farm Tractor may yet win this war—not alone as armored tanks crawling across shell craters, cutting through barb wire entaglements and dealing deadly broadsides at the enemy, but here on our American farms turning two or three furrows where only one was turned before cultivating two acres where only one was cultivated before, and harvesting the yield of the fields on time and with a great saving of hand labor.

It is time every American farmer awoke to the possibilities and efficiency of the improved tractors of today. Don't make the mistake of disparaging all tractors because some have failed to do what was expected of them—don't judge the light, one-man, all purpose tractors of today with the clumsy, heavy, pioneer machines that were adapted only to long stretches of level acres in the Northwest grain belt.

The tractor of today is a proven success on thousands of farms. There is not alone one type, but several—all of which do good work and some one of which is exactly suited to your needs. A tractor that is light, easy to handle, economical to operate and low in first cost.

Write for different tractor catalogs. Study the maker's claims for each. Note the advantages each would have when applied to your own farm problems. But our recommendation to every farmer is to investigate farm tractors—NOW. War or no war—power farming is here to stay and the most successful farmer of the future will be the one who like the successful manufacturer installs the latest and most efficient machinery. And the most vital of all machines in these days of scarcity of hired help and increase of power requirements is the light Farm Tractor.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. They are now at work preparing the land.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

THREE METHODS FOR WEED DESTRUCTION

R. K. Bonnett.

Plowing, rotation of crops, and buying of clean seed are three methods for the control of weeds.

Plowing the ground in the fall and subjecting the roots of perennial weeds to freezing aids in their control. Most perennial weeds, such as Johnson grass, quack grass, and Canada thistle, will be killed by exposing to freezing and thawing during the winter months, supplemented by cultivation the following season.

Johnson grass is a pest in certain sections, and should be eradicated as soon as found. It can be successfully exterminated by fall plowing and replowing in the spring, followed by cultivation whenever any new shoots have appeared above the surface.

The annual weeds, such as lamb's quarter, foxtail, and pigweed, are controlled somewhat more easily. They may be eradicated by fall plowing and by crop rotation.

All seed should be tested for purity and germination before planting. If the farmer cannot do this himself, he should send the seed to his state experiment station to be tested. It will often save a serious infestation of weeds or a failure to obtain a stand. It is particularly important that legume seeds be tested because of their size and shape and the tendency for low germination due to their hard seed coats. Dodder and buckhorn are especially likely to be present in such commercial seeds.

It is generally the best policy to buy high priced seeds for they are more likely to be pure and clean. Many farmers make the mistake of buying a cheap grade of seed. Their fields are likely to become infested with many troublesome weeds. Always obtain a sample of seed before purchasing in large quantities and see that it is tested.

FRANCE'S NEED

Falling production of wheat in France gives considerable insight into her distressing food needs. Her production of wheat is said to have been 146,383,330 bushels in 1913; 128,216,660 bushels in 1914; 101,050,000 bushels in 1915; 97,350,000 bushels in 1916, and only 66,500,000 bushels in 1917.

In all foodstuffs, comprising cereals, potatoes and beet roots, her production has decreased from 35,800,000,000, pounds in 1913 to but 22,200,000,000 pounds this year.

Plowing kills wireworms by destroying their food supply and interfering with their preparations for winter.

Christmas candy that requires little or no sugar is a gift to our Allies as well as to the receiver.

RELIABLE FARM BARGAINS

We received a communication from a gentleman living in Ohio of a farm he owns in the Bear River valley right near the town of Tremonton. This farm has two homes, one first-class home and one home that is not so good, a small orchard. A pipe line passes through this property for the town of Tremonton and it would be accessible for use on this farm, in fact the corner of this land joins right up to the corner of the town. This farm contains 70 acres and is under a high state of cultivation. It has been farmed by a first-class farmer for a good many years. This property lies on the corner of two county roads. It is a very desirable place for a home. This property can be had for $175 per acre, payment down, and fifteen years on the balance at 5 per cent interest. If you are looking for one of the best farms in the Bear River valley on easy terms, that will pay for itself in a few crops, this will appeal to you.

Two miles west on Tremonton on the main county road we have 185 acres, all under a high state of cultivation, good eight-room house, hot water heat, full cement basement, fine granary, blacksmith shop, machine sheds, barns and other outbuildings; small orchard on the farm, beautiful row of trees surrounding this place. It is one of the oldest and best farms in that district. It is owned by a man living out of the valley who is desirous of disposing of it immediately at a sacrifice price. The farm is worth $175 per acre, but he will consider any legitimate offer. If you are looking for a good farm under good condition this will appeal to you. This property has about 100 acres in alfalfa, the balance in sugar beets and grain this year. We would consider an exchange on some first-class Salt Lake or Provo property on this farm.

We have several forty-acre farms without improvements for $15, $120 and $140 per acre, depending on the location and the condition of the soil.

We have several nice farms for sale in Cache valley, one farm containing 110 acres, under cultivation, good water right, immediately under the canal, right near the railway station, all level and in fine shape, for $110 per acre. We have another farm containing 160 acres, 61 acres of irrigated lands and the balance in pasture land. We are holding this land for $100 for the irrigated land and $10 per acre for the pasture land.

In Cache valley we have one of the best farms and ranches in that part of the state, containing 224 acres The machinery and improvements consist of good house, barns and numerous outbuildings, all kinds of machinery, plows, harrows, grain drills, threshing machine and hay tools. There is also twenty-five head of first-class cattle, twelve head of good horses, and all equipments to go with this place. This is one mile from high schol, near one of the bests towns in Cache valley. The farm has been in good hands for fifty years. The price of this land is $85.50 per acre.

We have just received on our listings a farm consisting of 60 acres of land located in the center of the Bear River valley. This farm is in a high state of cultivation, being planted to sugar beets, alfalfa and grain. There is a five-rom house, barn and other outbuildings. One team of horses, plow, wagon and harrow that would pass with sale of the place. This property practically adjoins land that we have sold at $200 an acre. Land adjoining this is now renting at $20 per acre, cash rent. There are some very nice homes adjacent to this land. The party owning this property is very desirous of selling and for that reason is offering the place at the price of $135 per acre on reasonable terms. If you are looking for a farm it would pay you to investigate this before purchasing elsewhere.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street
Salt Lake City, Utah.
Phone Was. 963.
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COTTONSEED CAKE

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The best and cheapest food

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We offer, subject to very liberal terms, the best used cars in America. The standard values of the automobile world. We refer directly to the Oldsmobile and Buick cars.

We have these cars, in stock, ready for immediate delivery, newly painted, in first-class mechanical condition. Exceptional values—many of the cars offered have run less than 5,000 miles.

Write us stating your car requirements, Department F.

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Automobile Row
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Distributors — Buicks, Oldsmobiles, National cars. G. M. C. trucks.

30 DIFFERENT MAGAZINES. Late issues. Value $3.00. Yours for 25c prepaid Eastern Bureau, New Egypt, N. J.

FOR SALE
"VICTOR'S DEFENDER"
2nd Prize Junior Champion boar
at Utah and Idaho State Fairs
1917.

A wonderful hog for 16 months old, with good bone, high back, and a whale for his age. Is in the way of my "Defenders" sows.

Also a few choice young "Defender" boars for sale. Orders placed now for spring pigs.

V. R. FISHER
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FOR SALE $750

Buick six, 7 pass. newly painted and new top. Tires good, one spare tire, tube, and rim; thoroughly overhauled.

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2269 McClelland Ave.
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BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER
Buhl Idaho

FOR SALE

15 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH
Buhl Idaho

FOR SALE
Purebred Holstein-Friesian Bull
Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndike 8th the $25,000 bull.
RULON STRAT, Spring City, Utah.

PLOWING

Christian Science Monitor.

Up and down the world today, in many widely separated countries, people are taking a more than wonted interest in a very ancient occupation, namely, plowing. In England, Scotland, and Ireland, specially, almost anywhere one chooses to go, from Land's End to John o'Groats, or from Cape Clear to Malin Head, one is sure to see the long, freshly-turned furrows, glistening, maybe, in the sun, and perhaps the plowman with his team, moving slowly back and forth, followed and circled about with the usual phalanx of rooks.

It is an ancient and honorable calling, that of plowman, and finds mention in the literature of the world from the very earliest times. Like most such callings, it changed but little in all the ages until it came to the present age, and in the present age even, the ancient methods and the ancient plows are to be found in common use in many countries. The Spaniard, for the most part, like the Indian of India, or the Burmese of Burma, or the Chinese of China, prefers the plow made of wood. It was the wooden plow, of course, which was used in prehistoric days in Egypt.

The description of a plow to be found in Hesiod's Works and Days and in Virgil's Georgics shows little development, up to their time, in what is, perhaps, the oldest of agricultural implements. Indeed, until Small of Berwickshire, towards the close of the eighteenth century, brought out a plow in which beam and handle were of wrought iron and the moldboard of cast iron, there was little change. Since then even, in spite of many revolutionary alterations, in spite of American steam plows or tractors turning their 12 or 14 furrows at once, the fundamental idea remains the same as it was 2,000 years ago, and for untold centuries before that time.

Then, as is almost inevitable, with a thing so ancient, many customs and traditions have grown up round the plow and plowing, many wise sayings, parables, and proverbs, such as the long furrow, the straight furrow, the lonely furrow, the man who puts his hand to the plow and keeps straight on to the headland, the man who looks back, and the man who plows the sand. Amongst customs, in England, there is still, for instance, Plow Monday, held at "Twelfth tide," when the work of plowing is supposed to begin for the year:

Plow Monday next, after Twelfth tide is past.

Bids out with the plow, the worst husband is last. True it is passing away, like so many old customs, but not so many years ago it was common enough, and bands of young men in many districts, "profusely ornamented with scarves and ribbons," would drag a wooden plow from village to village dancing, whilst "Bess," a man dressed as a woman, "rattled her money-box." And over and over again, in a shrill monotone, would be heard the refrain:

Remember us poor plowboys,
A-plowing we must go;
Hail, rain, blow, or snow,
A-plowing we must go.

BEAN PRICES

In California they have grown many hundred tons of beans and now they are trying to sell them at a price that will bring the producer a profit.

The growers held a meeting with Ralph Merritt, California Food Administrator. In their meeting they showed the cost of production per acre ranging from $26.95 to $80 and the yield from 300 pounds to 2,000 pounds per acre. The average cost is between $40 and $45 per acre and the average yield a little less than 1,000 pounds to the acre.

It was the sense of the meeting that the price of beans be 8c for pinks and 11c for whites, based on an average cost of $40 per acre and allowing a 4 per cent waste.

The person who wastes food during war time is helping the enemy.

WAYS TO USE COTTAGE CHEESE

(Continued from page 5)

til it is stiff enough to form into a roll. Brown in the oven, basting occasionally with butter or other fat, and water.

Cottage Cheese and Nut Roast.

1 cupful of cottage cheese.
1 cupful of chopped English walnuts.
1 cupful of bread crumbs.
2 tablespoonfuls of chopped onion.
1 tablespoonful of butter.
Juice of half a lemon.
Salt and pepper.

Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients and moisten with the water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

Cheese Sauce.

(For use with eggs, milk toast, or other dishes.)

One cupful of milk, 1 tablespoonful of cottage cheese, 2 tablespoonfuls of flour, salt and pepper to taste.

Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted.

This sauce may be used in preparing creamed eggs or for ordinary milk toast. The quantity of cheese in the recipe may be increased, making a sauce suitable for using with macaroni or rice.

Cottage Cheese—An Inexpensive Meat Substitute.

Cottage cheese is one of the important meat substitutes. It contains a larger percentage of protein (the chief material for body building) than most meats and furnishes this material at a lower cost. In every pound of cottage cheese there is about one-fifth of a pound of protein, nearly all of which is digestible. Meats, on the other hand, usually contain less protein and besides have a certain waste, such as bone and other inedible material. A pound of cottage cheese daily would supply all the protein required by the ordinary adult engaged in a sedentary occupation.

The following table shows that cottage cheese is much cheaper than most meats in furnishing protein for the diet.

For supplying protein, one pound of cottage cheese equals:

1.27 pounds sirloin steak.
1.09 pounds round steak.
1.37 pounds chuck rib beef.
1.52 pounds fowl.
1.46 pounds fresh ham.
1.44 pounds smoked ham.
1.58 pounds loin pork chop.
1.31 pounds hind leg of lamb.
1.37 pounds breast of veal.

In addition to protein, energy for performing body work must be furnished by food. As a source of energy also, cottage cheese is cheaper than most meats at present prices. The following table shows the comparison when energy is considered.

On the basis of energy supplied, one pound of cottage cheese equals:

8 1-3 ounces sirloin steak.
11¼ ounces round steak.
11¼ ounces chuck rib beef.
10¾ ounces fowl.
5½ ounces fresh ham.
5 ounces smoked ham.
6 ounces loin pork chop.
12¾ ounces breast of veal.

HIGH THINKING

It is unfortunate that all grocers are not so candid as the marketman in Hays who advertises "Food for Thought." That's about all the customer gets for a dollar in any grocery this year.

Modern warfare consists of united, co-ordinated effort on the part of entire nations. If the present war teaches Americans to co-operate it will not have been entirely wasteful.

LUMBER-POSTS
SHINGLES
Write for prices
G. R. KIRK COMPANY
Box 1138-X, Tacoma, Wash.

Richard's Durocs Won

14 out of 16 First at Idaho State Fair. 19 First at Utah State Fair.

YOUNG STOCK FOR SALE

Richard Live Stock Co.

Virginia, Idaho.
"Home of the Champion Durocs"

DUROC JERSEY'S

I have a few good Duroc Jersey fall pigs, sired by the Champion Richard's Defender and Pathfinder, out of my big type, prolific sows.

Priced very reasonable and guaranteed to please. Write me.

ERIH W. OLSEN
Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS
Provo Utah

KESKO FARM

Ranches at Ephraim, Utah, and Lonetree, Wyoming.
Registered HEREFORD CATTLE for Sale—40 Bulls and 75 Heifers

also

100 Grade Yearlings and 2 year old Steers and Heifers. To those who know us, we need no introduction; to others we desire to make your acquaintance. See these animals before buying elsewhere.

SEEDS WANTED

We buy Alfalfa, Red Clover, Sweet Clover, and other Field Seeds. Send us your samples for bids.

Mailing bags for samples sent fr .

THE MANGELSDORF SEED CO.
Atchison, Kansas.

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN
Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

When you answer an advertisement always mention the Utah Farmer.

EDISON'S LIFE-LIKE PHONOGRAPH

THE *NEW* DIAMOND

AMBEROLA

Model 50, Edison Diamond Amberola

Don't miss this opportunity! We have made special arrangements with the Edison Laboratories, and have secured the personal consent of Thomas A. Edison, the master inventor, to offer you the use of one of Mr. Edison's 1918 Model New Diamond Amberolas and any twelve of the famous Edison Records in your home ON FREE TRIAL for a period of three days. The reproducer of the New Diamond Amberola is the genuine Edison Diamond-Point reproducer. The records we offer are the famous Edison Blue Amberol Records that are almost unwearable and unbreakable.

Don't hesitate one moment to mail the coupon at the bottom of this page and find out all about the

ABSOLUTELY FREE TRIAL OFFER

which permits you to have Thomas A. Edison's marvelous invention, the New Diamond Amberola, on trial in your home without costing you one cent or obligating you in any way.

Once you have Mr. Edison's wonderful Diamond Amberola in your home you will never let it go out again, so real, so life-like are its reproductions. It is hard to believe that an invention can be so nearly human. When you come in from the fields or home from town all tuckered out, and when the evening meal has been cleared away, you go into the sitting room and put a record on the Amberola. At the first note of Anna Case singing "Annie Laurie," Albert Spalding playing "My Old Kentucky Home," or any other favorite melody, you settle down in your favorite chair for an evening of the keenest enjoyment. No need to go outside for entertainment—you can have your fill right under your own roof and it won't make any difference to you whether it is as cold as Greenland or whether there is a blizzard raging outside. You run the whole show to suit yourself. Why longer deny yourself this delightful, inexpensive entertainment and recreation?

HOW TO GET THE AMBEROLA ON *FREE TRIAL*

Look over the list of dealers below, and pick out the name of the one nearest you. Fill out the coupon and mail it to him. He will send you the beautiful Amberola booklet, "A Master Product of a Master Mind," and the Blue Amberol Record Catalog, from which you may select the instrument you prefer and any twelve records for FREE TRIAL. If, after you have tried them, you feel that the enjoyment the Amberola gives you is worth more than the small amount you would have to part with to keep it, you may remit in cash or arrange convenient terms with the dealer. If, for any reason whatever, you do not care to keep the Amberola and records, simply notify the dealer, who will cheerfully take them back. You risk nothing, you do not obligate yourself in any way. RESOLVE NOW that you will not turn this page before you have filled out the coupon.

You'll want the beautiful booklet, "A Master Product of a Master Mind," anyhow. It is FREE. Just ask for it.

If you will write the nearest Edison dealer *at once*, it may not be too late to have an Amberola in your home for Christmas. As a Christmas gift that will be appreciated by the entire family, the New Edison Diamond Amberola is ideal because there is hardly a person who does not like some kind of music.

Music You Can Have with the Amberola

Here are a few selections taken at random from the Edison Blue Amberol Record Catalog. They will give you an idea of what a treasure-house of music you will have to draw on when you get your Amberola.

ACCORDION
Amoureuse Waltz
Carnival of Venice—Variations
Italian Army March
My Sweetheart Waltz

BAND
American Eagle March
Aida March
Coronation March—Prophete
Father of Victory March
Gems of Scotland
Invitation to the Waltz
Jolly Fellows' Waltz
Loin du Bal
March Religioso
Medley of War Songs
Messenger Boy March
Sextet—Lucia di Lammermoor

CONCERTINA
The Butterfly
Catch Me If You Can, Dance
Merry Widow Waltz

CORNET
Bride of the Waves
Come Sing to Me
A Dream
Nightingale Song
The Rosary

FLUTE
Hear Me, Norma—Norma
Long, Long Ago

HARRY LAUDER
I Love a Lassie
Just a Wee Deoch and Doris
Roamin' in the Gloamin'
She's My Daisy

MARIMBA BAND
Blue Danube Waltz
Garden Dance
Messenger Boy March
Sari Waltz

INSTRUMENTAL MEDLEYS
Hawaiian Hula Medley
Medley of Southern Plantation Songs
Money Musk Medley—Virginia Reel
Selections from Red Mill
When it's Apple Blossom Time in Normandy Medley—Turkey Trot

INSTRUMENTAL QUARTETS
Dream of the Tyrolienne (Herd Girl's Dream)
Flower Song
Hearts and Flowers
Serenade

OLD TIME SONGS
Carry Me Back to Old Virginny
Just Before the Battle Mother
Killarney
Lost Chord
Love's Old Sweet Song

ORCHESTRA
Destiny Waltz
Every Little Movement—Madame Sherry
In the Shadows
Last Waltz

OVERTURES
Morning, Noon and Night in Vienna Overture
Orpheus Overture
Ruy Blas Overture
Beautiful Galatea Overture
Light Cavalry Overture
Overture Oberon
Poet and Peasant Overture
Rienzi Overture

PATRIOTIC
Battle Cry of Freedom
Star Spangled Banner
Where Do We Go From Here?
It's a Long Way to Berlin, but We'll Get There
We're Going Over
Over There
Laddie Boy
Send Me Away With a Smile
Good-Bye Broadway, Hello France!
I May Be Gone For a Long, Long Time
U. S. Army Bugle Calls—No. 2
Good-Bye, Good Luck, God Bless You Medley—Waltz
U. S. Army Bugle Calls—Part 1

PICCOLO
Nightingale
Through the Air
Will o' The Wisp—Polka

SACRED
Abide With Me
Beyond the Smiling and the Weeping
Crossing the Bar
Dreams of Galilee
Glory Song
I Love to Tell the Story
Jesus, Lover of My Soul
Lead Kindly Light
Nearer My God to Thee
One Sweetly Solemn Thought
Shall We Gather at the River?
Tell Mother I'll Be There
What a Friend We Have in Jesus
Where is My Wandering Boy To-Night?

VOCAL QUARTETS
Bridal Chorus—Lohengrin
Down on the Mississippi
Moonlight Bay
Little Cotton Dolly
In the Golden Afterwhile
Moonlight on the Lake

VOCAL DUETS
Dancing Down in Dixie Land
Ever of Thee I'm Fondly Dreaming
Grandfather's Clock
Juanita (Old Spanish Melody)
Love's Melody
Me and Mandy Lee

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NEVADA
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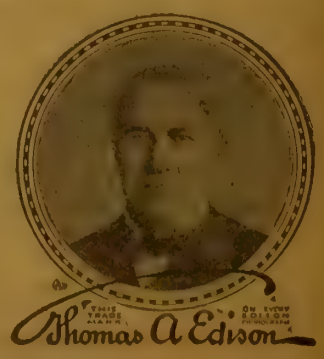
ELY—Ira J. McKnight



WRITE YOUR NAME AND ADDRESS IN MARGIN BELOW AND MAIL COUPON TO NEAREST EDISON DEALER

Please send me the Amberola Book and particulars about your FREE TRIAL offer on Edison Amberolas

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 21 LEHI AND SALT LAKE CITY, UTAH. DECEMBER, 22, 1917

Why Not Have a "Bean Day" Each Week?

Mrs. Frank V. Schofield.

A PATCH OF BEANS THAT WILL BRING THE OWNER GOOD RETURNS.

WE have produced this year a great many more beans than ever before. There does not seem to be a ready market for them.

We have had meatless and wheatless days urged upon us but few if any have suggested that we have a day each week set apart to eat certain foods.

Beans, as we know, are meat equivalents, why not use them and save the meat for export.

True the price is a great deal higher than it was a year or two ago, they have advanced in price with other food, even at present prices, beans are still cheaper and give more nourishment of the same kind than animal proteins.

Beans are now selling at prices considerably less than at the beginning of the year, the large crop gives us a good supply.

There are many kinds of beans their food value is about the same, all are high in protein and starch, as one has expressed it, "the bean is meat and potatoes combined."

The concentration of nutrients is shown in the dried bean, which contains 22.5 per cent protein. Ten cents spent for dried beans will obtain from two to three times as much protein as if spent for meat at an average price. Another thing in favor of the bean is that a variety in the kind of protein supplied to the body is desirable in a proper diet. If other protein foods were substituted in part for meat in the average dietary, it is thought that conditions would be more favorable to health.

History of the Bean.

Beans have been used as human food since early times. Beans were cultivated by the Egyptians, Greek and Romans. They were introduced as a food into Europe in the middle ages. The American Indians have used them for generations according to best reports obtainable.

As housekeepers come to appreciate the food value of beans and the varied ways of using them, this vegetable will appear on American tables many a meatless day. Beans and peas are "hearty foods." They should take the place of meat, and appear in combination with starchy vegetables and fresh salads. For instance an excellen menu for a meatless day is beans, baked potatoes, slaw, cornbread and, for dessert, stewed fruit. In the recipes given below use any available variety of beans or peas.

Baked Beans

1 pint navy beans, 4 pints cold water, ½ teaspoonful soda, 1 teaspoonful mustard, salt, ¼ pound salt pork, 1 tablespoonful minced onion. 2 tablespoonfuls molasses, ¼ teaspoonful paprika, 2 tablespoonfuls tomato sauce.

Wash the beans and soak them overnight in the cold water, to which the soda has been added. Cook them in the same water in which they have been soaked, adding more if necessary, for about thirty minutes, or un-

(Continued on page 8)

MEATS, SWEETS AND WHEAT

Three most important things needed by us and our allies

Earn More Money During 1918

The farmer making the most money is the one

who is reading---keeping up with the times.

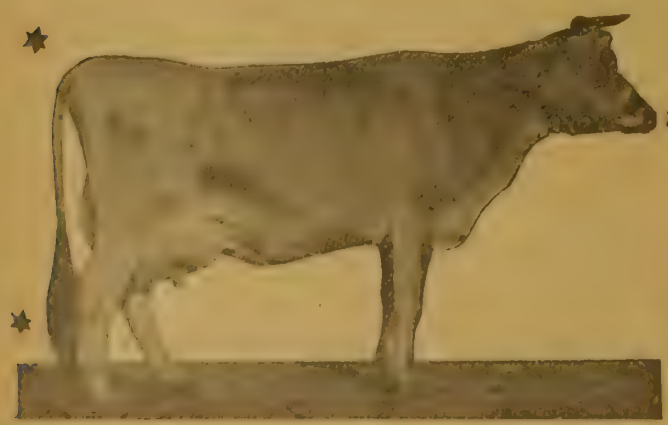
The Utah Farmer during the coming year will publish hundreds of articles on general farming written expressly to meet local conditions

THE UTAH FARMER IS A SAFE PAPER TO HAVE IN YOUR HOME, THE ADVERTISING COLUMNS ARE AS CLOSELY GUARDED AS THE READING COLUMNS. NO LIQUOR, STOCK SELLING, MEDICAL OR OTHER OBJECTIONAL ADVERTISING IS ADMITTED.

A Splendid Help for Your Farming Work

Never before in the history of farm life will help be so scarce as next year. You will want to be posted on all modern machinery, helpful suggestions and labor saving ideas.

Being in close touch with the farmers of this state we plan to help them during the coming year earn more money than they did this year and to help increase our food stuff so that we can do our part in winning the war for the freedom and liberty of the world.



The Utah Farmer is the one big paper that will help you. Now is the time to send in your payments and renewals to the Lehi office.

Get the Habit---Read the Utah Farmer---Make Money

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, DECEMBER 22, 1917 No. 21

Selecting The Herd Sire

M. O. Maughan, Division of Dairying, State College of Wash.

The importance of using a good herd bull is more often underestimated than overestimated, in fact, I may say, very few breeders, and dairy men especially, seem to realize the great importance of a good bull at the head of their herd.

It has many times been said that the bull is half the herd. This is certainly true, and I believe one could go one step further and say that the bull is more than half the herd.

With a good bull at the head of a dairy herd, the owner is almost sure to meet with success, while, on the other hand, with a poor bull at the head of the herd, the farmer is destined to failure no matter how scientific his feeding and modern his other methods.

Right here it might be well to define what I mean by a good bull. In the first place, we must understand and realize that we cannot always tell a good dairy bull nor a poor dairy bull by looking at him. There is something about a dairy bull that we can't see. Right here comes the great difference between dairy bulls and beef bulls. One can judge a beef bull fairly well by looking him over, if he has the proper external characteristics, we can fairly accurately say he is a good bull and might well be used at the head of a herd. But on the other hand, the dairy bull must beget not only offspring of the proper type but offspring which will produce as well. The dairy bull must carry along with his excellent type and conformation an hereditary charatcer for milk production. It is quite common to find that two dairy bulls which make an equally good showing in the show ring will vary widely in their ability to transmit milking qualities to their daughters. One may have daughters much better than their dams while the other bull may have all or most of his daugnters many points below their dams in milk and fat production.

Many people believe that there is as much chance of the next worlds record cow coming from the show ring ranks as from the so called high producing herds. Personally, I would say the chances are no more than 10 to 1 that the cow will come from the show ring. She is going to come, in all probability, from herds which have been carefuly selected and bred for production. She is going to come from a bull which has, in addition to excellent conformation, transmitting factor for production.

In a dairy bull we must look 1st of all for the ability of produce offspring of high milk and fat producing powers. This being so the bull will of necessity be of fair to good type. The excellent type comes in general as a result of high production. It is an end and not a cause.

There are three common methods employed in the selection of a herd sire—1st, selection by type of the individual; 2nd, selection by pedigree; and 3rd, selection by a study of the offspring of the bull.

As previously stated, while it is desirable to have aniamls with good lines, yet it is not necessarily true that an animal with good lines is necessarily a good producer. Animals with type of course look good and can appear in the show ring but when we consider that the 22,000,000 dairy cows in the country are kept primarily for production of milk and butter, and that a bull with good lines is not necessarily from a high producing strain, we can at once see that selecting a bull on type alone is to be discouraged rather than encouraged, unless the breeder intends to breed primarily for show purposes.

Selecting a bull by pedigree and noting what his immediate ancestors have done is a much better way of selecting a bull than by individuality alone. Selecting on record rather than looks is the better plan. While a pedigree gives information concerning the ancestors of an animal, it does not promise that his offspring will necessarily be of the same efficiency.

A still better plan of selecting a herd sire would be to select him on the character of his offspring coupled with pedigree and individuality. His offspring should be seen and studied, it should be determined what his daughters are doing. The one intending to purchase a bull should make an especial attempt to see all of the bull's daughters—both good and bad. The relative proportion of good as compared with bad ones should be determined. There are many bulls which have a few good daughters—these might be due to the excellence

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Girls Run Tractor-Harvester

What can be accomplished by a united and co-operative effort is clearly shown by the Rasmussen family.

Tractor and combined harvester on the Rasmussen farm at Welby.

About three years ago the father died leaving in process of development a dry-farm at Welby. They had made a struggle to secure this farm and make it productive.

While the father was alive his wages as an office employee took care of the family, after his death this partly developed farm was there only dependence. To any one who is acquainted with the family they are impressed with the strong sympathy that existing between the three girls and brother. The girls seemed to realize and appreciate the load upon their brother and were willing and anxious to help him, and so were offended when any thing was said to discourage them from going on the farm. They felt it a patriotic duty and went about it with good heart and splendid courage. It was this spirit that pushed things out of the way and is making for them a success. Obstacles seemed only things to over come and had no terrors to them. They all knew the thing to be done and went about, supervised, of course, by the brother. Help could not be obtained and the girls were anxious and did not hesitate to do any service needed to meet the exigency of the hour.

The very unusal thing about the farm operations is the fact that Miss Florence Rasmussen only ten years of age operates the forty-five horse power Caterpillar tractor. Miss Florence is the youngest of the three daughters of Mrs. Nels Rasmussen. Her sister Esther twenty-three years of age operates the combined harvester which is drawn by the tractor. Their brother David L., 21 years of age, whose photo is not shown on the picture greases and starts the engine sews the sacks of grain as they are filled by the harvester, and does all the heavy work while the two girls operates the harvester and tractor. The other sister Rhoda, who is teaching school at Salt Lake City, was on the farm the day this demonstration took place and helped entertain the visitors, she also helped in any way possible to harvest the wheat crop.

The farm comprises 320 acres of fairly good land, and while they have worked it under adverse condition. it is getting in good shape now. Before this years crop was ready to harvest Miss Florence and David L. were preparing their land for the 1918 crop and they expect to do all they can to help produce wheat for their own use and help to feed our Allies. Their harvest this year would average about 18 bushels per acre some parts of the farm yielded as high as 25 bushels per acre.

With their modern machinery they have been able to help some of their neighbors in plowing, harrowing and preparing their land.

The work that these girls and their brother are doing is very commendable and shows what can be done where the right kind of co-operation is put into practice. They are doing a good thing for themselves and a patriotic duty with increased production.

It was during harvest time, when a number of visitors went out to the farm, to see these girls doing the work of handling large machines such as tractor and combined harvester. Every visitor was pleased and delighted to see how willing and capable the girls did their part in harvesting the hundred and sixty acres of wheat with modern machinery.

Wheat Prices Lowest In Mountain States

M. H. Greene, Field Agent in Marketing, Utah Agricultural College and Bureau of Markets Co-operating.

In establishing the various interior primary markets governing the price of wheat in the United States, those markets east of Chicago pay a higher price for wheat, while those west offer a lower payment per bushel. For instance; the price of number one northern wheat or its equivalent at New York is $2.30, while the same wheat sold at San Francisco is only $2.10; a difference of 20c; at Portland $2.05, a difference of 25c per bushel. But that is not all, a shipper; say five or six hundred miles from New York, perhaps in eastern Ohio or Kentucky; will pay 10c or 15c freight rate per bushel to New York, while the Westerner with a haul of a similar mileage is paying 20c to 25c to a Pacific Coast market, and receives $1.85 to $1.90 per bushel, a difference of 30c to 35c on a single bushel in comparison with New York prices.

An imaginary line from the Western border of North Dakota south to Western Texas is one of demarcation. Areas to the east are in close proximity to the primary markets the farther east one goes the higher the price received for wheat, which offsets the increased freight rate. To the west freight rates increase in proportion to the haul, and in case a Coast market is used, a lower price must be received for the wheat. Is it fair that such a price scale be fixed? But this is not the question at issue. It is clearly evident that the Mountain States are the unfavored ones. We cannot change our location, neither would we if we could. The territory bordering the eastern rim of the Rockies finds Chicago its goal in price fixing. The dry land areas adjacent to the desert looks to San Francisco and Los Angeles, while the upper Snake River Valley and adjacent areas are favored by the Portland or Seattle markets.

Yet it might be said that the Rocky Mountain States does not produce a surplus of wheat over their own needs. The following table is a report of the Bureau of Crop Estimates for the month of October 1917, based upon the 1917 wheat crop.

Surplus of 1917 wheat crop in each of the following Mountain States.

Montana	12,469,000 bushels
Idaho	10,398,000 bushels
Colorado	7,171,000 bushels
Utah	3,900,000 bushels
Wyoming	2,643,000 bushels
Total	36,581,000 bushels

to go to other section of the United States or to Europe. The report states that the seventeen states from Maine to Florida will lack 121,000,000 bushels is having enough wheat to meet the needs of the people of those states, until the harvest of the 1918 crop. The east and west south central

(Continued on page 14)

POULTRY

GETTING READY FOR WINTER.

Careful selection of the fowls that are to be kept for winter egg production, and getting them into condition to produce a maximum yield of eggs, will more than repay one for the time and trouble taken. Not only is it advantageous from many points of view, but it is necessary if one expects a satisfactory yield of winter eggs. The principal reason for making early selection of the laying flock is to get uniform fowls of the right age at the right time, but it is also necessary that they be properly fed and cared for so that they will be brought to the laying point at the earliest possible date.

No pullet can be expected to mature at an early period if she is improperly fed and cared for. If the pullets are given free range they will gather bugs, worms and green feed and get sufficient exercise to keep them healthy, but it is a serious mistake to think that because a young chicken picks up a great deal while roaming about the farm it does not need other feed. Animal feeds and succulent green feed must be supplemented by some form of grain to produce satisfactory results. It is surprising the quantity of feed that young pullets will consume. It is almost impossible to overfeed them, for, unlike the hen in laying condition, they take on fat very slowly. If, however, they are improperly fed and do not obtain a proper variety of feed they will not grow, either in size or weight, and will be very slow in coming to the laying point.

On the farm where pullets have plenty of range, hopper feeding gives very satisfactory results. In this way the chicken can choose at various times the kind of feed it prefers, and eat as much as it wants at any time of the day. This method of feeding saves a great deal of time—an important item when other farm work is pressing. If, however, there are several large hoppers, but little attention now and then is needed to keep them thriving.

Various rations have been found satisfactory for these young fowls. Of course, these rations must be regulated in quantity and variety to suit local conditions, and changes may be necessary as the supply of natural feeds on the range increases or diminishes. It is the writer's experience with White Plymouth Rocks that equal parts of wheat and cracked corn, when thoroughly mixed together, make an ideal ration for pullets that have free range. If the range is small or overcrowded at times when bugs and worms are not plentiful, it is advisable to supplement the corn and wheat with a dry mash composed of 5 pounds beef scraps, 2 pounds bonemeal, 1 pound charcoal, 5 pounds corn meal and 5 pounds wheat bran, well mixed and fed in hoppers.

An abundant supply of fresh, clean water must always be available and kept in a place where the sun cannot shine upon it. An impure water supply is a frequent source of disease. As the pullets approach the laying point a plentiful supply of oyster shells must be kept before them. Ordinarily fowls on a farm will be able to pick up sufficient grit, but when they are not able to get outside it is well to supply some sharp, clean grit. As the weather changes in the fall it is poor policy to let the pullets roost outside. Frosts and chilling winds retard their development and cause a serious setback from which they are slow to recover. The habit of roosting outside can easily be broken up by chasing them into the coop just at dusk and keeping them confined until moring. With this repeated for a number of times the majority of them will give no further trouble.

As cold weather approaches they must have plenty of nourishing feed and must be crowded in every possible way so that they will begin laying before the first exeremely cold weather begins. Any pullet that does not begin laying before the first cold weather will seldom lay many eggs during December and January. It is better to get the pullets in condition early in the season if we are working for a supply of eggs when prices are highest.—Lester J. Meredith.

—o—

KEEP YOUR POULTRY BREEDING STOCK

A great many live fowls which are in apparently good laying condition are being stuffed to the market at the present time. Several reasons are given for this unusal condition.

No doubt a careful weeding out of the flocks on the farms which supplied a large proportion of these fowls would have been a great benefit, but this cannot be said about the wholesale reduction in their numbers which has been made, and which is still going on.

It is true that the situation is unsatisfactory. Grain is high in price. Hens will eat a great deal of it if it is within their reach and if they cannot get it they will not lay many eggs. If they are lightly fed a large part of what they receive is required to keep the machinery of life in motion and they have but little to use for productive purposes. Some breeds will lay more eggs than others, and care has much to do with productiveness, but neither breed nor care can avail if the food supply is inadequate. So under present conditions it is not possible to keep laying hens at a small or even at a moderate cost.

Another discouraging feature in the farm-poultry situation is the fact that the price of eggs is relatively much lower than that of grain. From this condition there is no immediate prospect of relief. The raising of fowls for meat does not offer anything attractive in the way of returns. As far as the present is concerned there is very little encouragement for the farmer to keep hens for market purposes.

But whether it will be desirable to keep fair-sized flocks on the farm until conditions are so changed as to make them fairly profitable is another question. There are good grounds for the belief that such a change will come. And experience and observation have shown that in the long run the men who hold to a given line of business in bad years as well as good ones succeed. When others sell out those who remain have less competition with which to contend. It should be remembered also that the farmer will get his grain at the cost of production. This does not make it certain that the best way for him to use it is to feed it to a flock of hens but it does give him an advantage over a man who has to buy his grain from a dealer who must be paid for handling it. Both sides of the question should be considered before the farm flock is condemned or depleted.

Whatever course may be taken in regard to maintaining flocks for market purposes it surely will be wise to keep enough hens to furnish eggs and an occasional chicken or fowl for the home table. It is hard for a farmer to get along without hens and have to buy all the eggs and poultry needed by the family. In saying this I am giving the lesson of a brief experience in my early days in farming. And I would like to emphasize the fact that it is quoted "not as a pattern to imitate, but as an example to deter."

—o—

WORLD'S WHEAT PROSPECTS

Important figures on the world's wheat crop for 1917 gathered by the U. S. Food Administration show that the combined production of all countries is about 32,000,000 bushels less than last year and about 400,000,000 bushels less than the pre-war average. This decrease from the pre-war average is more than 10 per cent. France shows the greatest decrease of all countries, her 1917 crop being 54.5 per cent less than her average crop before the war.

The total world crop of wheat is estimated at 3,347,924,000 bushels of which the United States produced 659,797,000 bushels, the greatest amount of any nation. Other principal wheat countries arranged according to size of crop are Russia (in Europe), India, Canada, Argentina, and Australia. Approximately two-thirds of the wheat crop for 1917 was grown in countries open to world commerce.

—o—

USES FOR POTATOES IN SWEDEN

Uses made of Swedish potato crop, officially estimated this year at 84,244,820 bushels, will be interesting to people of the United States. Of the entire crop, 37.1 per cent is used for direct human consumption; 32.7 per cent is fed to animals; and 6.5 per cent is used in flour making. The loss in shortage is 11.9 per cent and 11.8 is retained for seed.

—o—

KEPT HIS WORD

"I thought you were working on Jay Krank's new house," said the house painter's friends.

"I was going to," replied the house painter, "but I had a quarrel with him, and he said he'd put the paint on himself."

"Did he do it?"

"Yes, that is where he put most of it."

Remember the heavy snows of last winter?

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Pioneer implement dealers of Utah.

THE COMMON SENSE BOB SLED

(The following copied from "The Power Monthly.")

When one or more manufacturers attempt to imitate an article, it is good evidence of the superior qualities of the article imitated. In no instance in the past 15 years has any article been imitated as much as Sweet's Common Sense Bob Sleds, whose patents expired about that date.

No sooner had their patent expired than many manufacturers attempted to imitate Sweet's Common Sense Bob Sleds, all using similar names to the Common Sense, same color of paint, same striping and other specifications. Yet today they all stand exposed as imitators and have failed miserably to produce a sled that will stand up to Sweet's Common Sense—the only real oscillating sled in existence today. After 40 years of the hardest kind of strain in our mountain work, they stand alone the only successful sled for hard work in existence. adv.

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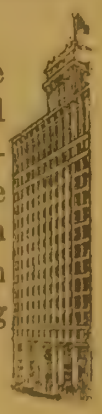

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SALT LAKE STAMP CO. Salt Lake, Utah.

When The Fire Flies

Edgar L. Vincent

When the fire flies then we need a shield. And when disagreements arise among farmer folks a word fitly spoken may smooth the way to peace without the burden, the annoyance and the unpleasantness of a law suit. Who is so well prepared to stand between his neighbors in a matter of this kind as a thoughtful, intelligent, well-read farmer?

No doubt in the best regulated communities disputes will arise first or last, calling for some sort of a tribunal or arbitration. It may be over a line fence, over the encroachments of one man's stock upon the premises of another, or perhaps something not approaching either of these in importance. The first thought in issues of this kind is to consult a lawyer. This is expensive and often by no means satisfactory. Far too often it happens that after the case has been in the courts and thoroughly thrashed out there will be a feeling of bitterness on one side or the other for years, it may be as long as the parties live. Not even then do all quarrels have their end. The feeling of unfriendliness reaches away on to many future generations.

Now, suppose there were in these rural neighborhoods a man who by reason of his upright character and fair dealing, together with a good knowledge of common-sense law, had the confidence of everybody, so that the parties having the controversy could go to him either separately or privately and talk the situation over. Would not an agreement be reached, in most cases, without being compelled to seek the arbitrament of the courts?

Away back from the railroads, among the hills of one of our states, I used to know a man who had done just what has been pointed out above. He was a man who had been out in the world and taken a hand in the work of his day before he bought his farm. When he came to the country he brought with him a good library, among the volumes of which were a few legal works of a very practical nature. He came there at a time when there was quite a little argument in the community over a subject that had very little real value. Of course, both sides wished to let him know how things stood from their standpoint, so that he might be enlisted in their interest. But he made up his mind that he would not be drawn into any controversy in things of that kind; so when men came with their stories he simply said, "Now, this is not a thing I want to be mixed up in. So I do not care to hear either side. I want to be friendly to everybody, and I hope you will help me to be so." That was the end of the matter, so far as he was concerned, and little by little the word went out that he believed it the very poorest kind of policy to be all the time wrought up over petty difficulties that were of very little consequence. Life was too short for any such thing, he said.

The time came when that man was the arbiter of many a little dispute between neighbors, and people came to him from far and near to talk with him and get his advice what to do; and always he told them to keep out of the courts if they possibly could, but to settle their disputes among themselves. I have actually known that man to put out his team when he was at work in the field, go to the house with men who came to consult him over some controversial point and spend half a day and perhaps more in talking the matter over and looking up the law. But I never yet knew of his advising a man to take the matter into the courts. "Better suffer a little," he used to say, "than to get tangled up in the legal spider's web."

Of course, he never took a cent of pay for any time or advice he gave. That was not what he was after. He loved his fellow men and wanted to save them from trouble. Women came too, when things did not go smoothly at home, and often with tears in their eyes told their sorrows, but went away with happier hearts.

There might be such a farmer in every community. Of course, not all neighborhoods have men who have had the experience the man did of whom I have just spoken; and yet there is no rural neighborhood but that has more than one who would be able to act in the capacity of a friendly advisor by taking a little pains to fit himself for it. This would mean that he should read a good deal, particularly works that deal with legal matters in a simple, plain and practical way. There are books to be had now which will guide a man through the greater part of the controversies which come up between man and man. They do not cost a great deal and are worth their weight in gold.

But beyond the books, be they as good as they may, must be a clean, honest, impartial character. Any other kind of a man would only entangle his friends worse and worse and lead them away into the dark. It never would do for a weak, selfish, bad principled man to pose as a neighborhood advisor. In fact, he never ought to invite service of this kind. If he is good at heart, earnest and a friend of all, people will find it out and come to him when he can be of real assistance to them.

It is true that if the right spirit were in us all we could go across the fields to our neighbor, sit down by him and talk over quietly any little matter concerning which there might be a difference of opinion, and so the difficulty could be adjusted and the world never be any the wiser. But we do not seem to have come to that point very generally, so that it is a help to have a third party to refer to.

I know we do hesitate sometimes to let other people know what is disturbing our peace of mind. Pride is strong; and still it is a great deal better to master all such unworthy feelings and go to the trusted friend, and having received his advice, live up to it at any and all hazards. This will save many a heartache, and some money into the bargain.

BUILDING OF THE FARM ICE HOUSE

Ice is almost a necessity on every farm where much milk or dairy products are handled. Without it there is ever present the problem of sour milk and cream. With ice the milk and cream can be kept sweet and the butter or whatever product is marketed can be of far higher quality. There is a constant need for ice on every dairy farm, a need which can be easily met if th farmer but uses a little foresight.

One of the easiest things to get in winter is ice. Many men with ponds sell their ice at 10 cents a ton, the buyer cutting and hauling it. In the cities that same kind of ice retails at $7.00 and $8.00 per ton. The problem with the farmer is storage; and the farmer that does not build his ice house in the summer and get it ready ahead of time is generally not ready to build when the times comes for the ice harvest. Yet ice has become a necessity in the city and should be regarded in the same light on the farm.

For the storage of ice the farmer is in far better fix than the citizen. The farmer can get a big supply for the mere labor of cutting, hauling and storing it. Usually the small city family uses about two tons of ice during the season and has to husband the ice carefully, cutting off the supply in September. The farmer can easily harvest and store ten times as much for home use alone and can have it from the end of one winter to the beginning of the next. Therefore every home without exception in the region where cuttable ice forms should have an ice house large enough for all possible demands.

In estimating the size of ice house to be built it is generally figured that forty cubic feet of space will contain a ton of ice with the sawdust that may be around the sides of the outside layers. An ordinary family will find twenty-five tons a great abundance. This would mean a house about twelve feet long, wide and high. That is a very small structure, as American farm buildings go.

The site for the house should be as near the dwelling as looks will permit, to make it easy to get the ice from the ice house to the dwelling. But more important than this is he choice of a selection that will make drainage easy, as there is always some dripping from the ice during the warm season.

The walls must be str ngly constructed or they will bulge when the ice has been stored. The writer was on one farm where one side of the ice house had bulged out till it looked like a sail filled with the wind. The walls also should be double, with all air carefully excluded from passing through the cracks.

A hard, even floor is desirable, so that it will not become soft with the dripping water and will permit the ice to go in in even layers. But above the floor can be placed timbers above a layer of hay or sawdust to keep out as much of the ground temperature as possible, for the ground temperature runs as high as sixty degrees in the section named and is approximately constant the year around. Therefore it is a large factor to deal with.

The supply of sawdust should be secured before winter, so that it will not represent a failure at a bad moment, for an ice house of the size suggested, four tons of sawdust should be enough and it should last for years.

The construction of the ice house should be such that no ice will stand in water, for ice melts much faster in water than in air.

IT PAYS FOR FARMERS TO GO TO COLLEGE

The most important thing that the principal found out was that the boys—town and country, both—who dropped out of school in the seventh grade earned, on an average, $225 a year each, less than the boys who finished three years of high school. In the course of forty years (I figured only thirty for the farm, but that's fair, as we farmers can usually retire much sooner than a town man) that means that a man with three years of high-school education earns $9,000 more than the boy who quits in the seventh grade.

Moreover, that principal found out that even if a boy quits the farm and goes to live in the town all his life, he earns enough more in forty years, as an educated laborer, than if he had remained uneducated, to pay him $10 a day for every day he spent in school, from the kindergarden clear through to the fourth year of high school. I never drove my car 25 miles an hour before in all my life until I started back to tell these things to my neighbor. The engine sure did hum.—Farm and Fireside.

Somewhere in America

Laying submarine cable, hundreds of miles of it, to scores of isolated lighthouses is one of the telephone tasks made necessary by the war. The Bell System has also built lines connecting some two hundred coast guard stations.

It has built complete telephone systems for fifteen National Army cantonments and fifteen National Guard camps, each a city in size, and also at many naval, officer's reserve, mobilization and embarkation camps and at army and navy stations.

It has provided an enormous increase in long distance facilities throughout the country, that satisfactory service may be maintained between cantonments, training camps, guard outposts, military supply stations, war industries, the National Capital and other centers of Government activity.

The Government facilities at the National Capital have already been increased three-fold and there has been a tremendous increase in local and toll facilities.

Fifteen thousand miles of telephone wire have been taken from other use for the exclusive service of the Government and some 20,000 miles of telegraph facilities also provided.

Meanwhile the Bell System has given generously of its man power, until over seven thousand men are in service or recruited for military duty.

Members of the Bell System whether they have already gone to France or whether they have stayed at their posts to help mobilize the country for victory, are equally in the service of the Nation.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Look over the advertisements in this issue you will find something you want.

A WAR CHRISTMAS

This is the first time for a great many years that Christmas comes and our nation is at war. The Christmas spirit should be encouraged but in a different way. Give the children thrift stamps in place of toys and teach them to save. Service and sacrifice is what our nation is asking for. The love of humanity, brotherly love, the desire to help seems to be in the hearts of nearly every one. Let us work for and pray that peace shall soon come to the whole world, that liberty and freedom may be enjoyed by every living soul.

COSTS LITTLE TO KEEP POSTED

It costs only a post card to send for a catalogue and other information about anything advertised in the Utah Farmer. You may not be interested in all the advertisments, but each week there will be one or more that you want to learn something about. A supply of postal cards or writing material should be kept handy, so that when you see one you want to learn more about you can write for information about it.

Every reader of the Utah Farmer should remember that we guarantee our advertisers. We are very careful about who uses the columns of our paper. You take no chances when you deal with those who advertise in our paper.

HOG PRODUCTION WILL BE PROFITABLE

Prospects for profitable pork production were never brighter than at present, with the demand large, the supply limited, and the Food Administration behind the movement. A campaign has been started with the purpose of effecting an increase in the number of hogs for next year. The Food Administration realizes that no farmer feel, in mind, or is justified in enlarging one side of his business without some assurance that such a change will be profitable. Government guarantees give the hog raiser the best prospect for now profits that he has yet known. Fats for food and fats for explosives are of decided importance to a fighting nation and there is no doubt but hog men once acquainted with the situation, will seize the opportunity to be of service to their country and to their pocketbook at the same time by breeding more sows than they did last spring.

URGED TO BURN WOOD

If farmers will burn wood in place of coal it will not only help the coal situation but it will help the movement of other freight. Every freight car is performing a heavy duty and the fewer the cars that are used for coal the greater will be the number available for carrying other war freight.

It is not practical for some people to substitue wood for coal so where it is possible we are asked to help by using wood.

It is only a few years ago when wood was used even more than coal. Wood could be easily obtained and was really cheaper than coal.

The hills and canyons now have a great deal of dry wood and when the rush of fall work is over we should use as much as possible in place of coal.

BUY A CALF

The present shortage of livestock should bring home the sayings of "buy a calf" more forceably than ever.

The idea of buying a calf for the boy or girl, and allowing them to care for it is doing more than just increasing the number of livestock, it is helping them in such a practical way that they will learn to love and care for livestock.

Our state and government is back of such a movement for they will assist in every way possible to see that these young people get started right and make a success of raising the calf.

In some sections, bankers and men of money are arranging so that boys can have a calf to raise. Very little, if any, money has ever been lost by helping in this work and a great deal of good has been accomplished. The boy, the banker, the community and the livestock industry has been helped.

PROVIDE PLENTY OF GOOD WATER

In order to obtain a maximum yield from milch cows and maximum growth from all kinds of livestock plenty of good water at the right temperature should be provided during the winter time.

Did you ever stop to think that 87 per cent of the milk is water and that the dairy cow must have an abundance of water just as they must have plenty of good feed.

In the winter time livestock would drink more water if plenty of it at the right temperature was provided. Do not expect an animal to drink much ice water in winter.

If you are going to provide plenty of water at a temperature so that they will drink all they should, you must provide some way to take the "chill" off the water.

Cold water means more feed, less milk, and poorer growth. This is only another problem that needs the attention of the farmer now winter is coming on.

THE FARMER NEEDS MECHANICAL TRAINING

For years we have been increasing the use of machinery on the farm. From now on labor saving machinery must increase if the production and efficiency is maintained on the farm.

On the farm today you will find the tractor, automobile, cream separator, gas engine used for grinding feeds, pumping and a dozen other jobs. Every farm should have a repair shop. All this means that the farmer should have mechanical training. The more expert and efficient he is going to be in handling all this machinery the greater the production and profits of the farm.

Only a few are able to take advantage of the short course offered by our schools and colleges. If others learn, they must get their training in some special way.

The one outstanding fact in our agricultural development of today the farmer needs mechanical training in order to successfully operate the modern machinery and labor saving tools and implements.

WASTE LANDS COST MONEY

Every acre of non-producing tillable land should be put to work. We have thousands of acres that would produce good crops if they were only drained and made productive by having the excess water taken out of the soil.

Now is the time to plan the work of bringing these non-producing acres under cultivation. Drainage in nearly every case is a co-operative movement where several land owners must get together and organize a drainage district or must work together in building the main drain that will carry the water from several farms.

Many farmers could and should increase their tillable acres. It would increase their bank account.

We have examples of this in nearly every county where water-logged land has been drained and made productive and the owner is now happy because he has redeemed his farm and it is bringing to him a good living.

Every acre of water-logged land should be drained to increase our production and it will bring better returns to the owner.

INDEPENDENCE IN FARMING

In no other occupation so far as we know is there greater pleasure and satisfaction over a day's work well done than farming. It is true that men find satisfaction in any occupation when they do their best. A task carefully and faithfully done is a monument along the years to one's character. But where is there more comfort and consolation in the accomplishment of one's aim than in farming.

The farmer feels that he is working with nature, that he is able to accomplish a satisfactory day's work because he has fresh air, wholesome foods and sunshine. His tasks are easier because he is out in the open and can work as long as he pleases or stop when it suits him.

The laborer at public work has a shorter day, it is true, but he cannot select his task or always take advantage of the work; he is more or less dependent upon some one for his orders, and his pay. The farmer must depend upon the seasons and sometimes he is disappointed because of drouth or excessive rains, but he can continue and take advantage of his experience and knowledge to reduce risk and failures. There are very few seasons not favorable to some crop or some of the farmer's activities. There is satisfaction in being one's own "boss" and laying one's own plans for the future. Where is there another occupation with so small an investment that is as nearly independent and as certain as farming?

THE RIGHT KIND OF LEADERSHIP

The farmers are organizing, they are co-operating and working together for mutual good.

The one important thing to do in all this work is the selection of the right kind of men to lead their organizations. It means the success or failure of the work. He must be a leader inspired to do the work that will benefit all concerned. Leadership is necessary to focus the power of many into one.

The right kind of a leader is not a wind-jammer, nor yet a clever organizer who hood-winks men into giving up their dollars and their allegiance. The right kind of a leader is a man who will unselfishly devote himself to the cause.

He is necessarily a man of great enthusiasms but down at the very heart of him must be the ideal of service to others and not glory, nor honors, nor riches for himself. He must be honest, he needs courage—and above all and including all he must be a man with a great soul—not merely shrewd and clever and smooth.

The business of the farmer is not to be misled by a sharp trickster who promises much.

Some men soon lead the organization into trouble and the result is dissatisfaction and it goes to pieces.

Sometimes a leader promises much and it is done only for a selfish motive. Much care should be given to the selection of a good leader. Some men are asked to lead in an organization because they are successful in their own work but all successful men are not leaders of men.

The success of farmers organizations depends much on the right kind of a leader.

Siloing The Potatoes

Dr. H. E. Horton.

For generations Denmark, the home of efficient bacon production, has made large use of potatoes, and shown us the way to use this feed to our great advantage. A method for keeping potatoes over the year has stood in the way of developing this valuable feed. In very recent time Dr. Round has worked out the method of preserving potatoes in the form of silage. This discovery is of tremendous importance, for it will stock up our farms and steady the marketing of the potato crop. Under normal conditions from ten to twelve million bushels of potatoes are lost by rotting and in exceptional years this amount easily may reach fifty million bushels. This year large quantities of potatoes wer frozen in the ground. Facilities for making potato ensilage would prevent large losses at this time. The potatoes, after grinding, are put immediately into water-tight receptacles, such as barrels, tanks, or large vats, along with about two per cent of corn meal sprinkled in among the ground potatoes. The mixture is then tamped down, covered to a depth of several inches with straw, cornstalks or leaves, and then fitted with a board cover, weighted down with stones. An air tight covering is necessary in order to prevent decomposition on the surface of the fermenting material. The weight of the stones should be sufficient to bring the juice just over the potatoes, but it is desirable to keep the upper surface of the straw and the board covering dry, if possible. This can be accomplished by the proper adjustment of the stones. When the covering is adjusted in this manner, there is no loss whatever of the fermented potatoes. Fermentation begins at once and if the weather is warm, gas bubbles appear within twenty-four hours and for some days considerable pressure is developed, which necessitates the addition of heavy weights to hold the potatoes down. After a few days the gas formation slows down and the mass settles somewhat, but the fermention is not complete until the end of the third week or longer, depending on the temperature. In warm weather the fermentation is complete in ten days. This work may be done upon any scale, and if reasonable care is used, the losses will be negligible. The spuds should first be washed and then crushed by passing them through an apple grater, modified by substituting rows of blunt spikes for the grater knives. The resulting potato silage is refreshingly acid in flavor, free from any putrid odors and about the consistency and appearance of the original crushed potato. It is eaten freely by cattle and somewhat less readily at first by hogs, although they soon learn to eat it. The fermentation requires a tight receptacle which may be a barrel, a vat, a pit, or a silo, but must retain the potato juice.

POTATO CULL SILAGE

Large Quantities of Waste May Be Thus Carried Through Wnter for Cattle and Hogs.

Silage made from culled potatoes was found to be equivalent to corn silage as a feed for dairy cows and of value also as a hog feed, in preliminary tests recently conducted by the Bureaus of Chemistry and Animal Industry of the United States Department of Agriculture. As potato silage will keep as well as other silage, such utilization of culls and small potatoes would take care of a considerable annual waste, and would enable farmers to carry this feed through until a season of scarcity.

To Make Potato Silage.

Any receptacle that will contain the potato juice may be used for putting up the silage—barrel, vat, or an aboveground or pit silo. To make the silage the potatoes are first washed, using large vats in which the potatoes are stirred by a homemade device, and then ground either by hand or by power. A hand grinder such as is used in making cider has been found to work satisfactorily for making small amounts of silage, while a power apple grater modified by substitutiong rows of blunt spikes for the grater knives is adapted to larger amounts.

After grinding, the potatoes are put at once into the water-tight receptacles and about 2 per cent of corn meal sprinkled in evenly throughout the mass. The use of the corn meal insures an acid fermentation which converts the ground potatoes into silage. The mixture then is tamped down, covered to a depth of several inches, preferably with fermented corn silage, or straw, cornstalks, or leaves, and the receptacle fitted with a board cover weighted with stones. This covering practically excludes air completely enough to prevent decomposition on the surface of the fermenting material. The weight of the stones should be sufficient to bring the juice just over the potatoes. The upper surface of the straw and the board covering should be kept dry if possible. With the covering thus carefully adjusted, loses of fermented potatoes may be almost entirely eliminated.

Feeding Tests.

In feeding tests of potato silage in comparison with corn silage, it was learned that the two kinds are of about equal value as a feed for dairy cows. The potato silage seemed to be as palatable as the best corn silage. With hogs, a lot fed approximately two-thirds of a grain ration mixture of 5 pounds corn meal, 4 pounds of middlings, and 1 pound of tankage, with potato silage equal in weight to the grain fed, gave the best results. The rate of gain, 1.4 pounds per head daily, was considered good. Only 352 pounds of grain were required for 100 pounds of gain. In this lot 1 ton of silage saved grain to the value of $25.22, figuring the corn meal at 3 cents a pound. Potato silage gives better results when fed to hogs 6 months old or over.

DEFINES PERISHABLE FOOD POLICY

In order that there may be no misconception by the public of the attitude of the U. S. Food Administration toward the free consumption of perishable foods, the following statement is given out, re-affirming the position the Food Administration has always taken:

Foods of the "perishable products" group are essential to nutrition, and their continued production, distribution and consumption are vital, in view of national and international necessities.

What the Perishables Are

The Food Administration desires to emphasize these facts, and to assure all producers and handlers of milk and dairy products, poultry and eggs, fish, fruits, potatoes and vegetables that no restrictions have been placed on such food materials, or are likely to be.

Not only are these foods of great use and value in supplying the ordinary bases of nutrition, but they vary the diet and promote palatability of the foods used with them; most of them are succulent or supply necessary bulk in the ration, which aids digestion; and some serve as efficient and necessary regulators of bodily functions, thus warding off ill health.

Since we must save for exportation wheat, meat, fats and sugar, we should utilize more than ever before the bulkier, more perishable products. Wholesalers, commission men, storage warehousemen and other intermediate handlers of most of these perishables must operate under license and report their transactions to the Food Administration.

U. S. Control Prevents Waste.

The progress of these foods to the consumer can thus be followed step by step, so that waste of material and waste motion can be much lessened, and the passage of the goods expedited through all the trade channels. These provisions protect both producer and consumer, as do the necessary and equitable rules and regulations which control hoarding, unnecessary sales within industries and wastetul, speculative practices.

Protects Business Patriots from the Slackers.

Such control of trade and storage conditions are of even greater advantage to the vast majority of handlers themselves, since they are thus protected from the unfair competition of the few unscrupulous members of their industries, and will not have to bear longer the unjust aspersions upon them due to the selfishness and dishonesty of these few associates.

WEEKLY MARKET REVIEW,

Union Stock Yards, Ogden, Week Ending December 17th. Livestock market, steady. Cattle—receipts 2,638; market steady throughout week; choice steers, $9.00@$10.00; good, $8.00@$9.00; feeders, $7.00@$8.00; choice cows and heifers, $7.00@$7.50; fair to good, $6.00@$7.00; canners, $4.00@$5.00; feeder cows, $5.00 @ $6.00; veal calves, $9.00@$10.00.

Hogs — receipts, 1,562; market, slightly lower; tops, $16.00; bulk of sales, $15.75.

Sheep—receipts, 3,021; market, steady; lambs, $15.00@$16.00; ewes, $9.00@$10.00.

NORTH SALT LAKE, Dec. 20.—Cattle—Receipts, none; market steady choice steers, $9.00@10.00; good steers, $8.00@9.00; fair steers, $6.00@7.75; choice cows and heavy heifers, $7.00@7.50; fair to good cows and heifers, $6.00@6.75; cutters, $4.75@5.50; canners, $4.00@4.50; bulls, $5.25@6.00.

Hogs—Receipts, 622; market steady; choice fat hogs, 175 to 250 pounds, $15.00@15.35; mixed fat hogs, 160 pounds and up, $14.75@15.00.

Sheep—Receipts, none; market slow; lambs quoted at 15c to 16c.

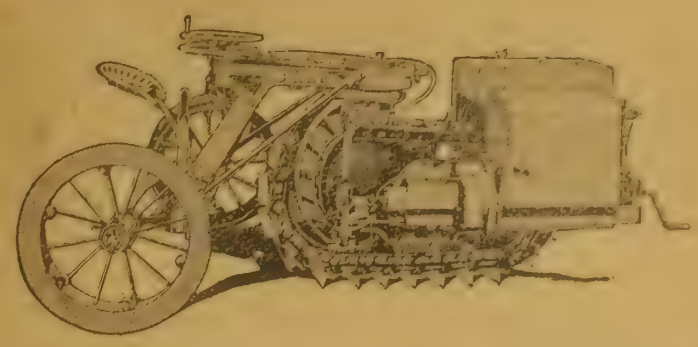
Omaha.

OMAHA, Dec., 20.—Hogs—Receipts, 5600; market steady; heavy, $15.90@16.30; mixed, $16.00@16.25; light, $15.90@16.30; pigs, $10.00@16.00; bulk of sales, $16.00@16.25.

Cattle—Receipts, 4000; market steady to stronger; native sters, $8.50@13.50; cows and heifers, $6.50@10.00; western steers, $7.50@11.00; Texas steers, $7.00@10.00; range, $6.00@9.00; canners, $9.00@10.00; stockers and feeders $8.00@11.00; calves, $9.50@12.50; bulls, stags, etc., $6.00@9.00.

Sheep—Receipts, 10,000; market steady to lower; yearlings, $11.50@13.50; western, $11.00@12.00; ewes, $9.50@11.00; lambs $14.00@16.00.

Buy The Tractor



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Why Not Have a "Bean Day" Each Week?

(Continued from page 1)

til the skins slip off easily. Stir the beans until the skins rise to the surface and can be skimmed off. Put the beans into an earthen crock or bean jar; add the salt pork cut in small cubes, the onion, the molasses, and the paprika. Cover the jar, and bake the beans slowly for six or eight hours. Slow cooking develops the flavor. When the beans are almost done, add the salt and the tomato sauce, which may be made according to the following recipe.

Tomato Sauce.

1 cupful strained tomato juice, 1 tablespoonful flour, 1 tablespoonful butter, 1 bay leaf, 1 clove, salt and paprika.

Melt the butter, add the flour, and rub the mixture to a smooth paste. Add the tomato juice and the seasoning, stir the mixture constantly, and cook it until it thickens

Boiled Dried Beans.

Wash the beans. Soak them overnight or for about eight hours in four times their quantity of soft water, to which soda has been added in the proportion of one-fourth of a teaspoonful of soda to one quart of water. Remove the skins by stirring the beans in water or, in the case of the large lima beans, by pressing them between the fingers. Cook the beans slowly in the same water, adding more if necessary, for from two to four hours, adding onion or flavoring herbs as may be desired. Add salt to the beans when they are nearly done. Serve with strips of crisp bacon or one tablespoonful of chopped parsley.

If the skins are hard to remove after the beans have been soaked, cooking them for twenty or thirty minutes will usually loosen the skins sufficiently to allow them to be slipped off easily. If the bean pulp is desired for use in other dishes, it is somewhat easier to remove the skins by putting the beans through a sieve after they are cooked than to remove them before cooking.

Baked-bean Loaf.

1 pint cold baked beans, 1 egg, beaten, 1 cupful bread crumbs, salt and pepper, 1 tablespoonful finely minced onion, 2 tablespoonfuls tomato catsup.

Combine the ingredients, and shape the mixture into a loaf. Bake it for twenty-five minutes. Serve with strips of broiled bacon on the top.

Mashed Beans

Until recently few housekeepers were familiar with the method of using bean pulp instead of the whole bean in the familiar "pork and beans." To make this pulp, boil any lima, pea or red bean in very little water until tender. Press through a fine puree strainer and season. This pulp can then be used hot instead of mashed potato, or it can be made into croquettes or patties or as a stuffing for meat and vegetables. The pulp of lima beans is particularly sweet and delicious. If combined with beaten egg yolks and stiffly beaten whites it makes a souffle or baked custard which is most delicious and nourishing, especially for children.

This pulp is really a 100-per-cent no-waste food, for even though the price of beans is quite high, it must be remembered that there is not an ounce of loss through bone, gristle or trimming; they are the most concentrated food. The one ingredient that they lack is fat, so it should always be combined in their cooking; high contrasting flavors, like tomato, pepper, thyme, etc., should also be used.

Much is being made of the new emigrant from Japan, the soy bean. It is the most nutritious of the entire family, is as easy to cook and tastes just as well as our own navy bean. It can be boiled, baked or made into soup and the flour makes delicious muffins and pancakes. Ask your dealer about the soy bean and try some of your favorite recipes with it.

Another bean that could be used more is the large red kidney bean, whose pulp is particularly mealy. This is the kind used by Mexicans and Asiatics and which is so tasty in hot, pungent dishes. The pulp mashes well, makes excellent croquettes and stew. The small red and white mottled Italian bean has very good flavor, especially excellent for baking. The lima has the sweetest flavor of all and makes the best mealy pulp.

Red Sow Bean Soup.

½ cup Soy beans, 1 pint cold water, 1 slice onion, 2 slices carrots, small piece bay-leaf, few grains mustard, ½ cup milk, 2 tablespoons drippings, 1 tablespoon flour, ½ teaspoon salt, ¼ teaspoon pepper.

Soak the beans 12 hours in cold water. Drain; add 2 cups water, and simmer until soft. Rub through a sieve. Cook the onion and the carrot in the fat, add the flour, when smooth and the milk. Cook until thickened and strain into beans. Reheat and serve hot.

Spanish Beans.

2 cups kidney beans, 2 cups tomato, 1 cup finely cut onion, ½ cup pimiento, 2 tablespoons drippings, 2 tablespoons flour, 1 tablespoon salt.

Soak beans over night; drain, cover with boiling water; boil slowly 1½ hours or until tender. Drain and add sauce made as follows: Put fat in frying pan, add onion and chopped pimiento and fry until tender but not brown. Add tomato, salt and flour mixed with cold water. Boil 5 minutes. Pour over beans and simmer 10 minutes.

Bean Loaf

2 cups Lima beans, 1 cup dry bread crumbs, 4 tablespoons peanut butter, 2 tablespoon drippings, 1 tablespoon dried celery leaves or poultry seasoning, 2 teaspoons salt, ¼ teaspoon pepper, 1 cup rice stock or other liquid.

Wash and soak the beans over night, then cook in boiling water till soft (about 45 minutes). Drain, and when cool chop coarsely. Add crumbs mixed with seasonings and peanut butter, then add liquid and fat. Put into a greased bread pan and bake in a moderate oven 30 minutes.

Yield: 8 servings.

Boston Roast.

2 cups dry kidney beans, 1 cup bread crumbs, 2 cups grated cheese, 3 teaspoons salt, ½ cup liquid, 1 tablespoon chopped onion.

Soak beans 24 hours. Cook in salted water until soft. Drain; put through food chopper, add onion, cheese, crumbs, more salt if needed, enough of the water in which beans were cooked (about ½ cup to moisten). Form into loaf. Bake in moderate oven 40 minutes. Baste occasionally with hot water and fat.

Yield: 10 servings.

Bean Soup.

1 cupful boiled-bean pulp, 1 pint milk, 1 tablespoonful flour, 2 tablespoonfuls butter, 1 tablespoonful minced onion, yolk of 1 egg.

Scald the milk and the onion. Melt the butter, add the flour to it, and blend them. Add to this the hot milk, and stir the mixture until it is smooth and thickened: add the bean pulp, and allow the mixture to come to the boiling point. Just before serving, add the well-beaten yolk of egg.

Baked-bean Soup.

2½ cupfuls baked beans, 3 cupfuls water, 1 slice of onion, 1 tablespoonful butter, 1 tablespoonful flour, 1½ cupfuls milk, salt and pepper.

Follow the directions given under bean soup.

Bean Souffle.

1 pint hot boiled-bean pulp, 2 eggs, 1 teaspoonful onion juice, 2 tablespoonfuls finely chopped parsley.

Beat the yolks of the eggs, and add to them the other ingredients. Fold in the well-beaten whites of the eggs. Heap the mixture lightly in a baking dish. Bake it in a slow oven for about twenty minutes or until it is set. Serve it immediately.

Scalloped Lima Beans.

Put a layer of boiled lima beans into a buttered baking-dish. Sprinkle them with salt, pepper, and bread crumbs. Over several such layers pour sufficient white sauce to cover. Sprinkle buttered crumbs over the top. Bake for twenty minutes in a moderate oven.

White Sauce.

2 tablespoonfuls butter, 2 tablespoonfuls flour, ½ teaspoonful salt. pepper, 1 cupful milk.

Melt the butter; remove it from the fire; add the flour, the salt, and the pepper; and stir the mixture until it is smooth. Return the mixture to the heat; add the milk; and stir the sauce until it thickens. Cook it for fifteen minutes over boiling water or for five minutes directly over the fire, stirring it constantly.

Bean Crust.

1 cupful boiled-bean pulp, ½ teaspoonful salt, 1 teaspoonful baking powder, 1 egg, beaten, 2 tablespoonfuls melted fat, flour, enough to make soft dough.

Combine the ingredients. Roll out the mixture to about one-eighth of an inch in thickness on a well-floured board. Cut strips of suitable size, when folded, for individual pies. Fill the pies with chopped cooked meat or vegetables. Fold the crust over, and press it together along the edges. Bake the pies in a moderate oven until they are well browned.

Making Up Leftovers.

Beans are also a food which use up scraps and leftovers to the best possible advantage. Any small trimming

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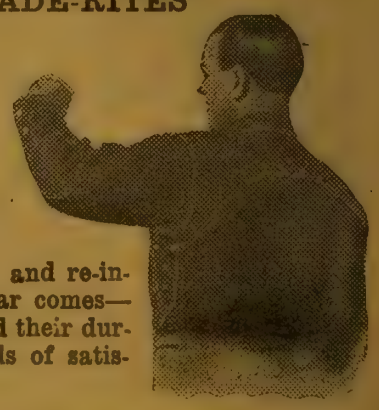

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of meat, ham, celery tops or the water in which vegetabels were cooked can be used as the water in which to boil the beans and increase their nourishment. There is not a ham shank too small or a bacon rind too old to be used for flavoring. Carrots, cabbage and celery too wilted to appear as vegetables can be cut in fine bits and combined in the various bean dishes. Beans should always be cooked with the pot lid off in order to let the sulphur compound escape. The water in which they were soaked should not be used; but do not throw away the water in which they were parboiled, as this holds some of the valuable elements. It seems natural for beans to cook best in earthenware, and many of us should try the plan of cooking soup in crockery like our frugal cousins, the French. The flavor is better and the service made easier by cooking and serving in the same dish.

Cold beans can be utilized in many kinds of salad. A delicious one is made by combining the cold beans with thinly shredded cabbage, green pepper and mayonnaise. The cooked beans make a stuffing for tomato cups or when combined with sliced apple of celery gives a substantial salad. When you want something new for a snack lunch try cold beans with boiled mayonnaise and diced celery eaten with a hot frankfurter and a cup of coffee. There are so many ways to serve beans that they could be served every day in the week; but if we decide to have only one bean day we will help along the war and at the same time benefit our own stomachs and pocketbooks.

MEAT SUBSTITUTES

Impelled by economy and war duty, housekeepers are collecting meat substitute dishes. These dishes are high in protein value and should be served in place of meat and in combination with fresh vegetables. Potatoes and tomatoes combine well with bean dishes.

Beans and Rice.

2 cups cooked kidney beans, 2 cups cooked rice, 4 cups tomato sauce.

To make the tomato sauce:—Brown 3 tablespoons of flour in ¼ cup of drippings or vegetable oil and mix with one quart of strained tomatoes and 1 tablespoon grated onion. Cook sauce five minutes; combine hot rice and beans; pour over them the hot sauce and serve.

Creamed Peas or Beans

1 pint dry peas or beans, ½ cup milk, 1 teaspoon drippings, 2 teaspoons syrup, 1 teaspoon salt, pinch red pepper.

Soak beans in cold water over night or until hulls rub off easily; rub between hands until all skins are removed; boil slowly with just enough water to cover them until thoroughly done; pass through a ricer; add other ingredients; whip as for creamed potatoes; serve hot.

Fish Kedegree.

1½ cups flaked cooked fish, 1 egg, 4 tablespons rice, 1 teaspoon chopped onion, salt and pepper to taste, 2 tablespoons drippings.

Wash rice and drop slowly into fast-boiling water, with a teaspoon of salt, and boil fast until tender (about twenty minutes). Drain well, and dry in a colander. Boil the egg hard, cool it in cold water, and chop it coarsely. Melt the fat in a saucepan, stir in the cooked rice, add the fish and seasoning. Make it very hot, then add the chopped egg, and serve at once.

If onion is liked, fry it lightly in the fat before putting in the rice.

LIBERTY CANDIES

What about Christmas candies? Must candy be omitted from the Christmas box for the boy at camp and the girl at school or from the little ones' stockings?

Before answering, let's face a few business facts. Our Allies, France and Italy, are now dependent on the American sugar bin and the bottom of the bin is in sight. According to an authoritative bulletin, "the present period is one in which stocks are nearly depleted in the United States and the countries on which it draws."

Do these business facts mean no Christmas candy? Not if you are clever in combining fruits and nuts. Such sweets keep fresh a long time and are just the kind for Christmas boxes. They are delicious for desserts, are wholesome and universally liked. One cup of white sugar is enough for five pounds of these Liberty Candies.

Pop-corn Candy.

For making pop-corn candy either honey, maple syrup, molasses, white cane syrup or corn syrup may be used instead of sugar. To one cup of syrup allow one tablespoon of vinegar. Boil together until syrup hardens when dropped in cold water. Pour over freshly popped corn and mold into balls or fancy shapes for the Christmas tree. Little pop-corn men will please the children. Mark in the features and outlines with melted chocolate.

Crystallized Fruits.

Use your own preserves. Peach, pear, apple, quince or watermelon rind will do. Drain from the fruit all syrup possible. Cut any size desired, sprinkle with sugar, and dry in the warmer or a very slow oven. It may be neecssary to sprinkle the fruit again with sugar during the drying. When dry enough not to be at all sticky, sprinkle with sugar and pack in layers with wax paper between. This fruit may be used for dipping in bitter chocolate for bitter-sweets.

Bitter-Sweets

An attractive variety of candies may be made by dipping sweet fruits in bitter chocolate. Use for this purpose dates, citron, candied orange peel or crystallized fruit. Melt unsweetened chocolate in a double boiler. Keep the chocolate just warm enough to prevent solidifying. With a silver fork drop pieces of fruit in chocolate. See that each piece is completely coated, then remove to waxed paper to harden.

Stuffed Dates.

Use the best dates. Remove the stones. Fill with peanuts, walnuts, hickory nuts or any nuts available. Peanut butter makes a good filling that is different. Press dates in shape and roll in granulated sugar, chopped nuts, or a mixture of cocoa and powdered cinnamon.

Fruit Paste.

Put through the meat chopper enough cherry, peach, or quince preserves to make a half-pint with the juice. Heat fruit and add two tablespoons of gelatine, previously softened in a very little cold water. Stir well, and continue stirring until it begins to cool and thicken, then pour into oiled dish to make a layer one inch thick. Let dry slowly, sprinkle with sugar and place in box with waxed paper between the layers. A mixture of dried apricots and dates may be ed for this paste. Wash apricots and soak overnight in enough water to cover. Pour off water, bring it to a boil, pour over apricots, and let stand until cool. Put apricots and dates through meat chopper, and proceed with the proportions as given.

Chocolate Dainties.

Put through the meat chopper one-half cup each of dates, figs, and nut meats. Add one tablespoon orange juice, a little grated orange peel, and one square of melted unsweetened chocolate. Mould into balls and roll in chopped nuts or granulated sugar. This mixture may be packed in an oiled tin, put under a weight until firm, then cut in any shape desired.

Maple Creams.

Boil one cup maple sugar with one cup water until it forms a soft ball when dropped in cold water. Remove from the fire and stir rapidly until it becomes creamy. Form into balls the size of marbles and put nut meats on either side. Lay on wax paper to cool.

DO YOU LIKE POPCORN?

Pop-corn Cake.

1 quart popped corn.
1 cup sugar.
¼ cup corn sirup.
¼ cup water.
2 tablespoons molasses.
1 tablespoon butter substitute.
1 teaspoon salt.

"—use foods that require less sugar"

THIS is one of the most important recommendations of the Food Administrator: "In cooking and baking use foods that require *less sugar*."

In other words—use Ghirardelli's. Use it freely and wisely—in place of other less nutritious and more expensive foods. Not only will you save money but you will help in food conservation.

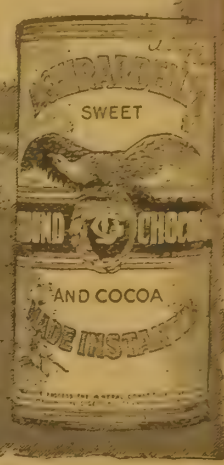
Cooking and baking require less sugar when you use Ghirardelli's. Because—it contains in itself the sweetening flavor you need. More than this—it adds a new touch of richness to your icings, your puddings and other desserts.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852 San Francisco

Ghirardelli's Ground Chocolate



Pick over the popped corn, discarding all hard kernels, and finely chop the corn, or put through meat grinder, using a coarse knife. Put sugar, corn sirup, and water in saucepan, stir until it boils, and cook to 270 degrees F., or until candy cracks when tried in cold water; add molasses and butter substitute, and cook to 290 degrees F., or until it is very hard when tried in cold water. Add corn, stir until well mixed, return to fire a moment to loosen it, then pour on buttered slab or tray and roll with rolling pin as thin as possible. Cut in squares or break in small pieces. Molasses may be omitted."—Woman Home Companion.

SAVING FOR THE FUTURE

One reason the occupation of farming has been more or less uncertain and drouth or depressed markets more or less demoralizing is the fact that so few farmers have formed the saving habit. Even when in a prosperous condition with crops and animals above what are necessary for present needs many producers in the past have sold or otherwise disposed of the products as soon as marketable, leaving the future to provide for itself. The old way of selling as soon as products are ready has been a characteristic that should not be continued.

Most farmers use their products as productive capital rather than cash. Corn, hay, cattle, sheep, hogs, etc., are the basis of their wealth. But these products have too often been sacrificed when prices were low even when necessity for selling did not demand the sale. In other words, the products may have been worth more by holding them and perhaps present needs supplied without the cash represented.

It is a wise plan to form habits of thrift by saving something for the future. No one should deprive himself and his family of conveniences and comforts for the purpose of saving, but it is worth much to lay up something or emergencies which may never come.

The savings banks and the postal savings at the post offices encourage thrift and are a great influence for independence and prosperity. By saving something for the future, expensive and embarrassing credit is avoided and one learns to finance his own business. Young people on farms should be encouraged to save some of their income and thus accumulate capital to start a business of their own.

FARMING A GOOD BUSINESS

Total Income of Utah Farmer, $2,605
Labor Income $541.

The total net income of the average Utah farmer is $2,605, according to a series of investigations recently completed by the Department of Farm Management of the Extension Division of the Utah Agricultural College. These investigations covered 309 farmers located in Cache, Salt Lake, Carbon, Emery, Millard, Sevier and Beaver Counties. The average conditions found were as follows:

5 per cent interest on average capital of $11,886	$ 594
Average Farmer's labor income	541
Value of Farm products consumed by average farm family	600
11.625 per cent of $7,482, increase in value of average irrigated farm land on 309 irrigated Utah farms, 1914	870
Total Net Income	$2,605.00

Formation of community hog cholera prevention association is war organization not to be overlooked.

DAIRYING

THE IMPORTANCE OF TESTING OUR COWS

The testing of our cows for milk and butter production is of the greatest importance, not only to our dairymen, but also to every man who keeps a cow for the milk and butter he produces.

It is a well known fact that the cows that are breaking world's records for milk and butter production today come from stock that were tested by their owners in years gone by This may not strike the reader with much force at first, but there is a great lesson to be learned in this fact if you will but stop to think it over.

It simply points out the fact that testing has been one of the great factors, if not the greatest, in the development of our dairy stock.

Now, if men of wisdom have proved by experience, the importance of testing in order to develop our breeds of dairy cattle, how readily it ought to appeal to each and all of us who own cows, to get into the habit of testing them with a view of developing our herds. If it will develop a breed it will certainly develop a herd. The different breeds are, of course composed of the herds throughout the country, and it is the progressive breeder, or herdsman, that develops not only his own herd, but also the breed of his choice.

It is thought by some to be a matter of too much trouble. This is certainly a mistaken idea.

A small pair of scales hung behind the cow, or cows, as the case might be, a sheet of paper tacked on a smooth board near the scales with a pencil tied to the board, is all that is necessary. It would not take one minute at each milking to weigh and record the amount of milk given.

At least once in each month a sample of the cow's milk, both for morning and evening milking, should be taken and tested for fat contents.

This is not a hard job and it is certainly not an expensive one, as our county agent is at our service to help in these matters. He will take your samples and test them for you. All this will cost you is the little trouble you are put to.

One sample of milk does not give you any reliable idea as to how rich your cow's milk is. It is necessary to follow it up from month to month to get anything like a reliable line on your cow.

When one thinks of the untold number of cows that are not beginning to pay for the feed they consume, to say nothing of the trouble the owner has with them, it sems almost beyond belief that our dairymen and owners of cows do not "come out" of his Rip-Van-Winkle sleep and "get moving."

If the average business man conducted his business as the average cow owner cares for and milks his cows, about 75 per cent or more of them would go out of business in short order.

The Federal government, together with our State and County governments, afford, through our agricultural agent, the facilities to test our cows especially, which ought to be done by all means, if the owners of the dairy cows have pure bred stock, and our agent is always on hand to direct and counsel the average owner of a milk cow in the testing of his stock.

There is absolutely no excuse for any man who owns a cow to let her go untested.

The cow on cow should be tested to prove her real value to her keeper. If your family cow is costing you $50.00 year for the pleasure of hand-feeding and milking her over and above the milk she is giving you, don't you think it would be a fine thing to "make a cash" on her and replace her with a cow that will pay for her feed, care, etc., and in addition hand you a profit of $50.00?

Every day a person who has any knowledge of cows at all can see examples more striking than the above among the cows of our section. We have the stock—good stock, all we need to do is to start, all of us, now, and test our cows, and the minute we do we are certain to start the forward march for improved dairy cattle.

Those who own pure bred stock, and there are a great many pure bred animals of the different dairy breeds in Utah county, should by all means start testing at once, and put their cows in the honor lists of the different official breed records.

The expense of nothing compared with the great benefits gained by testing such cows. If you want any detailed information about how simple this testing is, call on our county agent and he will be pleased to advise you.

The great Jacoba Irene was not known to the world until she had passed into the hands of a man who tested her, and after she was around ten years of age she broke a world's record and held it for four years before Sophie 19 claimed the honors. Both these cows, by the way, trace their pedigrees back to tested stock. After Jacoba made her great record, men who believe in testing found her mother, an old cow then, but notwithstanding her age, they put her on test and found a great cow in her. In fact she has held a world's record for her age for a long time, and she is still making history!

Testing brought these two great dairy queens to the knowledge of the public. Without testing they would not have been known and their breeding value, to a very marked extent, at least, would have been lost to the dairy world. By testing we may develop and bring to "light of day" another Jacoba Irene or Sophie 19. This is no idle dream, it is not beyond our possibilities by any means. We have the stock, we have the climate, the fields to produce the greatest feed on earth, in fact, we have all we need and we have advantage over our Eastern brother, except that he is "up and doing" and making the most of his opportunities, while we are still in a Rip-Van-Winkle sleep. It is certainly time we were "coming out of it."—A. O. Smoot.

KEEP THE BEST FEMALES

There never was a time when the need of keeping the best females was more apparent.

To get the best results one must keep those females in the herd that are similar in type and characteristics. Any breeder who is continually selling his best females is not getting very far along in the production of a good herd.

It frequently happens that noted herds, even large herds, have been built up from the progeny of one or two good females. This is true not only in cattle, but it is also true in hogs, and the beginner should have special regard for the cow that year after year produces typey calves similar in outline and in feeding characteristics. While the male is generally regraded as half the herd, it is nevertheless true that little progress can be made unless special care is taken in preserving the females out of the dependable cows.

We quote from a recent issue of the Short-horn in America:

"In maintaining a breeding herd the owner must protect his interests by retaining for breeding purposes a few of the best females produced from year to year. There is a temptation to dispose of the best females along with those less desirable. As a rule the prospective buyer urges the owner to name a price on the best heifers. Through shrewdness he will often make the purchase of the others conditional upon a reasonable price quoted upon the best ones, but whenever the owner parts with females that would improve his herd, unless he retains others equally as worthy both in breeding and merit, he retards his own progress. There must be retained from year to year a few heifers to take the place of the aged cows as they become uncertain as producers, and it is of the utmost importance that those retained be from the top. It takes a long time to ge anywhere in the cattle breeding busines unless the breeder adheres to such methods.

"It will be found that there is a decided and inexplainable variation in the producing value of the females and those that have proven dependable as producers should be retained as long as they prove regular breeders.

The writer has in mind an interesting case in which a certain breeder purchased a cow at what was regarded at that time a long price. She was mated to an outstanding bull which he had in service at the time and in due time dropped a beautiful heifer. This heifer has produced calves from two different bulls and they have been a disappointment. She is now in calf to a bull of another line of breeding and somewhat different type, and it is hoped that the results will be more satisfactory. A year after making this purchase this breeder selected a number of females from the same herd, but obtained them at a much lower price,

SHARPLES
Famous Suction-Feed
"Skims clean at any Speed"
SEPARATOR

Experiment stations and separator manufacturers all admit that all separators (except Sharples) lose considerable cream when turned slow or unevenly. Thousands of investigations have proved that 19 people out of 20 turn their separators too slow. Sharples is the *only* separator that:

—skims clean at widely varying speeds
—gives cream of unchanging thickness—all speeds
—skims your milk quicker when you turn faster
—has just *one* piece in the bowl—no discs
—has knee-low supply tank and once-a-month oiling

Over a million Sharples users in every dairying country of the world. Write for catalog to Department 104

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COMMON SENSE BOBS

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and it happens that every female in the later purchase and every heifer that has been dropped and retained in the herd has been a producer of better calves than the one just referred to. There are many other similar experiences which suggest that the prices do not determine the actual value of the animal. It further demonstrates that the successful breeder must study each individual and be governed by its performance as to whether it should be retained in the herd.

"In the case of this heifer she may mate properly with the sire she is now in calf to. There may be the best of reasons why she did not mate well with the two bulls to which she was previously bred. These are conditions that cannot be wholly foreseen. It takes time to prove them. In the main, however, there is no other dependable way for the building up of the breeding herd than the retaining of worthy females produced in other herds. By selection of those produced within the herd the type will more readily be established and in this practice the breeder has the advantage of being familiar with the family traits of each.

"It happens that certain females will not produce as regularly as others, and this characteristic is often transmitted to succeeding generations. There are other females whose calves vary in type—another characteristic that is transmitted. Then there are others whose calves are all of a type, are all dependable, and these characteristics are also transmitted.

It is these interesting problems that engage the breeder's attention and study."

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has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.

Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.

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for your separator. Whether a separator is hand or power driven, makes not a particle of difference. Jersey Separator Oil is made to lubricate all kinds of separators. Order a can from your dealer today.

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SALT LAKE CITY, UTAH

CALL FOR CONVENTION OF LIVESTOCK ASSOCIATIONS AND STOCKMEN

The Twenty-first Annual Convention of the American National Livestock Association, to be held at the Convention Hall in the Utah Hotel, Salt Lake City, Utah, January 14, 15, and 16, 1918, opening at 2 p. m. on Monday, January 14.

Reduced railroad rates will be given on all roads for this convention.

Questions of importance will be discussed by men prominent in the livestock world, government officials, and others. An unusually attractive program is being arranged. Officers of the federal government connected with the Food Administration, Bureau of Animal Industry, Forest Service, and Geological Survey, as well as state livestock officials, will be present.

COUNTRY OF BEEF EATERS

Striking figures just announced by the U. S. Food Administration show that people in the United States consumed more than ten pounds more beef per capita in the fiscal year 1916-1917 than in the previous year. The average consumption of beef for each person was 65.04 pounds for the past fiscal year.

This condition was one cause for the slaughter of more than a fourth of the total cattle in the country last year instead of a little over one-fifth, the proportion previously prevailing. It has also been accompanied by a shrinkage of more than 33,000,000 pounds in beef exports from the fiscal year 1915-1916. These facts help to emphasize the importance of reducing beef consumption during the coming year in order to better sustain our Allies and troops in Europe.

EAT LAMB ANY DAY BUT TUESDAY

Just at the present time there seems to be no market for the great number of lambs that have been fed in his territory.

There seems to be a misunderstanding in regard to the use of lamb and veal. A meeting was held at the office of State Food Administrator after going over the situation telegrams were sent to Mr. Hoover and in answer came the following telegram to the National Wool Growers Association:

"Food administration has asked no restriction on use of lamb except its requirements of meatless days—lamb is not to be eaten on meatless days."

This is from J. P. Cotton in charge of the meat department for the Federal Food Administrator.

According to Mr. Frank J. Hagenbarth, President of the National Wool Growers Assoiciation the Federal Food Administrator will soon issue an appeal to the people of the United States to eat mutton and lamb in preference to pork and beef in order that the supply of pork and beef may be conserved as much as possible. There seemed to be a misunderstanding in the early part of the war about the eating of lamb and veal.

There is a shortage of hogs and cattle in the west due to the high price of feed. They have been shipped out of the west to eastern market. Farmers seem to think that they can make more money by selling the hay than feeding it.

It is estimated that in San Pete and Sevier Counties there are 40,000 lambs if not sold very soon, they will be a lost to the feeders because they can not be sold as lambs but must be sold as mutton.

One prominent feeder said that he made money last year by keeping his lambs over during the winter. Much would depend upon conditions as to cost of feed, care, etc., as to whether it would be profitable or not.

The situation however is a serious one and something must be done to find a market for the lambs now ready for market.

The government is using no lamb in the army or navy and they are shipping none abroad, no exports it seems is if the American people must buy the lamb or there will be no market.

PORK PROSPECTS

A birdseye view of the pork situation may be had from figures announced by the U. S. Food Administration. At the beginning of this year, swine in the United States numbered about 67,450,000. In Europe the decrease in hogs since the war began has exceeded 32,000,000. So the European shrinkage equals about half the total number of hogs in the United States.

In the face of this situation, the American people consumed more than three pounds of pork per capita during the last fiscal year than in the average of the three years before the war. Farmers who are doubtful about pork prospects should remember that the nation's feed supply is above normal and the meat supply is below the demands now made on it. Lower hog-feed prices are already indicated in the reduced price of new-crop corn.

In a recent statetment, Herbert Hoover, U. S. Food Administrator, says: "If farmers are to find markets for feed, it must be to a great extent through an increase in animals. The monetary interpretation of this situation must be that we will have a low range of prices for feeding stuffs, and in view of the European situation and our own shortage in hogs we will have a high average price for pork products. Therefore, it must be to the vital advantage of every farmer to raise hogs."

LIBRARIES AID CAMPAIGN FOR MORE HOGS

As an additional effort in the nationwide campaign to secure at least a fifteen per cent increase in the number of hogs, the U. S. Food Administration is supplying libraries with copies of two recent official bulletins for general distribution. One of these publications entitled, "Hog and Corn Ratios" contains the report of a committee of practical livestock farmers appointed by the Food Administration to study means of increasing pork production and placing the hog industry on a sound basis.

The second bulletin, "Prices of Hog," refines the Administration's policy of hog values based on market quotations for corn. This literature has been sent to libraries in the principal cities of hog growing areas for free ditsribution among patrons. Copies may also be secured on request by addressing the U. S. Food Administration, Washington, D. C.

FRENCH BREAD REGULATIONS

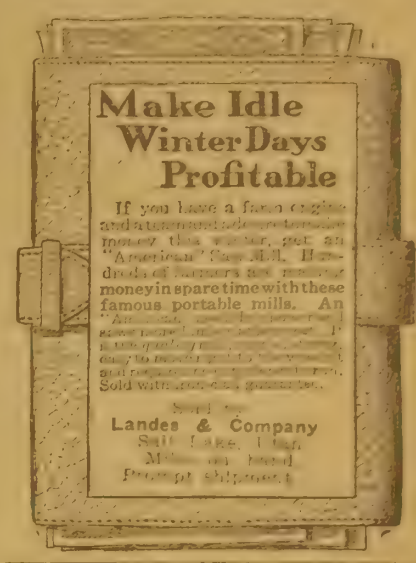
Bread cards issued in Paris the latter part of October give daily rations which vary with the age and occupation of the person using them. The allowance for most adults and children six years of age or over is 1.1 pounds of bread daily. Persons whose employment requires them to have additional food are allowed from 1.54 to 1.98 pounds.

Children under six years are limited to 0.656 pounds of bread except those under three years, who are permitted to have 0.11 pounds of flour extra. Adults who declare they will limit themselves to a ration of 0.656 pounds of bread are also given an allowance of flour.

KEEP ELECTRIC LAMPS CLEAN

Very few housewives remember to dust off the electric light bulbs and shades. Even a thin film of dust reduces the candle-power materially, thus increasing the consumption of current and the cost of lighting. When a lamp becomes coated with dust, and does not give [illegible] candle-power, other lamps are turned on, or a larger candle-power lamp is purchased, when an application of a damp dust cloth would be sufficient.

Anyway, cottontails can serve the nation better in rabbit pie than by gnawing fruit trees.



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This style COLUMBIA GRAFONOLA has been sold for years to more people than any other instrument, regardless of name, price or make. We offer to send you this instrument and your choice of records on FREE TRIAL without a cent in advance. Think what it would mean to have the World's Greatest Singers and Musicians right in Your Own Home, ready to entertain you hour after hour. Remember, the outfit is sent on FREE TRIAL, and if you don't want to keep it after trial we will pay the charges back to Salt Lake. You're free to make your own decision. No salesman or canvassers will bother you. Catalogue and further particulars free.

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LIVE STOCK

WINTER CARE OF FLOCK

Proper Attention Will Increase Profits From Sheep.

A. M. Paterson.

Ewes Should Be Turned Out Where They Can Get Plenty of Exercise —Crowding Causes Loss of Lambs

The number of lambs and the amount of wool produced by the flock will depend largely upon winter care.

The rams should be taken away from the ewes as soon as the ewes are safe in lamb. The ewes should be allowed to run on pasture until late in the fall. As soon as pasture becomes dry and scarce, some other feed should be added to the ration, such as alfalfa hay, silage, corn fodder, or straw. The sheep should be provided with dry, well ventilated quarters, and care should be taken not to confine them too closely. Their quarters should not be too warm.

Exercise is Important

A great mistake is often made in confining sheep too closely. They should be turned out where they can get plenty of exercise. A large field or pasture where corn fodder or other feed is scattered is desirable.

The feed boxes and doors should be arranged and constructed in such a way that crowding will be avoided, because crowding may cause some ewes to lose their lambs.

After the ewes are taken in for the winter they should be given plenty of feed to keep them in thrifty condition. It is a good practice to go over the flock from time to time to deterimne the condition of the ewes. The thin ewes should be separated from the rest of the flock and given a little extra feed so that the flock will be uniform in condition. Care should be taken not to get the ewes too fat. This is equally as bad as having them too thin.

Best Ration For Sheep

The kind and amount of feed to give the breeding flock depends on the kinds of feed on hand. Where alfalfa is plentiful the ration should consist chiefly of this feed. The addition of a small amount of silage is preferred, however. In feeding silage to sheep care should be taken not to overfeed. Two or three pounds daily is plenty. Never feed silage that is moldy or frozen.

Where the ewes are in good condition a ration consisting of alfalfa, silage, and some other roughage is sufficient. If the ewes are thin, a little grain should be added—from one-half to one pound daily should be sufficient. Plenty of clean, fresh water, and salt, should be before the sheep at all times.

Dry Quarters for Ram

The ram should be provided with dry, light, and well ventilated quarters with ample room in which to exercise. Care should be taken not to get him too fat. One should aim to feed the ram as cheaply as possible during the winter months, always keeping in mind the thrift and health of the animal.

Where good alfalfa and clover hay are fed, no grain will be needed unless it be for the thin and young rams. These should have a small grain ration daily of about one half pound. Two pounds of silage daily is sufficient to keep the animal in a vigorous condition, but some rough feed such as fodder and straw should be added to the ration. Where the former feeds are fed as roughness, without silage, a little grain should be added.

PUREBRED SIRES PAY.

Instances Illustrating the Benefits and Profits Resulting from Their Use.

If there is any place where theory and practice "link together" it is in the value of the purebred sire in livestock improvement. Theory says "blood will tell" and practice proves it.

There is abundant testimony to show that a grade or mongrel sire will "back-fire" and the offspring prove a degraded or nondescript animal. On the other hand, evidence is not lacking that the offspring resulting from the service of the sound purebred sire will not only be a valauble addition to any stud, herd, or flock and a credit to the judgment and intelligence of the breeder but will bring a higher price on the market.

Many concrete instances can be given illustrating the benefits and profits resulting from the use of purebred sires. Two or three cases from widely separated districts will show the greater advantages resulting from wise and careful selection.

Bred Scrub Mares to Purebred Stallions

There is the case of a man out west who began farming with a small number of scrub mares which he always bred to purebred stallions. The mares averaged about 1,200 pounds, and at prices prevailing today would barely bring $125 apiece. Some of the first colts sold at maturity at prices as high as $175, while fillies that were retained and in turn later bred to purebred draft stallions produced male and female colts, none of which sold for less than $160. Three mares sold at $235 each, and $450 was offered for one team. When it is remembered that this man started with scrub mares, it readily can be seen what the next crop of colts from purebred stallions will bring. In other words, this man is grading up by using good sires. His profits would have been still larger had he started with grade mares instead of scrubs. The results, however, show the value of the purebred male and his influence for improved livestock.

Profits from Purebred Mare.

Another instance is that of an Ohio farmer who several years ago purchased a purebred mare of one of the popular draft breeds, which has, in 11 years, produced 10 colts, 9 of which were raised. These colts increased this man's bank account to the extent of $4,930. The highest price received was $850 for a 4-year-old mare, and the lowest $325 for an 11-month-old colt. Included in the total given are $300 which this man estimates as the value of a weaning filly which he is keeping.

In a northern State a good purebred stallion and a grade were standing in the same community, the owner of the purebred charging a fee of $15, while the grade stallion stood at a fee of $10. A wise farmer bred his mares to the higher-priced purebred, while a neighbor, feeling that the cheapest was the best, patronized the grade. This is what happened: Two fillies sired by the purebred stallion could have been sold at $750, but the owner would not let them go at that price, claiming they were worth more. The other farmer sold two mares by the grade stallion for $200. One striking thing about this instance is that the mares owned by both of these farmers were of practically the same type and breeding.

CORN SILAGE CUTS BEEF PRODUCTION COST

The University of Missouri College of Agriculture has recently published data from two feeding tests which should be of interest to every beef producer in the United States, especially with the present high cost of feeds and beef. Seventy head of two-year-old steers were fed in two tests conducted during two different years: first, to secure data concerning the possibility of fattening cattle by the extensive used of corn silage without the use of additional corn in the ration; second, to study the importance of a high protein concentrate when combined in a ration of shelled corn, corn silage and alfalfa hay; third, to compare the relative value of old process linseed oil meal and cottonseed meal in rations containing corn silage. The first test was conducted during the winter 1915-16 and the second during 1916-17. The two tests lasted 133 days and 130 days respectively. Detailed information on these feeding tests will be found in Bulletin 150 of the College of Agriculture, Columbia, Mo.

In both years, the cattle which received a liberal allowance of corn silage with alfalfa hay and cottonseed meal or linseed oil meal made the cheapest gains. The steers in the first trial which received cottonseed meal, corn silage and alfalfa hay made a profit of $9.87 per steer. The cost of gain per hundred pounds, with the gain on hogs credited at $8 a hundred, was $10.15. The cost per hundred pounds gain on the steers which received linseed oil meal, corn silage and alfalfa hay was $8.57, and the profit per steer was $14.56.

During the second trial the cheapest gains were likewise made by the steers which received cottonseed meal, corn silage and alfalfa hay; linseed oil meal, corn silage and alfalfa hay. The cost of gain per hundred pounds on cattle, with the gain on hogs credited at $13 a hundred, was $14.28 in the case of the lot which received cottonsede meal, corn silage and alfalfa hay; and $14.06 in the case of the lot which received linseed oil meal, corn silage and alfalfa hay. The profit per steer was $11.59 and $15.62 respectively. With corn at $1 a bushel and silage at $6 per ton the profit per steer would have been $19.38 and $23.57.

The following is an extract of the conclusions drawn from the experiments by H. O. Allison, who conducted the investigations: " The records of feed as fed in the lots receiving cottonseed meal or linseed oil meal with corn silage and alfalfa hay show the possibility of fattening from three to four two-year-old steers per acre of corn. The average daily gains in live weight made by the cattle in the lots which received no corn other than that contained in the silage, while not as large as those in the lots where shelled corn was fed, were satisfactory for fattening cattle. The average daily gains in live weight on the cattle were increased by the addition of a high protein concentrate to shelled corn, corn silage, and alfalfa hay. The gain made by the hogs was greater in the lots which received linseed oil meal than in those which received cottonseed meal, both when combined with shelled corn and when fed without corn.

"The steers which did not receive shelled corn in their rations, although not the best, were sufficiently satisfactory to command a good price and to make a good grade of beef. As indicated by the net profit per steer the difference in the market price of the cattle was not sufficient to justify the feeding of shelled corn in the first

Secretary of the Treasury McAdoo Addressing 30,000 Soldiers at Camp Lewis, American Lake, Wash.

See Soldiers in the Making

On your tour of the Pacific Northwest this winter you can visit one of the biggest of the sixteen National Army Cantonments. Fifty thousand men are drilling at Camp Lewis, American Lake, (near Tacoma, Wash.)

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FARMERS

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trial. In the second trial this difference was sufficient to justify the feeding of corn at $1 a bushel and silage at $6 a ton, but it was not sufficient to justify the feeding of corn at $1.50 a bushel and silage at $11.50 a ton.

"Judging from the two tests it may be said that it is ordinarily advisable to feed a high protein concentrate to fattening cattle which receive shelled corn, corn silage and alfalfa hay. The net profit per steer was greater in both trials in the lots which received linseed oil meal rather than cottonseed meal, both when fed with shelled corn and without corn."

SAFEGUARDING THE BEEF SUPPLY

By Frank D. Tomson.

It becomes more and more evident each week that there is a well-founded concern in regard to the maintenance of the beef supply. Information is current to the effect that in the British Isles the government has decreed that it is more important that the acres available for crops serve the immediate needs of the country in this extraordinary time by producing grains for human food than for the maintenance of the herds. We are informed that 3,000,000 of acres are being put under the plow, sod that has in many cases never known the plow before; pastures that have raised grass and grass only for generations, and meadows of long standing will be converted into tilled fields that wheat, oats, barley, corn and other crops suited for human food may be produced. The argument is that the British Isles can better rely upon the United States and other cattle producing countries where land is cheaper and range more abundant. It is argued that dressed beef can be advantageously imported; that under the circumstances it will be a real economy to do so.

And so it is that the British Isles will promptly reduce its cattle supply, if we are correctly advised and there seems no doubt of it, and that the market of the United States beef producers is increased proportionately. Time will come when these pastures and meadows to be broken up must be again seeded and the fertility restored by means of herds and flocks, but that will be in the days to come after the war, and the replenishing process will be slow indeed.

That the cattle stocks of Germany, France and other European nations affected by the war are being steadily diminished has had official recognition and in the United States there is every indication that we are barely holding our own. The prices available to the beef producer induces him to sell closely. The cost of feed has reached such a high plane that the cattle producer declines to dispose of his surplus and hold his stock to the minimum. It induces many to dispose entirely of their herds in order to take advantage of the present available prices for hay and grains. The farmer is willing for the time being to draw and draw heavily upon the fertility of his soil, that he may take advantage of these alluring prices.

What does it all mean? It seems the depleting of our cattle supply. Or if not actual depletion, it prevents the increase of which the world now stands so much in need.

With this condition everywhere recognized and with the appetite for beef being encouraged among the men composing the armies of all the warring countries, it is inevitable that there will be a permanent and growing inclination to beef consumption after the war. The readers do not need to be told that beef consumption at present in America is being held to a minimum level at the urgent request of the food conservation department. Meatless days are becoming more and more frequent and we conform to the request the more cheerfully because of the high prices we are compelled to pay over the counter. But when these meatless days are no longer demanded and when prices settle a little, how eagerly we will anticipate the juicy steaks and roasts. We will not hesitate to gratify our appetites and beef consumption in America will tremendously expand. It is apparent to any observer that a decrease in meat prices of 20 per cent would increase beef consumption 50 per cent were the food conservers' restrictions to be removed, as in time they will be.

So the producers of beef cannot be otherwise than encouraged by the prospect for the demand that will continue not alone through the duration of the war, but for that long reconstructive period that will follow in its wake.

A BULL vs. GASOLINE ENGINE

Some folks let their bulls run at large and become a public nuisance. Why not put them to work? By using a tread mill, the bull could be used to pump water, turn the separator, grind the grain, saw wood, do the washing and turn the grindstone. The bull may be made to save the gasoline that Uncle Sam needs, and many a dollar that you need. The bull will be a happier animal with a much more genial disposition and if he does all these jobs he will be kept out of mischief. What power can be developed by the bull in a tread mill? If an 8-foot tread mill is set so that one end is 2 feet higher than the other, animals of different weights, and walking at the rate of 2 miles per hour will produce the following results:

Weight of Animal	Horse Power Produced
800 pounds	1.07
1000 pounds	1.33
1200 pounds	1.60
1600 pounds	2.13
2000 pounds	2.66

Some of the tread mills are made so that two or more animals can be placed in it. Under the conditions specified, an animal generates more power than if used on a sweep and for this reason may be overworked.

This can be regulated by reducing the incline of the mill.

Do not have an idle stallion or bull. Make them earn their living by saving you a lot of hard work. It will pay in many other ways too.—monthly news letter, Western Dairy Division.

NEED OF MORE HOGS

Alex Lotgren.

Profit and patroitism are combined in the call for more hogs.

The nation and the world needs more pork. Armies must be fed and pork is the staple meat for soldiers. It supplies both fat and protein and can be kept indefinitely.

Increased pork production is the solution of the universal demand for more meat, because pigs can be grown quickly and with great efficiency.

Every farmer should breed more sows for spring farrowing. It will be profitable to increase the size of the swine herd to the limit of equipment and feed supply.

The basis of this insurance of profit is that the government has virtually established a minimum price on live hogs of $15.50 per hundred weight. The price of next year's crop of pigs is scheduled at 13 bushels of corn per hundred pounds of pork.

Whether the war continues or not, the demand for pork will be heavy for several years to come. There is a serious world shortage. There are in the United States 5,000,000 hogs less than there were a year ago. With a minimum price of $15.50 and a probability of still higher figures there is nothing that will give greater returns than to speed up the swine department.

The words of Mr. Hoover, U. S. Food Administrator should be read with interest at this time he says:

"From two and a half years of contact with the German army I have come out of this horror with the complete conviction that autocracy is a political faith and a system that directly endangers and jeopardizes the future of our race—that threatens our very independence.

"The production of more fats is today a critical necessity for the preservation of these people (our Allies) and the maintenance of their constancy in the war. Every pound of fat is as sure of service as every bullet, and every hog is of greater value to the winning of this war than a shell.

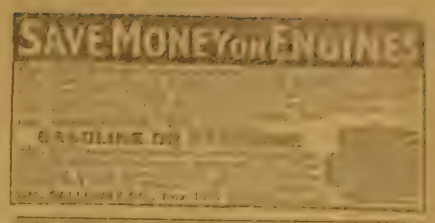
"My vision of war is not of an academic problem to be solved by discussion and guaranties of profits; to me it is a vision of brave, dying men and suffering women and children for service on whose behalf the greater exertion of the American farmer comes as a direct necessity and a direct plea. The American farmer who sees war as I see it needs no inducement and no inspiration but the thought that every spade full of earth turned and every animal reared is lessening human suffering and guaranteeing the liberty of the world."

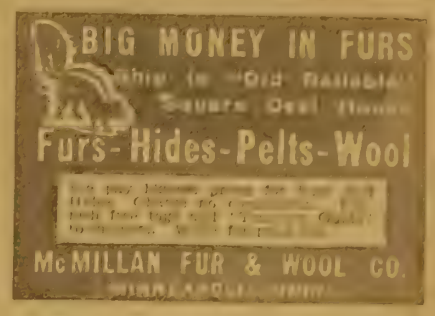
GOOD SCALES STOP GUESSWORK

It is surprising how many of us are guessing at what we do. We may be feeding a bunch of steers or a bunch of shoats, but how few of us know what gains we are getting each week. We guess at it, but our guessing is often wide of the mark. "O well," someone will say, "weighing the stuff each week will not make the gain any greater." That is all very true, but it will give us an exact idea how much we are getting for the feed used, and many times, if we but knew the exact truth, we could make some change in the feeding that would enable us to make greater gains, or, the same gains at less cost.

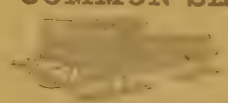
A set of five-ton wagon and stock scales do not cost the money they did twenty years ago, yet they are now much better made and do not require the deep, unsanitary pit the old style platforms did. After the scales have been bought, location is the all important thing. Too many times we see them stuck off in some odd corner, where they are almost impossible to get at with a loaded wagon, much less to use in weighing stock from the feed yard, at least not without a great deal of trouble that requires the combined aid of the entire family. Experience proves that when one must go to this much trouble to catch the weight of stock they are seldom weighed. If possible to so locate, the scales should be set so a short lane will lead both cattle and hogs directly from their yards to the scales, and all gates arranged so one man can easily weigh whatever stock is being fattened.

When scales are common throughout the country, so common that it is possible for any farmer to weigh his stock either on his own or a neighbor's scales before getting to market, the stock buyers are almost certain to give correct weights. Scales on the farm are the greatest incentive we have for honesty in weights on the part of stock or grain buyers, and it would be better if the number now on the farms could be doubled.—H. H.





COMMON SENSE BOBS



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We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

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Tickets solds—
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LIMIT—
Three months from date of sale.

Following Round Trip fares will apply from Salt Lake City, or Ogden. (Rates subject to war tax after November 1, 1917)

Denver	$27.50
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Pueblo	27.50
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St. Louis	53.70
Memphis	62.50
Chicago	61.50
Minneapolis or St. Paul	58.94

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Salt Lake City, Utah.

WHEAT PRICES LOWEST IN MOUNTAIN STATES

(Continued from page 5)

states, which includes Kentucky, Arkansas and Oklahoma and states south of them, have a deficiency of 26,680,000 bushels of wheat. Illinois, Wisconsin, and Michigan fall short 14,914,000 bushels, while the people of California will need 9,443,000 bushels of wheat extra. The west north-central states, the real American grain field will produce a surplus of 170,416,000 bushels, while Washington and Oregon will have 24,664,000 bushels to spare. After making a thorough survey of the wheat situation in the United States, the Federal Government concludes that 77,696,000 bushels can ordinarily be spared to our European Allies and more if we are economical.

An analysis of the above will reveal that the far Western States can supply Europe with approximately four-fifths of the amount of the surplus grain of the United States, while the Mountain States are now prepared to furnish the food Administration Grain Corporation with approximately one-half of the surplus wheat of this Country. Already organizations of wheat producers in the Plain States have objected seriously to the price they are receiving for wheat. If there is cause for complaint by these farmers, how much more justifiable would be the cause of dissatisfaction at present prices received for wheat grown in the Mountain States where the cost of production is as great as that of the Great Plains area. If the minimum price of $2.00 per bushel for 1918 number one Northern Wheat, or its equivalent at an interior primary market is to be the maximum, then it is anticipated that wheat produced in the Mountain States will decline and crops which offer greater net returns will be produced.

If wheat production is to be encouraged in the West then our farmers must have a more definite assurance regarding the actual price which they are to receive for their wheat. The minimum price must either be increased, the basic price at the Pacific Coast market increased, or a basic point established in the Mountain States which will govern the price of wheat grown in that region.

WHEN TO IRRIGATE APPLE TREES

Spring City, Utah.

Utah Farmer:

Would you please answer the following questions? How late in the fall had apple trees ought to be watered? How early in the spring? and why?

When can the most starch be gotten from potatoes in the spring or fall? Please answer as soon as possible through your valuable paper.

Respectfully,
James R. Nielsen.

Answered by Dr. M. C. Merrill, U. A. C.

The time when apple trees can safely be watered in the fall for the last time while the tree is in the growing condition depends very largely upon the length of the growing season in any particular locality. For your altitude I would say that no irrigation should be given your apple trees after September 1. If watered later than that the trees keep on growing and the wood does not have an opportunity to mature and harden up before winer comes on. There is then danger of it being seriously injured by the inclement weather of the winter.

After the leaves have fallen and the tree becomes dormant, however, it is sometimes advisable to apply water late in the fall in order to soak up the ground for the double purpose of taking advantage of the available water and also to prevent the trees from drying out during the winter. When this should be done depends largely upon the amount of water available and other local conditions.

In general it is a good thing to let the trees go as long as possible in the spring before applying water. This causes the roots to go down in search of water and the tree thus becomes more independent and self-sustaining. Of course the tree should not go so long that the growth of the tree and fruit is checked in any way, or until actual injury results. As a general rule water should not be applied in your section until the first of June at least.

The most starch can be gotten from potatoes in the fall. As soon as a potato is mature it contains is maximum amount of starch. During storage this starch is converted somewhat into sugar and the sugar is lost in the process of respiration which the potato carries on during the winter. If the potato is stored under a temperature of 38 degrees F. this conversion of starch into sugar goes on quite rapidly. Later the sugar may be reconverted into starch but by that time there has been considerable loss of carbohydrates.

Hurricane, Utah.

Utah Farmer:

Gentlemen:—Please advise me as to the best time to sow onion seeds for market onions, and the best kind of seed to sow, and oblige.

Yours truly,
J. W. Clark.

Answered by Dr. M. C. Merrill, U. A. C.

Onion seeds should be sown just as early in the spring as the land can be gotten in good condition. Before seeding, the soil should be in fine tilth, well pulverized, and in an excellent condition for the seed bed.

Some of the good standard varieties of onions are the following which can be recommended:

Yellow

Ohio Yellow Globe.
Prize Taker.
Southport Yellow Globe.
Yellow Globe Danvers.

White

Southport White Globe.
White Queen.
Silver Skin.

Red

Red Wethersfield.
Australian Brown.

Some of these are early and some are late varieties. I would suggest that you consult a reliable seed catalog for the purpose of determining just which of these varieties you prefer to plant.

FARMERS WILL WIN WAR

America's farmers will win the war for the free-world.

Their sons will fight with the American troops in the trenches of France, their wives and their daughters will aid in the Red Cross and in other patriotic moves.

While these members of the families are doing their bit, the farmer himself—and his hired man—will be behind the plow, the harrow, the drill, the cutlivator and the harvester, utilizing every possible hour to increase America's crops.

America must have more sugar, must have more pork, must have more beef, must have more butter, must more wheat, must have more canned goods. Surely no part of the country can do more than Utah toward fulfilling these great demands. Farmers of the Ogden district are showing patriotism in their determination to increase acreage for essential foods this year. Their patriotic step should be consistently followed by concentrated efforts to solve the labor problem for them before spring, so they can see their way perfectly clear to produce the greatest crops in Utah's history.—Ogden Examiner.

CLEANING SEED GRAIN

Winter days when farm work is slack, can be well utilized in cleaning and grading the small grains for spring sowing. This work should all be done before the spring rush in preparing the land and sowing the seed. Wheat oats, barley, and flax for seeding can all be improved by running the seed through the fanning mill at least once to remove the weed seeds, chaff, broken straws and light, shrunken kernels. The cleaned grain will run through the drill or other seeding machinery more evenly and thus insure a more uniform stand than can be obtained from uncleaned grain. Cleaning grain also eliminates most of the weak and diseased kernels, many of which may not grow, at all, or if they do grow are likely to produce small, weak plants, uniformly large, plump kernels germinate more evenly, produce stronger plants, and yield more than ungraded grain containing small, weak kernels.

Cleaning the grain also removes a large part of the weed seeds it contains . The preparation of the land for seeding destroys many seeds that are in the soil and thus helps to keep weeds in check, but the value of this work is largely lost if foul seed is sown. Weed seeds sown with the grain have the best of conditions for germination and growth, and the plants produced from them compete strongly with the grain plants throughout the season.

Although the small grain of the 1917 crop, is mostly of excellent quality for seed, yet it is well worth while to run this grain through the fanning mill at least once. No chances should be taken in sowing the 1918 crop. The very best seed available should be used. Increases in yield of from 2 to 5 bushels or more to the acre are often obtained from sowing clean, large seed, but a gain of even a bushel to the acre will mean big wages for the winter days spent in getting seed ready for sowing.

A GILT-EDGE INVESTMENT FOR EVERYBODY

In looking over those new War-Savings Certificates, the point to get in mind is this: Uncle Sam is giving the rank and file of us the best chance to save and invest small sums of money that has ever been offered in the whole financial history of the world. You can now buy the promise of the strongest treasury on earth to pay you five dollars five years hence (January 1, 1923). You can buy that note any time during this month or next year at a price ranging from $4.12 to $4.23. You don't have to figure interest, nor clip coupons, nor worry about the safety of your loan. Behind it are the wealth and the taxing power of the richest country ever known. Your coin is earning 4 per cent interest right along, and interest that is reckoned every three months. There may be savings banks that will do that much for you, but we are not aware of any. If it were not for that hundred-dollar limit on each purchase and the thousand-dollar limit on the total that anyone can buy, the big financial fellows would leave precious few of these War-Savings stamps for the rest of us. After all these years of trying to cut out gold-brick schemes which fakers aim at the poor man's pocketbook, the Government is now giving the men of small means a positive chance to show whether they know a good thing when they see it. You can buy these War-Savings Certificates at any post office and at many other places (keep your eyes open for the sign). By giving ten days' notice you will be able to get your five dollars (or more) on or after New Year's Day, 1923, at any post office where you can buy a money order. If you want to cash in sooner, you can do it the same way, but in that case you will get only 3 per cent on your money. Better see the deal through. If you have sound financial sense, you will tuck in some of the stamps (big or little) each pay day, and the time to begin is now.

Two things, therefore, are of the utmost importance—to bend every effort to increase production and to be equally alert and efficient in effecting savings.—Secretary of Agriculture.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

We are offering this meek some excellent farms in exchange for Salt Lake City or Weber county property. These farms have a first-class water right in the Bear River canal, are well improved, under a high state of cultivation, right close to Tremonton, one of the best towns in northern Utah. These places are strictly adapted for sugar beets, alfalfa, grain, fruit; in fact, anything that's grown in this district. Climatic conditions are good. Water for domestic purposes, modern conveniences and accessibility are all good.

80-acre farm, with an eight-room modern house, hot-water heat, bathroom with all the fixtures, water piped to the house and barn, nice lawn, shade trees, hedge fence, good granary, chicken house, hog pens and other outbuildings too numerous to mention. This property can be exchanged for a smaller place. Price $175 per acre.

40 acres, without improvements, lying in the same neighborhood, with the same water rights; has been into sugar beets and alfalfa. The place is fenced with a woven-wire fence and is right near the main canal. This property we are holding for $160 per acre and will accept property in exchange.

60 acres, under the same identical conditions, that we are offering, for the same price.

We have lying just under the canal 160 acres, all under cultivation. This property has been farmed for a good many years and is one of the best farms in the Bear River valley. This land has been used for dry-farm purposes, although it can be irrigated and lies in excellent shape for irrigation. This property can be exchanged for Salt Lake or Davis county property, and the price is $75 per acre.

In Cache valley some first-class farms, all irrigated, water for domestic purposes, under a high state of cultivation.

We also have in the Bear River valley some of the finest farms there are to be found in the state of Utah which we can sell on ten years' time and an easy payment down, ranging in price from $115 to $200 per acre.

KIMBALL & RICHARDS,
"Land Merchants,"
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Phone Was. 963.
FARM AND RANCH DEPARTMENT.

Save Grain For Human Food

Feed your livestock

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The best and cheapest food

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Write us about our used car snaps

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Easy Terms

RANDALL-DODD AUTO CO.

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FOR SALE

"VICTOR'S DEFENDER"

2nd Prize Junior Champion boar at Utah and Idaho State Fairs 1917.

A wonderful hog for 16 months old, with good bone, high back, and a whale for his age. Is in the way of my "Defenders" sows.

Also a few choice young "Defender" boars for sale. Orders placed now for spring pigs.

V. R. FISHER

Oxford Idaho

FOR SALE $750

Buick six, 7 pass. newly painted and new top. Tires good, one spare tire, tube, and rim; thoroughly overhauled.

R. A. WOOD

2269 McClelland Ave.

Salt Lake City, Utah.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER

Buhl Idaho

FOR SALE

15 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH

Buhl Idaho

FOR SALE

Purebred Holstein-Friesian Bull

Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndike 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

SELECTING THE HERD SIRE

(Continued from page 3)

of the dam, but if the bull has a uniform bunch of high producing daughters it means considerable. This method of course necessitates the purchasing of a bull which has been used, a bull which is a so called proven bull. This is the only sure way of finding out definitely what kind of an animal one is getting, and is the only sure, definite, rapid, efficient, and economical way of building up a dairy herd which will stand the war-time pressure and make money besides.

Breeders are too prone to use young untried bulls, which have no record of their own at all. They claim that old bulls are too mean, are apt to be diseased, and are not sure breeders. The second of these contentions is true to a slight extent, this must be watched in the purchase of a bull. As for an old bull being mean that is also true, but we must not forget that all bulls are dangerous and must be watched. It is true that old bulls are harder to transport than younger ones, but this should by no means prevent the purchase of a bull 6 or 7 or even 8 years of age if he has a uniform bunch of high producing daughters and a bunch which show an increase of milk and fat above their respective dams.

COLD WEATHER TIPS FOR TRACTOR OWNERS

As cold weather approaches one cannot be too careful about letting a motor freeze up. Hundreds of motors are frozen up every year by the first cold weather that comes, because the owners neglect to drain them out and think, "Ah well, it won t freeze hard enough tonight to do any harm." If a tractor must be run after freezing weather sets in, it must be drained every night immediately upon stopping the motor, or an anti-freezing solution used in the radiator.

In very cold weather we find that kerosene can be used very successfully as a cooling agent, also a solution of 33 1-3 per cent of denatured alcohol and water. If about 10 per cent of glycerine is used in this solution, it will prevent the alcohol from evaporating so fast.

Also as cold weather comes on, it is generally necessary to use a lighter oil in your motor, as instructed in the instruction book; otherwise, the motor will get so stiff nights that it will be practically impossible to start in the morning.

It is also necessary to prime heavier and in some cases use a higher test gasoline for priming than in warm weather.

It is also necessary to keep the plugs perfectly clean for starting, as moisture is much more apt to form on the plug and short circuit it in cold weather than in warm weather.

If you are going to lay the tractor away for a while, you should, when stopping the tractor on its last run, pour in a pint or more of oil into each priming cup and then shut the motor down immediately afterward. This oil will be drawn into the cylinders and will coat the valves and valve stems with an oil film which will protect them from rust.

In putting a tractor away, it should be looked over very carefully to see that all parts of the cooling system are drained thoroughly. If the tractor sits high at one end or the other, water may lodge in certain places and if freezing does not damage, it will rust the parts and in time cause trouble.

The user of a tractor will find it a paying proposition to house the tractor at all times when it is not in service. However, if it is not housed, there should be something placed over the stack of the radiator which will prevent snow and rain getting in, and a tarpaulin or canvas large enough to cover the motor complete used, as the motor should not stand out and take the weather.

The fuel tanks should be drained and protected so that it will be impossible for water to get into them. If the last time the tanks are filled with fuel a pint of cylinder oil to each five of fuel is put into the fuel tanks, it will leave an oil film on the inside of the tanks which will be very beneficial in prolonging the life of same.

Also in putting away a tractor the user should make a note of all parts that will be needed to put on the tractor when it is put into service again in the spring, for if you wait until time to use the tractor in the spring, you are not only liable to overlook some of these parts but there may be a delay in getting them promptly.

Every tractor should do its full duty, but it lies largely with the user as to how much service the tractor will give. Remember, it is the little oversights that are most expensive and cause the greatest delays.

WASTING TIME

"I've spent six days running around trying to get a man to pick my apples."

"How much work have you? How many days would it take?"

"About six, I guess."

"Has it ever occurred to you that it might save time to whirl in and do the job yourself?"

If you can't raise a pig, save one. You can do so by eating less pork.

GASOLINE CARE AND ECONOMY

Just now gasoline is in the limelight with other commodities the public needs. No one seems to know exactly why it is so high in price and continually going higher but aside from its cost there is always plenty to consider in regard to its storage and use. Much has been said and done for the guidance of consumers, from the compulsory painting red of cans to the recent incomplete federal inquiry about the soaring price.

Gasoline is, as everybody knows, subject to rapid evaporation. In this state the atmosphere of a close room can quickly be saturated with fumes. It is then that a spark or flame may ignite the accumulated gas and produce a disastrous fire. When gasoline is confined in a can where all openings are tightly closed it should be placed away from heat or direct rays of the sun. There is more power in gasoline that is stored under ground than from that which is kept in cans or other vessels above ground. Every time gasoline is passed through air, like pouring from a can, it loses the best part of its vitality. Inasmuch as all can not provide themselves with the underground system of storage but must depend upon the generally recognized form of keeping and buying the liquid in small quantities in cans, there is only one fact to be kept in mind and that is common sense in the use of gasoline.

If by any means you spill gasoline on the floor and the quantity is enough to endanger either yourself or the premises in case of ignition, get the air of the room into circulation as soon as possible. This can be done by opening the doors wide so it can circulate.

Keep children away from gasoline. Many fatal burns and great danger to property is due to this carelessness. Children who were too young to know better have been known to drink it. I heard of a woman who once by mistake filled her teakettle with it, but the discovery was made too late to prevent the fatal result. The insurance companies usually have a clause in their policies governing the storage of gasoline, and it would be a good plan to look and see if you are following their directions.

There has lately been proved to be a heretofore unsolved mystery regarding many fires that originated from the simple act of pouring gasoline through a chamois skin strainer, especially into automobile tanks. Careful research proves that by such a disposal of gasoline static electricity is generated which liberates itself by a leap from funnel to gas tank. In other words, static electricity is electricity that is at rest, but as it accumulates, and the tension becomes too great, is set free, the spark depending upon the tension. If you must use gasoline in this way of filling your tank, by all means see that you "ground" the current by allowing the strainer or funnel to rest completely upon the gas tank you are filling.

B. H. W.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars weighing about [illegible] pounds sired by Richards Pathfinder, 1st prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please.

ERIK W. OLSON

Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS

Provo Utah

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

Wellington Utah

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN

Ephraim Utah

When you answer an advertisement always mention the Utah Farmer.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

A Service Flag for Every Family to Make This a RED CROSS Christmas of Mercy

Your Dollar May Save the Life of a Soldier

On this, our country's first Christmas, in the most terrible of all wars, there should be a Red Cross Service Flag in millions—fifteen millions—of homes at least.

When your membership dollar is sent on its errand of mercy, a work of relief, which is the noblest thing in the world today, is aided.

Your Red Cross does not ask you at this time for large contributions.

It asks you to become part of it. Your Red Cross asks you to be one of ten million more Americans to give one dollar toward world relief.

The merest outline of Red Cross work could fill this whole magazine—go to your local Red Cross chapter—have your rightful share of service. The Christmas spirit is the Red Cross spirit. Let a greater Red Cross be America's Christmas gift to our boys and our Allies.

Will There Be a Red Cross Membership Flag in Your Window Christmas Eve?

You may feel ever so poor, but without your heart and your dollar, what would become of the wounded soldiers, the helpless women and children, the feeble old men in the war-stricken sections of Europe?

Perhaps your boy is not "over there" yet, but some other mother's boy is. If his life is lost because of an inadequate supply of hospital materials, and you have not contributed your "bit," responsibility is partly yours.

The call to YOU and to every other true American. HAVE YOUR DOLLAR READY and be thankful for the privilege of contributing your "bit" to the relief of thousands.

What is Your American Red Cross?

An all American, largely volunteer organization devoted to practical service to suffering mankind—in times of peace as in times of war.

Congress authorizes it.

President Wilson heads it.

The War Department audits its accounts.

Pershing in France approves it.

It is working for your Army—your Navy—your Allies.

It is working for you.

Join the Red Cross now—start your $1 on its errand of mercy. Be a member—it is your right.

Ten Million New Members by Christmas

The Publishers of The Utah Farmer have donated this space to the American Red Cross in the belief that its readers will heartily respond.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 29 LEHI AND SALT LAKE CITY, UTAH. DECEMBER 29, 1917

Special Call to All Farm Bureau Members

President D. D. McKay Ask All Farmers to Co-operate Together

Farmers are being urged to increase their production of food stuff to help win the war, they are called to do even more this coming year than ever before and at the same time they must meet some serious problems, the principal one seems to be the labor shortage. We believe the suggestions of President McKay are very good and we urge the farmers to meet together in their local bureaus and discuss the problems they will have to meet during the coming year and then to send a representative to the County Bureau, where another discussion will be given to all the problems of the county. From each county a representative is asked to come to Salt Lake City and there some definite action will be taken and recommendations made as to how we can best co-operate together in helping our nation with increased food production.

The following call has been sent to each county president of the various county farm bureaus.

Permit me to offer a few suggestions which, I believe, will be of interest to every farm bureau member.

We are engaged in a terrible war.

Our government needs our united support, and I am sure that we all want to do exactly what is best for the good of our country. Utah farmers have responded in the past in a splendid way, and we mean to continue to render every possible assistance in 1918.

In most districts rather definite crops have been grown in the past, and it will be unfortunate if we allow sound farm practice to be badly upset.

More pork and other meat products are wanted. Bread is a crying need. Canned goods are in demand. Sugar is a wartime necessity, and Utah is prepared, as only a few states are prepared, to respond to these demands.

Labor to manage our several crops is a very important problem. Various ways have been proposed to bring relief. Something definite must be done.

I am asking each county farm bureau, through its local bureaus, to discuss these problems in detail, and then, through their county organization, send a representative to a state conference prepared to join in a definite 1918 programme best calculated to serve our nation. This session will be held in the Hotel Utah in Salt Lake, January 15 and 16. . The first day will be given over to a discussion of labor, sugar beets and kindred subjects, and the second day will be devoted to wheat, pork, canning crops, organization and other subjects.

President McKay is very desirous of having a good representation at this meeting.

President E. G. Peterson of the Agricultural College may probably call all the county chairman together at this time.

An invitation has been sent to State Leader of County Agents H. W. Hochbaum of Idaho asking that a representation of farmers from that state be sent to the meeting of the Utah State Farm Bureau.

The State Farm Bureau meetings are to be held on the 15th and 16th of January. Commencing the next day January 17th and for three days the National Wool Growers' Association will convene at Salt Lake.

On January 14 and for one week the farmers will hold a Round-up at Richfield, January 21st to 26th, the Round-up will be held at Logan and at Cedar City February 4th to 9th.

For all these meeting special railroad rates will be given.

Farmers are urged to suggest remedies for the shortage of farm help and other problems.

Three means of securing sorely needed labor for the farms have been suggested.

(Continued on page 8)

A Call to Every Boy and Girl

How They Can Help Our Country Win the War

We are engaged in the greatest war of the world's history, our Country needs every penny which every man, woman, and child can save and lend, in order to feed, clothe, arm, and equip the soldiers and sailors of America and to win this righteous war in defense of American honor and the cause of democracy throughout the world.

If we are to win the war, we must win it as a united people. The savings of every man, woman, and child are necessary if we are to hasten the victorious ending of the war. War Savers are Life Savers.

AN APPEAL TO THE BOYS AND GIRLS

Treasury Department, Washington, D. C.

To Young America:

Nations have their childhood and their days of hard lessons just as children do. One hundred and forty years ago, when the first American Army marched to battle, our Nation was younger among Nations than you are among your fathers, your mothers, and their friends. Our Army had drummer boys in those days, real boys of 10 and 12, who marched as bravely and as proudly into cannon fire as their great chief, Gen. Washington, himself. Our Nation had little girls, who laughed and cheered and loaded muskets for their fathers, who fired through loop holes in their cabin homes, when the painted Indians charged to the very doors.

We are in the greatest war of the world's history and we must win this war. We can and we shall win, if the boys and girls of America say so, and mean it, and feel it, and live it, as the boys and girls of '76 lived and felt and helped.

The Nation needs that sort of boys and girls today. Not to beat our drums, nor to load our muskets, but to start a great work which must be done. It is the part of boys and girls today to give an example of self-denial and sacrifice, to teach fathers and mothers, to teach the grown people of the Nation, that we still have in every young heart the spirit of '76, when boys led our soldiers into battle and girls fought beside their fathers at the cabin walls. The lesson is "Thrift"—saving to the point of sacrifice—self-denial of everything unnecessary. If every boy and girl says at home tonight, "I will fight in this war," "I will save every penny and loan it to my Government to help save the lives of the big brothers of America," "I will try to teach every American I see to do the same"—then 20,000,000 homes, the homes of all America, will be filled with the spirit of '76, the spirit of the drummer boys, of the brave girls of those days. America will win again, as it has always won, through the splendid strength, courage and sacrifice in the hearts of youth, that today will teach the Nation the lesson of saving and serving which it must and will learn.

Through saving your pennies, nickels, dimes, quarters, and buying thrift stamps and then war-savings certificates, you will help your country and its gallant armies to win the war.

I know you will help.

W. G. McADOO,
Secretary of the Treasury.

When our fathers and sons and brothers were called by our Country to take up arms in her defense, you did not hear an individual soldier refuse to serve because his service alone would not win the war. Each man was ready to do his part. The great army thus formed is going forward to face the fire of battle and to risk everything for the safety and security of our homes and our families, and for the very existence of our Country.

These are the men for whom you are asked to save and lend your dollars.

A Country worth fighting for is a Country worth saving for.

To save money is to save life.

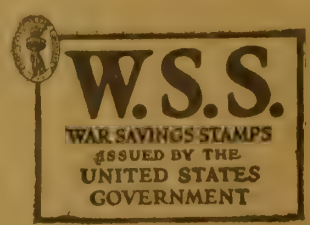
SAVE AND INVEST
in the
SAFEST
SIMPLEST
SECURITY

Buy United States government war-saving stamps. Guaranteed by the government. Issued in two demoninations, the 25-cent stamp and the $5.00 stamp.

On a "Thrift Card" you put sixteen 25-cent stamp and then you can exchange it for $5.00 stamp at post office, banks or other authorized agency by adding 12 cents in cash.

If you desire you can purchase a $5.00" war-saving certificate" for $4.12. The postmaster, bank or other authorized agencies will give you all the details.

Strike a blow for your country and buy some of the war-saving stamps. Start now.



The Publishers of The Utah Farmer have donated this space to help the local workers in the belief that our boys and girls will heartily respond.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION

VOLUME XIV. LEHI, UTAH, SATURDAY, DECEMBER 29, 1917 No. 22

Farmers and The Income Tax

By Alson Secor.

A Duty That Must Not Be Neglected.

Maybe heretofore you have not paid any attention to the income tax. It is time you did, because a failure to report your income before March 1, 1918 will cost you dearly—for the penalty is from $20 to $1000 fine and in addition fifty per cent of the tax due. If you fail to give truthful answers to the questions on the blank, the fine will not exceed $2000 or will not exceed one year's imprisonment or both, in the discretion of the Court. In case of sickness or absence from home you may get an extension of time by written application to the Collector of Internal Revenue, in which must be stated the reasons why the return cannot be rendered in the time prescribed by law.

If you dodge the tax this year and next, or for years to come, look out for the day of reckoning when somebody reports you and the government collects all back taxes with the penalties of five percent of the amount of tax due and one percent interest for each full month during which the tax remains unpaid. It is cheaper to pay every year, and not try to doge it.

Who Must Report Incomes?

Every unmarried person having a net income of $1000 or more, and every married person having a net income of $2000 or more in 1917, must report before March 1, 1918 to the Collector of Internal Revenue for the district in which the tax payer resides. It is necessary that you find out whether you have an income that will make you taxable under the new law. So you better get out your pencil and do some figuring.

The law defines income as profit, gain, wages, salary, commissions, money or its equivalent from professions, vocations, business, commerce, trade, rents, sales or dealings in property, real or personal, and interest from investments except interest from government bonds or any state, municipal, township or county bonds. Income from service as guardian, trustee or executor; from dividends, pensions, royalties, or patents, or oil and gas wells, coal land, etc., and income from all sources are taxable under the law, if the net income from all sources come to the sums named.

It is going to be some task for a farmer to find out what his income was. Few keep books, especially of the smaller items bought and sold. It is counted as sale if you take butter, eggs, apples, potatoes or any product you have raised to the store and "trade it out" for groceries, wearing apparel, or what not. Living expenses cannot be deducted, so you must figure the value of the farm products traded for something, as though you sold the products for cash. It is nothing to the tax collector whether you got cash or sugar for the product.

The same is true of real estate. If you sold part or all of the farm they figure as profit or income the difference between the cash value March 1, 1913, and the price for which sold, or the difference between its cost and selling price if acquired on or after March 1, 1913. Rents are considered income whether paid in cash or in part of the crop or otherwise.

What Is Exempt?

Of course there are exemptions. The single person who is supporting dependent children or dependent parents or crippled relatives who cannot help support themselves is considered the head of a family and has the same exemption—$2000—as a married person. Unmarried persons with incomes of less than $1000 and no dependents are exempt from the tax.

Where husband and wife both have incomes they can report together and claim one exemption, or report separ-

(Continued on page 15)

Food Figures of World Scope

Movement of Wheat From Farms.

Interesting figures compiled by the U. S. Food Administration on wheat marketing show that September is the month in which most wheat grown in the United States leaves the farm. From then on, the amount moved becomes less each month.

Studies of wheat movements for the last seven years indicate also that in years of small production, the crop is marketed relatively sooner than when the total wheat yield of the country is large.

Beef-Packing Activity.

October is the high month in the year for the slaughter of cattle and October, 1917, showed an increase over last year of 94 per cent. This announcement by the U. S. Food Administration verifies the belief among livestock experts that the fall of 1917 was a period of excessive activity in cattle marketing.

Wheat Crop in Argentina.

Wheat harvesting in Argentina was progressing favorably during the week ending December 1st, according to reports reaching the U. S. Food Administration. The probable wheat surplus exportable from Argentina is now estimated, however, at 133,000,000 bushels which is 40,000,000 bushels less than early estimates.

Siam's Rice Crop Suffers.

About 400,000 acres of rice in Siam have been seriously damaged by floods, resulting in the loss of about 279,000 tons of cadoy. The U. S. Food Administration, which makes this announcement, is constantly in touch with foreign agricultural conditions. A knowledge of the world's food supply is essential to proper control of foodstuffs in the United States.

Principal Hog Marketing Months.

More hogs are marketed in December than in any other month of the year, according to studies of hog marketing now being made by the U. S. Food Administration. During the hot months of the year, July, August and September, the shipments are only about one-half those of the winter months. After January, receipts at packing centers decline in each of the succeeding months until May and June when there is another increase.

The two high points of the year is December and June reflect the marketing of the two crops of pigs that are produced each year and are finished for market during those months.

American Appetites Largest.

Studies of the monthly per capita consumption of wheat, meat, fat and sugar in the United States and in European countries show that, in general, people in the United States eat the most per person. The German sugar ration for 1916-1917 was hardly more than one-tenth of our consumption and in meats we consumed almost six times as much as the Germans were allowed.

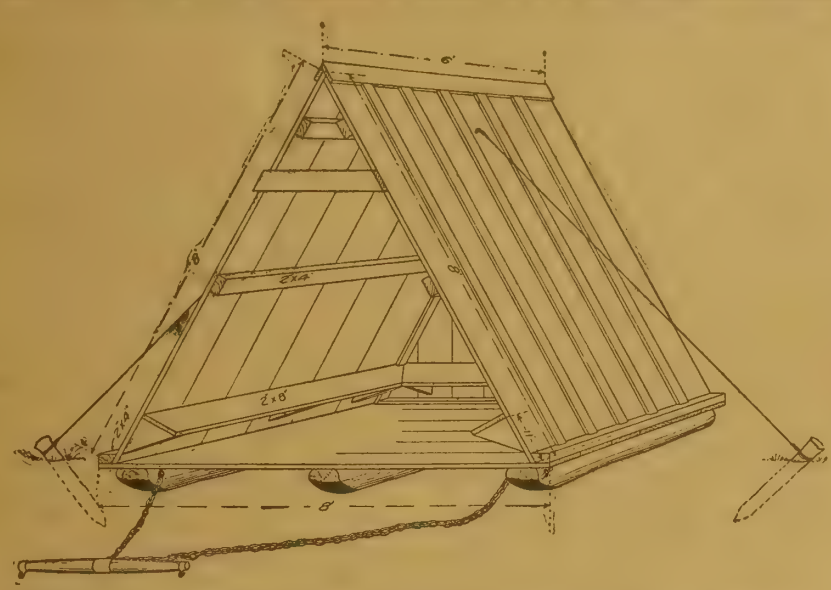
France is on a slightly more liberal diet than Germany, yet the French sugar ration is only 1.1 pounds per month per person as compared with 7.4 pounds in the United States. England, though commonly considered a country of hearty eaters, uses even less fat than France and is about midway between France and the United States as regard meat and sugar consumption.

In view of these facts just announced by the U. S. Food Administration, a voluntary reduction in the use of wheat, meat, sugar and fats here in this country should work no hardship on our people, and will be an important means of strengthening the Liberty armies and nations.

World Crop Summary.

A general idea of crop production the world over may be had from the report of the International Institute of Agriculture, which includes the principal countries. Six of ten staple

(Continued on page 7)



How to Make "A" Shaped Hog Pens

Delta, Utah.

Utah Farmer, Lehi Utah:

Will you please tell me how to make the "A" shaped hog pens and give the amount and size of lumber used in constructing one of them?

S. A. R.

The A shaped portable hog pen is 8 x 8 ft. on the ground with the roof made of 8 ft. material. It can be used for one sow and her litter or as shelter for as many as 3 mature pigs.

Three 2 x 4's 8 ft. long serve as joist (a) for the floor. These are shown by dotted lines on the floor plan. The floor is made by nailing 8 pieces (b) of 2 x 12 plank 8 ft. long upon these joist. A 2 x 10 plate piece (c) 9 ft. long is next spiked to each end of the floor joist. The bottom of this plate piece is even with the bottom of the joist, which allows it to project 4 in. above the floor. It also extends 6 in. at each end. These 2 x 10's are beveled to slope with the roof boards. The 6 in. extension protects the cornners of the roof.

The frame work of one end (all of 2 x 4 material) is shown by the dotted lines in the front view. The two rafters are cut at the bottom to rest on the floor and against the plate piece as indicated. At the top they are cut to receive the ridge pole. This is beveled above on each side to slope with the roof, which rests upon it. The frame work about the door is also of 2 x 4 material. Two pairs of rafters (one at each end) are all that are required. The roof boards are supported at the middle by a 2 x 4 (d) 8 ft. longest into the rafter as indicated and extending along each side of the pen.

The roof boards are 1 x 6 — 8 ft. long except the two edge boards which should be 1 x 7 to cover the siding on the ends. The roof boards are nailed 3 in. apart. The cracks are battened by other 6 in. boards, these extending only up to the saddle board as indicated in the sketch of the roof at the left. The saddle boards are one of 6 in. the other of 5 in. material.

The door opening is shown to be 2 ft. wide by 3 ft. 6 in. high. The door may either be hinged to open out or arranged to slide up and down. A door may be put in each end, though some prefer a door only in one end. In this case a window at least 12 x 18 in. should be put in the rear end up well toward the roof for ventilation. On cold nights this window may be almost or entirely closed.

This cut shows one side (the right) of the roof arranged so it can be raised during the summer and thus provide shade for a number of hogs. In order to accomplish this, the roof boards in place of being nailed to the plate piece (c) at the bottom are nailed to a 2 x 4 (e) let into the rafters. Neither this nor the 2 x 4 (d) is nailed to the rafter. The roof boards should be left free at the top also, and the saddle boards are hinged with 3 strap hinges (6 in.) as shown in the detail drawing at the left instead of being nailed together as usual.

Owing to the likelihood of the runners (f) rotting it will probably be best to bolt them to the structure so they can be renewed without difficulty.

If the pen is to be used for farrowing purposes a rail should be added to all four sides to protect the pigs from being crushed as their mother lies down against the walls. This protection can be made by nailing a 2 x 6 edgewise against the walls about 8 or 9 in. from the floor.

Bill of Lumber.

6 pieces	2 x 4	—16
1 piece	2 x 10	—18
4 pieces	2 x 12	—16
16 pieces	1 x 6	—16
7 pieces	1 x 8	—16
1 piece	6 x 6	—16
		472 ft.

Grinding Mills to Conserve Feed

F. B. Nichols.

A big use will be made of feed mills this winter in preparing the abnormally high priced crops for the most profitable feeding to farm animals. The grinding of feed increases its value when it is fed properly, and the margin of saving, on account of the high prices, is greater this year than the present generation has ever known. A saving can be made in this way that will be a real addition to the food supply of the nation.

The loss in the feeding of some whole grains is greater than is appreciated generally. In a study of this question at the Michigan station, Shaw and Norton found that as much as twenty-six and one-half per cent of the corn and oats may pass through cows undigested. It was found that four per cent of the corn and eleven per cent of the oats actually germinated, and an analysis showed that the grain had lost but a small part of its nutriment. It is possible that this was an extreme case, as there is some variation in the results at the different stations, but the experience of all feeders has shown that there is a considerable loss. This is well shown by the fact that practically all cattle feeders have hogs running after the steers. And Jordan, an authority on nutrition, states that grinding increases the digestibility of corn and oats from three to fourteen per cent, of corn alone seven per cent, and of wheat alone ten per cent.

Grinding pays for hogs if the animals weigh more than one hundred and seventy-five pounds, and it also increases the rate of gain and gives a better finish. That is the average of the experiences of hog raisers—of course, as with almost every other principle of feeding, there are some men who disagree. Sleeter Bull, of the University of Illinois, a specialist in feeding, believes that it pays to grind ordinary grain, like corn and oats, "for animals with defective teeth, very young animals, horses at hard work, and dairy cows if the cost of grinding is not too great." He also says that "wheat, barley, rye and emmer should be ground, crushed or rolled for all animals except sheep."

The value of grinding in preparing grain for dairy cows is greater than is appreciated generally. In a trial by Lane of the New Jersey station, two lots of cows were fed corn and cob meal and whole corn to test their relative value. The rest of the ration was the same. The cows fed on the meal ration gave nine and three-tenths per cent more milk than the animals fed on the whole grain.

Especially good results can be expected from the grinding of the grain sorghums, such as kaffir and milo. These crops have hard seeds, and a high proportion of the grain is likely to pass through the animals unless it is ground. Henry, of the Wisconsin station, says that "kaffir should always be ground or soaked before feeding." The acreage of these crops is increasing rapidly; in many of the main wheat producing counties of Kansas and Oklahoma, for example, they are grown exclusively, for they are more profitable than corn. This increases the opportunities of the men who buy mills.

Good profits are being made by many threshermen in operating feed mills in the winter, when their engines would not otherwise be used on productive work. It will be especially easy to work up a good trade this winter, and probably for several years, for the obnormally high prices have created a demand for anything that will increase the feeding value of the grain. The cost of a mill that is adapted to work of this kind is very moderate, and it will not make a very considerable addition to the investment of a thresherman.

In getting a feed mill, most men buy one that is adapted properly to the size of the engine they have. There are ten or more manufacturers of feed mills in the country, and most of these firms make mills of several sizes. One standard company, for example, manufactures a line that requires all the way from 1- to 20-horse power. The larger sizes will handle grain very rapidly—when 20-horse power is used one can grind about seventy-five bushels an hour. As a rule, one can buy these mills equipped for grinding hays such as alfalfa—a mill of that size will handle seven or eight tons of alfalfa a day. In many comunities there is a considerable demand for the grinding of alfalfa. A mill also will handle such materials as pea vines, kaffir in the head, and corn in the shuck. Some manufacturers equip their mills so excellent flour can be made.

Smaller machines, at very moderate prices, are available for farmers who wish to run them with little gasoline engines. If you have a 4- to 6-horse power engine you can get a mill that will deliver from fifteen to twenty bushels of grain an hour—and if you increase the feeding value of the grain from ten to fifteen per cent or more by this work, just figure out the profits for yourself.

Feed mills are but one form of the national conservation movement. Better returns from grain are needed—the high prices require this. It will pay to put it into a form so the greatest amount of nutrition can be obtained. This naturally requires the feed mill.— Am. Thresherman and Farm Power.

Safe

Sane

Always dependable.

Walker Brothers Bankers

Founded 1859. "A Tower of Strength"

SALT LAKE CITY

BIG HOLDUP IN IDAHO

By Paul Wenger, State Seed Analyst.

Hundreds of farmers in every section of the state untouched! Thieves caught and in some cases actually burned to death!

At this most strenuous time of all times with our nation engaged in war and our dollars assuming the size of quarters, the farmers should rise up as one man and with clinched fist and squared jaw say, "It must stop."

Poor seeds and noxious weeds are the boys we are after. Poor and noxious weed seeds are marching hand in hand with Kaiser Bill and every one knows what that means.

Our slogan today is the conservation of food, but we cannot economize on flour until the wheat is grown. Increased production is really a vital issue if the farmers hope to do their share in this great struggle for existence.

Production so far as we are concerned depends mostly on three things, beyond which we have but very little control.

First of these is the seed we use, second, the preparation of the seed bed and third, the attention and care we give the crop.

By far the most important of these is the seed we use and right here is where we farmers have been robbed. The sowing of poor seed will never give satisfactory results no matter how we prepare the seed bed or tend the crop.

In determining the value of seed it is well to take into consideration the following points:

1. Genuineness: that is, is the seed actually what it is represented to be? For example, is the spring wheat which you buy all spring wheat of a certain variety or mixed with winter wheat, which will be a total loss?
2. Place of origin of seed.
3. Condition of seed: purity, vitality.

If a man plans to raise pure seed it stands to reason that the seed to be used must be genuine and free from noxious weeds. When you buy the seed for your 1918 crop, be sure it has been tested for purity and germination at the State Seed Laboratory at Boise, Idaho. This test is without charge to farmers and will indicate the value of the seed offered you.

THE NEED FOR GOOD, PURE SEED

By G. F. Freeman.

The profits of the farmer depend as much upon the price received for his crops as upon the cost of production. One of the principal items in the cost of production is the yield per acre. If the seeds planted are faulty or of poor variety the yield will be unsatisfactory, no matter how well the soil is prepared or the crop is cultivated. It costs just as much to cultivate a field planted to a poor variety as to a good one. Differences due to poor or good varieties, even when the stand is perfect, have been known by the writer to make differences in yield, per acre, per years as follows:

	Poor Variety.	Good Variety.
Alfalfa	5 tons	8 tons
Corn	20 bu.	100 bu.
Wheat	25 bu.	60 bu.

These same differences apply to other crops such as barley, the grain sorghums and potatoes. Even greater differences occur between good and poor varieties of fruits and vegetables. When a good variety is mixed with a poorer sort, the yield is cut down just in proportion to the percentage of the poor variety present.

SAVED

"And, oh John, the lecture was so interesting! The gentlemen told us that what you eat you become."

"Huh?"

"Whatever you eat you become."

"Take that all-day sucker away from Tommy."

NOT "PROGRAMME"

A minister was asked to speak at a convention. "Upon what subject shall I speak?" he asked. "Upon spelling reform," was the answer. "Well, I can give you my views very quickly—it is to leave 'me' off the program."

MATTER OF YEARS

Editor—And you say this joke is original with you?

Humorist—Certainly.

Editor—Well, you don't look it.

Humorist—Don't look what?

Editor—To be four hundred years old.

A bull with a good beef form and a marked tendency to early maturity is a prime requisite in producing baby beef.

Put the farm machinery in first-class order during odd times this winter. An hour spent in repair may prevent later on a day of despair.

Remember the heavy snows of last winter?

Don't be caught napping!

The GOOD SENSE sled is simple and durable in construction, yet priced unusually low. We guarantee the GOOD SENSE to give long and unfailing service. It comes in 5 models.

The next time you are in Murray, drop in and let us show you the Good Sense. We can make immediate deliveries.

Miller-Cahoon Co.

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Pioneer implement dealers of Utah.

Common Sense Bob Sleds

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EAR TAGS PERFECT

Samples Free

ATTACHED INSTANTANEOUSLY

Name and Address. Numbered if Desired.

LEG BANDS for Poultry, Pigeons, Turkeys

SALT LAKE STAMP CO. Salt Lake, Utah.

The Farm Value of Patience

Farmers have always been very patient folk and they have now more reason than ever, perhaps, to manifest this, their traditional trait. Nothing is going quite right, from the clouds in the sky to the clouds of regulation of farmers' affairs on earth—for both are working just now in ways which do not seem to give crop producers a fair chance. Regulations which are promulgated with the utmost sincerity to serve patriotic and philanthropic purposes, seem sometimes to reach too far or to fall short and in that way impose hardships which were neither intended nor foreseen. Action which was intended to insure a farmer sale at a profitable price has sometimes made it impossible for him to sell at all. Adjustments made to secure a farmer a margin above cost of production have fallen short of his unavoidable outlay to get the crop. Such things do not make farmers feel very good nor very safe in increasing production, but they will go on to the limit of their ability for two very different reasons: one, because they are patriotic, enterprising and hopeful; second, because it is the inveterate habit of farmers to take chances. Their business makes them gamblers. Every time one of them puts a seed in the ground he bets that the clouds are wet, that a bug will not bite, that the market will want his crop, etc. And so when regulations make him more trouble than he had before he will bet that they will not continue to work that way or that something else will happen and help him to pull through and he will go on trying to make all the crops he can. If farmers had not been persistent, venturesome, and optimistic the world would have starved long ago.

Why a Farmer Should Be Patient Now.

And while the foregoing is generally true about the farmer's resolute and heroic attitude toward the execution of his business in the world, it is worth saying that there are particular reasons why he may go forth to his accepted duty with more hopefulnes sand satisfaction than ever before, perhaps, in the world's history. The greatest of these reasons is that he is rendering indispensable, patriotic service. Tnat he knows, feels and cheerfully accepts; it requires no exhortation or enforcement, for farmers as a class will recognize and discharge a duty if it strips them of all possessions. They will not seize a public extremity as a good time for a strike, which seems to be the measure of some people's idea of patriotic opportunity. They will finish their job if it is humanly possible. But there are other hopeful things than patriotism which may now encourage a farmer to hold to his traditional patience with things as they are. Let him think of these.

Certain public attitudes toward the farmer which he has hoped and striven for for generations have been assumed by the government and the people with overwhelming accord as war-measures. It is impossible to say how long they might have been deferred otherwise. Such a thing is the recognition of a farmer's right to count his cost and to base market value upon it. No matter what mistakes may be made, through ignorance or self-interest of others, in the enforcement of this principle; no matter what injustice or hardship may be immediately visited upon him by such enforcement, the recognition of the principle will never recede to its old ignoring. There will be continued advance of the principle until there will be no doubt anywhere that the basic price of a product should be fixed on the farm that produced it, just as the basic value of a factory product is, and it will be cost of production plus a profit. Legislation is trying to enforce this as a war measure for patriotic purposes; legislation will enforce it, indirectly perhaps, when the war is over, because it is seen to be essential to justice and fairness, to all the people. The trader will take his proper place as the servant not the master of distribution, and his doctrine of the divine right of a trumped-up "supply and demand" will fall into the pit with the other autocracies.

And there is another reason why the farmer can afford to be patient. His right and title to speak for himself is being more widely recognized than ever and he is learning to speak in a way to command public heed. It will not be possible to put off his protests and claims, as they have been in the past, with the slur that "the farmer has to complain; he is always growling about something." This popular dismissal of his fault-finding as chronic and fatuous was perhaps excusable because it was usually based upon no specific knowledge of the facts and embodied no intention of correcting existing evils. What is being done now by many groups of producers leaves no doubt that aimless growling is giving way to definite demonstration and effective insistence. This change should be persistently promoted and patiently awaited. —Pacific Rural Press.

THE MAN WHO WORKS FOR NOTHING

The war times have not especially helped everybody in the farming business. We all know men who are getting along no better today than they have been succeeding for the last twenty years. Some men have a great faculty of always laboring and getting nothing for their work. They seem to lack the business foresight that spells success, while others may be rated as efficient and all that but are lagging behind because they indulge in useless luxuries and are careless about paying their debts.

A farm cannot properly be called profitable unless it pays a fair rate of interest on the investment and gives the owner a reasonable wage for his labor, while, at the same time, the fertility of the soil is mai..tained. In every community there are farms on which the difference between the receipts and expenses is not enough to pay the interest on the investment, while the owner gets nothing for his year's work. In other words, he really pays for the privilege of working on the place. If he should sell out and loan the money at interest, he would have the income from his capital and he could then hire out to someone else and get pay for his labor.

This, however, does not mean that the ranch should be sold, for it is possible to make it pay, not only interest on the investment, but a good salary in these ripsnorting war times when everybody is supposed to be getting rich. In every community there are farmers who are managing their estates in such a manner that, regardless of the season, the returns are enough to pay all the operating expenses, interest on all the capital invested, and a good salary to the boss for his year's work. If the farm does not do this it does not mean that the owner is not working hard enough, but that there is something the matter with the system followed.

There are certain controlling factors or conditions in every community which determine the profitableness in farming. The only satisfactory way to determine what these factors are is to compare a large number of farms managed in different ways, and see which systems are getting the best results. By comparing the profitable and unprofitable ranches in different respects, it is possible to point out what there is about the profitable ones that cause them to make money. We notice that the fellow who succeeds is the man who does a good deal of reading and is quick to pick up the suggestions that come to him from time to time. The knowledge of the world is now assembled in such simple form that everybody can have the advantage of it and to be forearmed is to be forewarned in these peculiar times.—Field and Farm.

PUREBRED FOWLS PAY

W. A. Lippincott.

Purebred poultry on the farm pays in both satisfaction and profits.

Taking it as a whole, standardbred farm flocks are giving better results than are mongrel flocks, because they are receiving better care. The original cost is greater. It seems to be human nature not to give much care to stock that costs little or nothing.

When a farmer is proud of his flock of poultry one may be sure that it is receiving good care. This is in itself reason enough why standardbred flocks give better results, but it is not the only reason.

Since the numerous laying contests of recent years have turned interest toward egg production, many breeders of standard poultry are devoting their attention to increasing egg production of flocks by careful selection of mating.

While it is entirely possible to get good production with mongrel flocks, there is probably not a poultryman who is carrying on breeding operations with mongrels for increased egg production.

Although a considerable proportion of the standardbred poultry has not been carefully selected from the standpoint of egg production, the number of constructive breeders along productive lines is constantly increasing. These breeders offer to the farmer his only opportunity for improving his flock in respect to production.

Recent experiments seem to indicate that a pullet inherits high productive qualities from her sire. This means that the way to increase the productivity of a flock is to obtain standard males from reliable breeders who are selecting for high production. It must be understood that breeding for high production is comparatively new and has not been brought to so high a state of perfection as breeding for high milk production with dairy cows. Not every cockerel which is reliable breeder sends out can be guaranteed to sire nothing but high producers.

The farmer can get more money for poultry from a uniform flock when sold to a first class commission man than he can for a miscellaneous mixture. It is possible to build up a fairly uniform and attractive flock by buying purebred males each year and mating them with the descendants of a mongrel flock. A farmer will do better, however, by purchasing a few standardbred females along with a good cockerel of a high laying strain, and thus build up a standardbred flock, than by trying to grade up a mongrel flock.

It should be understood that one cannot have satisfactory production without great physical vigor. The pullets must be atcive and vigorous. A dozen standardbred pullets purchased at $1 to $1.50 each will form a nucleus for a large purebred flock which will more than repay the initial cost, if they are from vigorous stock.

TOO RISKY

"John, you ought to get in the aviation service," a man told a negro. "You are a good mechanic and would come in handy in an aeroplane. How would you like to fly among the clouds a mile high and drop a few bombs down on the Germans?"

"I ain't in no special hurry to fly, Cap," the negro answered. "When wese up 'bout a mile high, s-pose de engine stopt and de white man told me to git out an' crank?"

SENSIBLE

Jones was observed to be paying no attention to his instructor, who was telling a large class in agriculture how to protect plants from frosts, so the instructor said sharply:

"Jones, tell the class which is the best way to keep the March frosts from the plants."

"Plant them in April, sir," was the ready reply.—Bessemer Monthly.

It is not the mistakes we make that retard us, but our inability or unwillingness to learn the lessons that these mistakes teach us.

TACKLE BRANDED

Shows quality under every test.

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It's sold by a dealer in your town.

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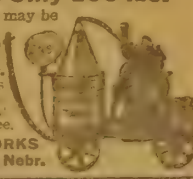
Light Weight
Cushman Engines

Built light, built right—for farm[illegible] engine to do **many jobs in many places,** instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no [illegible] but smooth running. **Throttle Governed.** Schebler Carburetor. Friction clutch pulley. R[illegible]ed.

4 H. P. Weighs Only 190 lbs.

Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is original[illegible] **cessful engine for Binder.** Also used on Corn Binders and Potato Diggers. [illegible] gines distributed from Salt Lake City. Engine book free.



CUSHMAN MOTOR WORKS
954 N. 21st St., Lincoln, Nebr.

For All Farm Work
4 to 20 H.P.

UTAH IMPLEMENT & VEHICLE CO.
Salt Lake City, Utah.

COUNTY AGENTS GOOD INVESTMENT

Land Utah Farmers Over Million Last Year.

The County Agricultural Agents of Utah paid 4500% interest on the money appropriated to support the work, according to the yearly report of Dr. R. J. Evans, State Leader of County Agents. Through the efforts of the County Agents and their organizations, a net saving for the farmers of Utah of $1,231, 489 was effected in 1917. This vast sum is itemized as follows:

To farmers conducting crop demonstrations	$ 83,178.00
To farmers who grew general crops under the direction of the agents	378,081.00
Through co-operative buying and selling of livestock	15,590.00
Through anti-sparrow campaigns conducted	27,785.00
Through increased production from lands drained	726.864.00

This vast saving was made in eight counties with agents working twelve months, one county nine months, five counties six months, and five counties three months, the equivalent of twelve agents on full time or an average of $102,625.00 for each county.

CARE OF HORSES.

1. If farm horses are turned out together, remove their shoes.

2. Make the horses clean up roughage; avoid all possible waste in feeding. If leguminous roughages are fed, a little straw or corn stover will be beneficial.

3. Be careful of mares in foal. Avoid strains or other dangers.

4. Bear in mind the care received by the colt the first 18 months of his life will be a big factor in his worth at maturity.

UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Hogs, sweets and wheat,s three products our government need and wants every farmer to do his best to increase the production of them.

Have you sent in your renewal to the Utah Farmer. Start the new year by sending in the money so that you will get the paper during 1918.

This is the end of the year, are you going to make an inventory and start the new year with keeping a record of all you do. Find out the cost of production.

The reports that are being made shows that Utah is going to do her part for the increased production of pork next year. It is a proposition, however, where every one must help. A hog on every farm and an increased number over 1917 for those who have been growing hogs is the way it can be done. If you can not buy a brood sow get in touch with the county agent and he will help you. He will have a list of those who have breeding sows for sale.

MARRYING FOR MONEY

Every boy and girl on the farm should marry for money. That is, they should marry for the purpose of working together and earning money with which to establish a good farm home, rear a family and educate them, and have a comfortable bank account ready to care for them when they wish to retire from active labor. This is a much better way of marrying for money than to seek a helpmate who is already "well heeled" and it usually turns out to be a better match. There's a lack of ambition and inspiration when a girl marries so much money she need not work and plan for the future. The happy young married folks are those who must work, plan and save together in order to obtain a home like their [illegible].

ABOUT OUR ADVERTISEMENTS.

[illegible] advertisements give the plain simple [illegible] the product some manufacturer is [illegible]. The information is valuable [illegible] you go to spend your money. You [illegible] the best to secure the most efficient service. The advertisements are a help to you, [illegible] you posted.

[illegible] goods are always reliable, they have the guarantee of the maker behind them. With an "off" brand no one is responsible not even the goods in many cases.

We were offered this week advertising to the amount of $665.00 and we turned it down because it was not according to the standard we have set for the advertising columns of the Utah Farmer. When we protect our readers in this way they can well afford to patronize the people who advertise in our paper. We stand back of them, thats why we are so careful who runs advertisements in our columns. Advertisements are for your help and we want to see you get the right kind of help.

RATS AND MICE

It is encouraging to hear the reports of war being waged against the rats and mice. Several of the large cities have carried out a campaign to clean up the homes and business districts and thousands of rats and mice have been destroyed.

What are the farmers doing to protect their crops, buildings and surroundings from these little enemies that destroy food stuff and waste it. Now is the time to go after them. It will pay to do it, the waste they cause is alarming and unless something is done to stop their increase the amount of waste will increase.

Save your food stuff—make your farm more healthy—by destroying all the rats and mice on the place.

THE SUGAR BEET COURSE

Modern education is adapting itself to the needs of the community it serves. The Utah Agricultural College in giving a special course on sugar beets is helping to serve the state, because the sugar beet industry is one of our largest branches of farming.

This short course was arranged primarily for the field men of the sugar companies, it is now open to any one who desires to attend.

An outline of the course is given in this issue and anyone who can spare the time should take advantage of this short course.

Sugar beet pests and other obstacles that come to the farmer in the production of his beets will be considered.

SAVE YOUR FARM MACHINERY

Build an implement house on your farm for the protection and care of your machinery. It will cost you nearly double what it would have done a year ago, nevertheless it will be profitable now. Machinery will cost you nearly double and this is another reason why you should care for your machinery.

The increased cost of machinery is a good reason why you should go over all the old machines very carefully and see if extras or new parts would not put them in shape so they could be used next year. The parts or extras should be ordered now. Save your machinery by better caring for it. Paint or oil all the parts during the winter time it will pay you.

Machinery factories are going to be working to capacity next year. There may be a shortage, in fact some certain kind of machinery is now hard to get.

It is hard to foretell the future but we can safely say to you repair and save all the farm machinery you can.

SEED SHORTAGE

If you have all the seed, both field and garden, that you will need next year, you are well prepared. If you do not have them, now is the time to secure them. Some people do not seem to realize the shortage of all kinds of good seed. Of course you will be able to buy some kind of seed but that is not what you want. Only the best should be planted.

Good seed is necessary to produce a good crop. With the labor shortage and many other unfavorable conditions to meet the need of planting good seed is very important.

We do not want to be understood as pessimistic in this matter but we can not urge to strongly the need of every one securing the very best seed possible and the amount they will need and to secure it right now. Do not wait until planting time. You may meet a disappointment.

Many reasons could be given why the shortage of good seed exists, we will not go into detail now.

Again we urge the need of securing NOW your seed for next year.

FARMERS GET THE BEST OF IT.

We so often hear that the farmer is getting the worst of it, that we are apt to believe it. As long as the farmer is willing to believe it and thinks no different it may be that way with him. Did you ever think that man for man, woman for woman, child for child, the farm folks are better of financially, physically and morally than are the city folks. We make our comparison too often with some man or woman who dresses well and spends their time doing little or nothing. Go to the city and in the early hours see the hundreds who travel 3 to 10 miles to work. Eight to ten hours a day with no time off, just a steady grind and after all this, they only make a decent living. Many people think farmers as a class get the worst of it.

The life of the farmer is more to be desired than the average city man. If you don't agree do a little investigating of city life and you will be more content on the farm.

THE HEN MUST HELP

It might surprise you to know the number of farms in the United States that have no poultry on them. To those who find the poultry business profitable no argument is necessary to show why a few chickens should be on every farm.

The hen is an economical producer of human food and in recent years has become a very important factor in the nation's food supply. The federal government feels that while the American hen is annually conrtibuting 3.5 billion pounds of food in the way of eggs and meat, she ought to contribute twice that much at the present time, and they are asking the farmers to double the production of poultry next year; in fact, the latest request is for an average of 100 hens per farm, the present average being only forty.

No poultry is kept on 24 per cent of our farms, in other words, on 1½ million farms there isn't a hen. These henless farms are asked to build up flocks of at least 40 hens each for next year. It is also desirable to increase the ducks and geese as much as possible.

Plan now to increase your poultry products. If you have not been raising any do your bit and have 50 to 100 chickens next year.

NEED OF MORE HOGS TO WIN WAR

There are still some people who do not realize the need of producing more hogs. They seem to think that the Food Administration are over doing the proposition.

No comes the report that we are to have porkless day and the government may ask us to not use pork at all in order that the meat and fats may be available for our soldier and allies.

It is a call to duty for every one who can do it, to raise more hogs. Breed your sows now and have the hogs ready to market next fall.

The rule has been, that where a shortage exists, the price has always been higher. With the government back of the promise that the price shall be high enough to pay the grower a profit the increased number should be enough to meet every need.

Some farmers have given their sons to the cause of liberty, others have given their money freely to Red Cross, Solider Welfare, and any cause to help win. The increased production of hogs is only another way to help win the war.

We can eat more lamb, mutton or veal and permit the other meats to be sent abroad to our soldiers and allies. A farmer who will not exert every possible effort to raise more hogs will be a slacker, because our government has made the call.

We believe that the farmers of Utah will answer the call and raise more hogs.

Special Course for Sugar Beet Men

By Geo. R. Hill, Jr., Director School of Agriculture, Utah Agricultural College.

Knowledge is power when it comes to growing sugar beets. The farmers realize this. So does the government and so do the sugar companies. The man who fails is the man who doesn't know how to meet the particular problems of sugar beet growing. Sugar beet culture is becoming more intensive. More acres of land are being planted in sugar beets than ever before. With that intensive culture have come conditions favoring insect pests of the sugar beet. The nematode worm is here. As a result of its ravages many acres of sugar beets were not worth digging last season. Sugar beet diseases are becoming more widespread each season. These problems must be solved if high yields of sugar beets are to be maintained. The farmer must know how or he cannot solve them.

Thorough preparation and management of the soil is necessary for high yield beets of good quality. Yield may be reduced several tons to the acre by improper methods in handling the crop or misuse of irrigation water. What we want is a state average of twenty tons to the acre, not twelve. To get it we must have knowledge.

The Utah Agricultural College is offering a special course on Sugar Beet Culture for the field men of the sugar companies of the intermountain country. The course will begin January 7, 1918, and will run for six weeks. The government's call for more sugar will be met by "up-to-the-minute" information for these practical field men who come in direct contact with the farmer. The sugar companies are enthusiastically urging their field men, and others desirous of becoming field men, to come to the Agricultural College for this course.

The course on sugar beet growing was given for the first time at the Utah Agricultural College last season, as the result of a request by the Utah-Idaho Sugar Company that the College should give their field men the "why" of the different cultural practices. This year the course is being broadened and the fundamental laws underlying sugar beet production will be treated in detail. Dr. F. S. Harris, Director of the Utah Experiment Station and Prof. George Stewart of the Department of Agronomy will have personal charge of the course. Seven experts in fields related to sugar beet growing will be brought in for technical information. Every effort is being bent toward making the course as fundamental and as usable to the practical sugar beet man as possible. The suggested list of topics to be conisdered in the course is as follows:

1. What the sugar beet is. How it grows and how it gets its food.
2. How sugar is manufactured by the sugar beet and how the sugar content is influenced by soil, irrigation water and other factors.
3. Soils and soil fertility.
4. Management of sugar beet soils.
5. Irrigation as particularly related to the sugar beet.
6. Sugar beet farm management.
7. Insect pests of the sugar beet.
8. Sugar beet Nematode worm and its control.
9. Disease of sugar beets.
10. Proper rotations for ultimate maximum sugar beet production.
11. Sugar beet seed production.
12. Selection and storage of mother beets.
13. Round table discussions by the field men regarding sugar beet problems.

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LENDING AND BORROWING TOOLS

William F. Purdue.

If every farmer owned all the tools needed in caring for the ordinary crops there would be very little borrowing and lending of tools. At one time such a thing was necessary. Tools were expensive, crops small, money scarce, and thus many farmers could not afford to owr all the necessary implements for carrying on their operations. A system of exchanging tools and work grew up and proved very satisfactory. But in these days of intensive farming and large crops such a system is behind the times save in exceptional cases.

There is one class of borrowers to whom we are always glad to loan our tools if we can conveniently do so, and that is to the poor fellows just starting in business for themselves who always have a hard time to make both ends meet at the best. As such a man gains in knowledge and means, however, it is well to kindly assist him to find needed implements for himself so that he too may become independent. Much satisfaction and good comes to both parties when this class is properly assisted.

In the case of those men who are well able to own all the tools necessary to do their work, borrowing is justifiable only when a new crop which requires special tools is being experimented with, or in case of a break or extreme rush. Not all implement dealers keep a full stock of repairs, and the farmer sometimes cannot wait until repairs come from the factory, if he can borrow his neighbor's tools.

Borrowing is objectionable for two or three reasons. The borrower too often fails to return the borrowed articles after he has used them. A few trips after loaned tools puts a damper on the charitable nature of any farmer. Then the tools are very often returned broken, misused or out of repair. The borrower sometimes forgets to oil all the bearings of a machine, which may cause serious trouble.

The necessity for borrowing will be much repaired if every farmer will make an honest effort to own and keep in repair all the tools, implements and vehicles he is likely to have occasion to use. Tools that are needed only occasionally may well be owned in partnership by two or three farmers. Indeed, under certain conditions, the joint ownership between neighbors of some of the farm implements is a plan that has much to commend it. There are a number of farm tools that can be owned jointly with entire satisfaction to both parties, and a considerable saving can be effected by this arrangement.

It is to the small farmer especially that the plan of joint ownership appeals to as offering a method of lessening the expense annually imposed by having to buy new tools. With the improved methods of farming that now prevail, all the tools required to run even a small farm represent a large investment of money. It is on the small farmer that the greatest expense, proportionally, for machinery falls. The man with 160 acres needs but few more implements to carry on his farming operations than does the man with only 80 acres.

But to insure always getting his crops in on time and caring for them properly at the right time, the small farmer must have a complete set of farming tools, even though he himself does not use some of the tools more than two or three days in the year. The rest of the year they are either taking up barn room or, if left outdoors, are depreciating in value as rapidly as are the same tools of a neighbor who uses them several times as much. Therefore, why not go into partnership with a neighbor who has about the same sized farm, and thus has about an equal amount of use for an implement, and make one implement serve two owners? Each can save some storage room thereby as well as some money, and by planning together each can generally so arrange his work as not to interfere with the other.

Always however in order that partnerships of this nature may not prove unsatisfactory to one of the owners or lead to any ill feeling between the men, care must be used to choose the right kind of partner, and then we must resolve that we will endeavor to be the right kind of partner for the other man. Each joint owner of an implement should endeavor to take the best possible care of any tool while it is in his possession and, as even two good machinists are generally unequally hard on the same machine, there should be an agreement as to whether repairs are to be paid for jointly or by the partner responsible for the breakage. There should also be an agreement as to which one is to store the implement when it is not in use and also in regard to lending or renting it to others. The joint ownership of implements generally discourages borrowing on the part of other neighbors for the reason that the average borrower does not like to interview each other in turn when he wants to borrow the implement. But whatever agreements are made between joint owners of tools they must be rigidly adhered to by both parties if pleasant relations are to be sustained.

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HOW TO MAKE "A" SHAPE HOG PENS

(Continued from page 3)

commodities show an increase for 1917 over average production for the period 1911-1915. These commodities are corn, oats, rice, sugar beets, potatoes and tobacco. The four crops showing a decrease from average production are wheat, rye, barley and flaxseed.

It is interesting to note that the decrease of 14.4 per cent in the wheat crop is compensated by the 14.1 per cent increase in corn, which is the principal substitute of wheat.

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When you answer an advertisement always mention the Utah Farmer.

Better Feed at Less Cost

Sunripe Stock Feed reduces your feed bill because you can feed less hay and get better returns.

SUNRIPE

Stock Feed

is concentrated nutriment. It is a scientifically balanced compound of oats, barley, cotton seed meal and sugar beet molasses. Order a supply now.

Utah Cereal Food Co.

Ogden, Utah.

Isn't it Strange? — — But Dairy Dan's Wife had the Right Idea!

The Sharples Separator Co., West Chester, Pa.

Dairy Dan was a regular feller—had a ten-cow dairy and a fixed-feed separator.

But he couldn't turn that fixed-feed separator up to regulation speed. He lost a dime's worth of cream anyhow—twice a day.

He hated to admit that this constant loss would have more than paid for a *modern* separator which skims clean at any speed.

But one day he discovered a hole in the pocket of his 6-days-a-week suit—commonly called overalls.

And he sure did give Maria an awful call-down for *her* carelessness.

She got peeved and showed him how he could mend *his* carelessness—by buying a SHARPLES SUCTION-FEED SEPARATOR.

Adv.

Snap Shots In The Feed Lot

Written for the Utah Farmer by J. C. Wheelon.

Factors of Feeding Stuffs

The proteins furnish materials for flesh, blood, skin, hair, muscles, tendons, nerves, horns wool, casein and milk.

Fiber for cellulose, etc.

Carbohydrates for starch, sugar, gums, heat, etc.

Fat—for fat is stored up for heat.

Ash, largely for bone.

The final value of a feed consists not of what is in it, but of what you get out of it, and feeds are certainly more valuable if they can be turned into beef and mutton, if the resulting animal sells for the present prices of from 8c to 12c per pound than for the 5c to 7c of a few years ago.

The careful feeder will realize that he is operating a factory and good business principles dictate that the by-products should be considered.

The manure resulting from feeding have a commercial value based upon the amount of nitrogen, phosphorous and potash it contains. It also has an auxiliary value in the organic substance or humus which is equal to the actual plant food elements it contains.

The average farm herd of dry stock that is wintered over and is composed of young tsock and grown cattle will be found to weigh about 850 pounds each as an average.

I gather from "Stewart's" feeding values that dry cattle of this weight require in their daily rations the following elements each.

Dry Matter Lbs.	Protein Lbs.	Carbohy. Lbs.	Fat Lbs.	Fuel Values Calories 1,000's
20.40	1.40	10.30	0.26	22¾

We will therefore, suggest a few compounds embracing some of the feeds and by-products raised in our inter-mountain districts and based upon these feed values along with the daily cost per head; also considering the value of the manure as gathered from U. S. Bulletin No. 21.

	Lbs.	$ per ton	c per day		
(1)					
Wheat Straw	20	$2.00	2c		
Beet Syrup	4	20.00	4c		
Alfalfa Hay	6	15.00	4½c		
	30		10½c		
		Manure	5c	=	5½c per day
(2)					
Oats Straw	23	5.00	5½c		
Beet Syrup	4	20.00	4c		
	27		9½c		
		Manure	5c	=	4½c per day
(3)					
Oat Straw	20	5.00	5c		
Alfalfa Hay	8	15.00	6c		
			11c		
		Manure	5c	=	6c per day
(4)					
Alfalfa Hay	23	15.00	17½c		
		Manure	5c	±	12½c per day
(5)					
Alfalfa Hay	12	15.00	9c		
Oat Straw	10	5.00	2½c		
Beet Syrup	4	20.00	4c		
	26		13½c		
		Manure	5c	=	8c per day
(6)					
Wheat Straw	20	2.00	2c		
Beet Pulp	30	1.50	2¼c		
Alfalfa Hay	6	15.00	4½c		
	56		8¾c		
		Manure	5c	=	3¾c per day
(7)					
Oat Straw	23	5.00	5½c		
Beet Pulp	30	1.50	2¼c		
	53		7¾c		
		Manure	5c	=	2¾ per day
(8)					
Siloed Beet Tops	10	8.00	4c		
Oat Straw	20	5.00	5c		
			9c		
		Manure	5c	=	4c per day
(9)					
Wild Hay	25	8.00	10c		
		Manure	5c	±	5c per day

We should remember that while these compounds do not balance exactly to the standards they are so near them that the animal's body can be depended upon to distribute the factors to a sufficient degree for dry stock.

That when corn ensilage is used in place of pulp or syrup about 12 pounds should be used.

That corn silage; beet top silage; pulp and syrup are all succulent feeds and no two of them should be fed in the same compound.

That syrup is a concentrated feed is equal to oats, corn, barley or wheat (pound for pound) and should be fed raw and in such manner that the animals get only their share for dry stock about ½ pound to 100 pounds of animal, one pound for work horses and 1 to 1½ pounds to fatling cattle.

That pulp should be spread upon the straw or hay and syrup is better fed by itself without being diluted.

That in these rations about one third of the straw is supposed to be wasted, and where pulp is spread on the straw the roughage can be reduced.

That all feeding should be done in a tight bottomed feed rack or manger.

That these feed racks should be made in sections (say 4 feet wide and 16 feet long) and on cheap skids so they can be moved every day and the feeding should be done on the field when the condition of the ground will permit so that all the manure can be saved to the soil.

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USE GILTS TO PRODUCE MORE PIGS

Young Animals Can Make Up Brood Animal Shortage—How to Determine Increases Needed.

With a shortage of brood sows throughout the country, gilts from the feed lots must be used to obtain the desired increase in the pig crop for 1918. Gilts will not produce as large litters as may be expected from mature sows, but their use in the emergency is advisable. Farmers using gilts should breed slightly above the prescribed number recommended in order to insure the requisite increase in pigs in the spring.

Only the failure of a State to do its part can defeat the organized national campaign for a 15 per cent increase in hog production next year, now co-operating with the States in putting the program into effect. From Missouri, which is asked for 50 per cent more hogs, to West Viriginia, to which is allotted only a 5 per cent increase, the State quotas have been carefully and logically worked out according to the corn and other feed supplies of the States.

If farmers do not reach the quotas set for them, a more acute shortage of pork products than now prevails will result, extremely high prices for hams, bacon and lard will prevail, consumers will suffer from the high prices and the shortage of necessary animal fats, and only a few will benefit. On the other hand, if the systematized program is carried out, a market will have been provided for about one-third of the 1917 corn crop, the demands on the country for pork products can be met without strain, prices to the producer should be remunerative under the assistance pledged by the Food Administration, and prices paid by consumers should be reasonable.

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SPECIAL CALL TO ALL FARM BUREAU MEMBERS

(Continued from page 1)

One of these calls for the conscription of labor through methods similar to those involved in the conscription of young men for military duty. Another calls for the extension of furloughs to soldiers so that they may work on the farms. And the last calls for the importation of freign labor for the period of the war. Farmers are asked to give their ideas and how they think these problems of labor can be met.

The time is short and immediate action must be taken by the local farm bureaus if every one is given a chance to attend the local meetings and help send a representative to the county meeting.

Time should be given so that all farm problems can be discussed and a report made of local needs. We think that the letter of President McKay should be read and each suggestion discussed. Here is a chance for farmers to express themselves and help work out their own problems.

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LABOR FOR THE FARMS

When the government begins to urge bigger crops than ever for next year the farmer will consider his experiences of this year and become discouraged.

Some time ago we called attention to the loss of thousands of bushels of potatoes in Idaho. It transpired that most of these potatoes were frozen on the ground because there was not enough labor at the right time to save them. And yet we believe we are not mistaken when we say that vast quantities of these potatoes were only a few minutes away by automobile from towns where patriotic men dwelt. If the citizens of these towns had organized to save the potatoes there would have been a much smaller loss. Instead the farmers were compelled to depend upon whatever migratory labor they could induce to work for them.

Next year the harvest season will present similar difficulties. The crops will be big, but the labor supply will be limited. The patriotism of the townspeople then will be tested. Now is the time for the townspeople to organize. In every town, village and hamlet the men who depend for their prosperity upon the prosperity of the farmers should begin to devise ways and means of making the next harvest a success. Working under the guidance of the state councils of defense they should prepare to provide labor for the farmers.

There is no reason why a hotel proprietor, the proprietor of a general store, the barber, butcher, the baker, the hardware man, the school teacher, editor should not do his "bit" in the fields. Organization is all that is necessary. The volunteer cannot go out into the fields looking for work. He must know just where he is to go, what he is to do and how much he will be paid. The volunteer must be brought in touch with the farmers of his community.

We do not pretend to advise how such organization shall be developed and perfected, but men familiar with farming conditions can organize volunteer labor in such a way as to increase vastly the supply of workmen for the farms at the right times. Tribune.

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I suppose not many fortunate by-products can come out of a war, but if the United States can learn something about saving out of this war it will be worth the cost of the war; I mean the literal cost of it in money and resources. I suppose we have several times over wasted what we are now about to spend. We have not known that there was any limit to our resources; we are now finding out that there may be if we are not careful.—President Wilson.

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THERE ARE OTHERS

One of the registrars in a Virginia country district tells a story of a negro man, obviously within the prescribed ages and of powerful physique, who turned up on registration day. The registrar had a good deal of difficulty in making the applicant understand the questions.

"Do you claim exemption?" he asked.

"What's dat, suh?"

"Is there any reason why you should not render military service—why you should not fight your country's battles?"

"Oh, yes, suh," replied the applicant, much enlightend. "I'se gun-shy."—Exchange.

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Be a real patriot. Don't produce less dairy products, but produce more.

LIVE STOCK

THE CARE OF SOW AND PIGS

Fred Smith.

The way to make money in raising hogs is to look after them.

Hogs count up into money fast these days. This being a fact, it is necessary to take good care of the pigs and see that there is no unnecessary loss in rearing this profitable crop. The greatest problem of the hog raiser is to keep his pigs free from indigestion and incident results. These ailments set the little fellows back and retard their development. Pig diseases come largely from insanitary conditions and many times from the lack of exercise of both sow and brood. If kept in pens, the beds should be disinfected at least one or two times a week and if running out in pasture all should have a dry place in which to sleep, especially in bad weather. All sour swills and insanitary foods should be kept from the brood sow when she is nourishing her young. These are bad enough for other hogs if too freely used.

The next care is to provide feed for the sow when the brood is young.

Some good nourishing food is necessary at this time.

Bran lightens them up a little and this and moderate quantities of tankage should be given the sow during the time the litter is making the largest demands upon the mother for their liquid supply of food. After the pigs begin to eat other food, the demands are not so great upon the source of supply and the sow will not need so much of a variety of food. It takes the best of judgment to tell exactly how much care and feed a sow and litter will need, but this comes by practice. The principle care is to keep the pigs growing and developing and not allowing them to have a backset. If a mistake is made at this time, it will lose money for the owner. Like every other kind of young, pigs must be started right and kept growing every day till they reach maturity. After reaching maturity, they will fatten better if their development has been uniform.

Nothing sells better than a lot of hogs of uniform size. It is well to save every pig in a litter for therein is the basis of more future profit than in almost any other kind of stock.

WHY KEEP SHEEP ON THE FARM?

Here are thirty reasons why sheep should be kept on the farm. H. J. Schnaitt was awarded first prize in a contest for the most accurate and greatest number of reasons for keeping sheep on the farm.

Why the average American farmer should keep at least some sheep upon his premises:

1. The initial investment in foundation stock is small.
2. Expensive buildings are not necessary.
3. Expensve machinery is not required.
4. Less productive land can be utilized.
5. Sheep will eat and relish almost every class of weeds.
6. By eating "ragwort" the source of "picton" cattle disease is eliminated.
7. By cleaning out the fence rows sheep destroy the winter protection of many injurious insects.
8. Due to the fineness of the mastication of their food, very few weed seeds are found in sheep droppings.
9. Sheep are of great value in clearing brush land.
10. Sheep are dual purpose animals.
11. Crop yields are increased by the constant and uniform distribution of rich manure.
12. The excreta of sheep is rich in nitrogren and potassium.
13. Less plant food is removed from the soil by sheep than by grain crops.
14. The cost of maintenance is small.
15. Sheep make profitable use of fodder left in corn fields after corn is harvested.
16. Sheep can be maue marketable without grain.
17. Wool and lambs are more easily transported than grain crops.
18. Rapid and frequent monetary returns.
19. Reasonably large percentages of profits under normal conditions.
20. Wool and mutton advanced in price before the war and a sudden drop in value is not to be expected.
21. Less labor is required on a sheep farm than on a grain farm.
22. Labor on the farm is more evenly distributed throughout the year.
23. Sheep require little care except during the usual slack periods.
24. Children as a rule like sheep and this is a good time to develop future shepherds.
25. A flock of sheep on the farm furnishes a fresh supply of meat at any time of the year.
26. Because of the comparatively low cost per animal, sheep are more easily improved than most other types of livestock.
27. Sheep are more prolific than horses and cattle.
28. The western sheep ranches are rapidly disappearing and it is up to the small farmers to make up the deficiency.
29. The population of the United States is increasing, while the number of sheep is steadily decreasing.
30. As a patriotic duty in the present world crisis, we must produce more wool and mutton.

THE FARMERS' MEDICINE CHEST

By Dr. A. S. Alexander, University of Wisconsin.

While the trained veterinarian should and no doubt will be employed wherever possible for all serious attacks of disease, the farmer must be prepared to know how to relieve sick and suffering animals when emergency requires.

Often the veterinarian cannot come "right away" and at such times a dose or two of appropriate medicine may save life, or prevent an attack from going to far before the veterinarian can prescribe. For these reasons we list needed drugs and offer a few hints as to proper use.

The drugs to be mentioned should be kept out of the way of children and where they will not freeze nor be exposed to direct sunlight. Each should be labeled, and if poisonous, that, as well as the name of the drug, should be plainly shown upon the label. Keep powdered drugs in tightly closed Mason jars, else they will soon lose their strength. Fluid medicines may be kept in the original bottles, or in stoppered bottles, such as druggists use. Also keep on hand a few clean quart, pint and half-pint and smaller bottles with new corks for each and some small tin boxes or wide-mouthed bottles for ointment. There will be needed, too, a glass graduate for the measuring of doses, scales for weighing, a glass funnel for filling bottles, a medicine dropper and a small mortar with pestle for mixing and powdering drugs. A flour sifter also comes in handy, as does a slab of plate glass and a spatula for the making of ointments. Experts also keep on hand some large and small gelatine capsules for the administration of drugs.

In giving medicines the following measures will be found approximately correct:

1 teaspoon holds about 1 dram.
1 dessertspoon holds about 2 drams.
1 tablespoon holds about ½ ounce.
1 wineglass holds about 2 ounces.
1 coffee cup holds 5 to 8 ounces.
1 tumbler holds about 8 ounces (½ pint).

The drugs to be kept on hand may well be listed according to their special work or purposes as follows:

Fever—Keep on hand powdered saltpeter to give for fever, founder, lymphangitis (milk leg) and garget. Dose, 1 to 4 teaspoonfuls in water or feed. In founder give 2 to 8 tablespoonfuls 2 or 3 times daily. Veterinarians also give small doses of tincture of aconite. This is a dangerous poison and should have a place only in the medicine chest of an expert.

Udder Troubles—Keep on hand fresh lard, or lanolin, and ½ pint each of fluid extracts of poke root and belladonna. Mix 1 teaspoonful of each of these with 2 tablespoonfuls of lard or lanolin to rub on the udder in garget. In severe cases add 1 teaspoonful of turpentine. Iodine ointment also will be needed for swellings and obstinate sores, and glycerine in which a little tannic acid is mixed for chaps and cracks; or balsam of Peru or compound tincture of benzoin for sores.

CONCERNING HOGS

War Importance of Meat.

Meat is a necessary part of human "balanced ration."

Meat, being concentrated, makes an ideal kind of export food.

Fat is not only an important part of the human diet, but is essential in the manufacture of explosives.

Fat plus lye makes soap and glycerine. Glycerine plus nitric and sulphuric acid makes nitroglycerine.

The Meat Situation.

Meat stocks are low. Dressed beef is in full supply now, but meat animals as a whole show a decrease. The United States is about 6,000,000 hogs short of last year's supply. Lard stock are 32 to 35 per cent lower than last year. The Allies are 32,000,000 hogs below normal. This European shortage totals one-half of the hog population of the United States.

Why Hogs Were Selected.

To make up the meat and fat shortage and insure the necessary future supply the United States Food Administration has selected hogs.

a. Almost all farmers have had hog feeding experience.

b. It takes less capital to increase the swine breeding herd than is true with cattle.

c. Hogs multply more rapidly and mature more quickly than cattle.

d. There is a 950,000,000 bushel corn increase, and a hay shortage.

e. There are not sufficient refrigerator boats to carry the required amount of export meat if it were sent as frozen beef, nor sufficient apparatus to carry it frozen from seaboards to cities or from camps to trenches.

f. Cured pork can be transported quite easily.

Government Action.

The Food Administration realizes that no farmer feels jusified or is justified in enlarging one branch of his business until given some assurance that such change will be profitable. Wherefore the government action.

These rules aim to:

a. Assure a fair profit to producer.
b. Assure a fair price to consumer.
c. Regulate and control the profit of packer and middleman.
d. Eliminate speculation.

The Action taken states that in so far as the government can help:

a. Price of average packer droves, Chicago, will not go below $15.50 per cwt.

b. Next Year's pigs will be valued and sold at a price per cwt. which equals the average value of each thirteen bushels of corn fed to those hogs.

c. The profits of the five big packers will be limited to 2½ per cent "turnover," or "clean up" with a maximum of 9 per cent for the year. This 9 per cent includes the interest on borrowed money.

d. The market will be a five day affair instead of a two day.

Rules a and b above are not guarantees backed by money; neither are they promises of the packers. They are merely the statements of the powerful Food Administration which means to be fair to the people; the statements of the government of a fighting nation which needs pork.

Methods for carrying out these rules:

a. The Food Administration, buying for the Army, Navy, Red Cross, Belgian Relief and Allies, purchases about 20 per cent of the total pork supplies. Such a customer has a powerful influence upon the market.

b. Food Administration suggestions to the packers stopped the decline in hog prices in November, although it remains to be seen whether it will in December.

c. If the packers are allowed 2½ per cent profit per dollar of sales they will be interested in making prices high and stretching each hog over as many dollars as the consuming trade will stand.

d. An abnormal demand and a diminishing supply.

In General.

All future markets are really an unknown quantity. The Government, however, is behind the hog market and should make it comparatively steadier than the others.

With corn as the yardstick for measuring hog prices the hog man should be safe.

Hog men in general are breeding more sows.

The government needs pork. As Americans we are the government. From that standpoint we should be ready to produce pork, profit or no profit. If the boys go to be the best soldiers they know how to be, let us be the best citizens and farmers that we know how to be.

The most economical way of shipping stock to market is in carload lots.

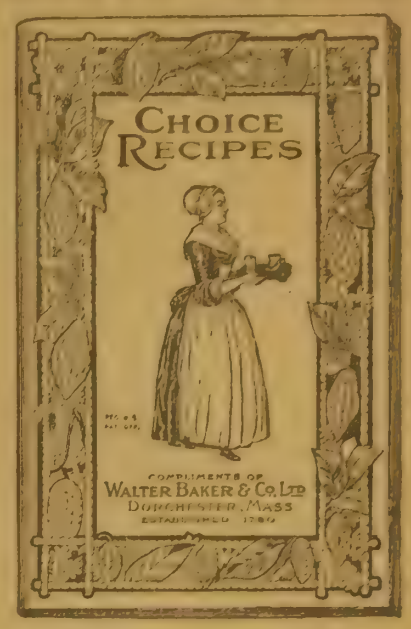
POLITE

"The escaped convict was a very polite fellow."

"How so?"

"He left behind him a note for the warden asking to be excused for the liberty he was taking."

SENT FREE



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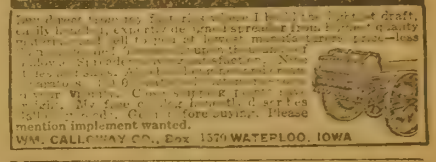


mention implement wanted.
WM. CALLOWAY CO., Box 1579 WATERLOO, IOWA

HOME

MANY USES FOR HONEY

William P. Kennedy.

From bread to icings and sauces, from muffins to preserved fruit, candies and popcorn balls, the housekeeper of today may use honey instead of sugar or molasses in her cookery with many advantages.

Cake in which honey is used will keep much longer than that made with sugar. A honey cake made with butter, for instance, will retain its quality until the butter grows rancid, and one made without butter will keep fresh for months. Honey is especially useful, therefore, in recipes where no butter is used.

Icings made with honey have the same advantages and have been found at the end of several months to be as soft and in as good condition as when first made.

Preserving fruits with honey is a novelty and delicacy.

Honey can be satisfactorily used for sweetening lemonade and other fruit drinks. Syrup of any kind is more convenient for this purpose than undissolved sugar and when charged water is to be added it has a further advantage since it has less tendency to expel the gas. It is the custom of many housewives to keep a syrup for this purpose, particular in hot weather, and a variety can be secured by occasionally using honey.

Nutrition experts say that though it has not been determined that honey has any great medicinal advantage, it has a strong value as a wholesome, useful foodstuff, well worthy of a more extended use, not only because it is agreeable and economical in itself, but also because it introduces a pleasing variety and thus makes the diet more appetizing and consequently more wholesome.

Since the principal ingredient of honey is sugar, it must be classed with the fuel foods, which supply the body with heat and energy, rather than with those whose function is to build and repair the body, that is, the "tissue formers."

It is worth remembering that a tablespoonful of honey, weighing about an ounce, furnishes the body the same amount of energy as would be supplied by one and one-fourth ounce molasses, or by five-sixths of an ounce of sugar, or by a little less than an ounce of such preserves as orange marmalade.

The difference between the wholesale prices of comb honey and of extracted honey are much greater than those between the retail prices. A pound of extracted honey in a jar usually sells at retail for about the same as the average section of cone honey which has a net weight of fourteen ounces. On the other hand, the wholesale price of cone honey is usually about fifty per cent higher than that of extracted honey. The reason for this is that the producer of cone honey does far more of the work of getting his product ready for the final market than does the producer of extracted honey. Now that extracted honey is usually pure because of government safeguards, and of good quality, the advantage of comb honey lies chiefly in its attractiveness to the eye.

When the housewife is about to substitute honey for common sugar some gauge is useful. A cupful of honey corresponds to a little more than a cupful of cane sugar, hence it is safe to estimate that a cupful of honey will sweeten a dish just about as much as a cupful of sugar. Besides the sugars there is about one-fifth of a cupful of water in a cupful of honey. Theoretically, therefore, in making cake one should substitute honey for sugar cupful for cupful and for each cupful of honey used one-fifth cupful less of milk or other liquid which the recipe calls for.

Some of the honey recipes tested in the government laboratories and approved by the nutrition and domestic science experts are given here.

Steamed Brown Bread.

1 cup yellow cornmeal, 2 cups graham flour, 2-3 cup honey, 2 cups sour milk, 1 teaspoon salt, 1½ teaspoon soda, 1 tablespoon boiling water, 1 cup raisins.

Mix together the meal, flour and salt; add the sour milk and the honey and then add the soda dissolved in the boiling water, and the raisins. Steam 3 hours in covered receptacles which should not be more than 2-3 full at the beginning of the cooking.

Bran Brown Bread.

1 cup white or whole-wheat flour, 1 teaspoon soda, ¼ teaspoon salt, 1 cup bran, ½ cup honey, 1 cup sour milk, ½ cup raisins, floured.

Sift together the flour, soda and salt and add the other ingredients. Steam 3 hours or bake 40 minutes in a slow oven. If the amount of milk is increased by half, the bread is more delicate and has a somewhat higher food value.

Honey and Nut Bran Muffins.

½ cup honey, 1 cup flour, ¼ to ½ teaspoon soda, ¼ teaspoon salt, 2 cups bran, 1 tablespoon melted butter, 1½ cups milk, ¾ cup finely chopped English walnuts.

Sift together the flour, soda and salt and mix them with the bran. Add the other ingredients and bake for 25 or 30 minutes in a hot oven in gem tins. This will make 16 large muffins.

Honey and Nut Sandwich

Mix the honey with pecan meats or almonds minced and make into sandwiches with small baking-powder biscuits.

Honey and Cream Cheese Sandwich.

Mix honey with cream cheese and use a filling for bread or baking-powder biscuit sandwiches. Chopped nut may be added to the honey and cheese if desired.

Butter Honey Cake.

1½ cups honey, ½ cup butter, 3 egg yolks, 5 cups flour, 2 teaspoons ground cinnamon, ½ teaspoon salt, 1½ teaspoon soda, 2 tablespoons orange flower water (water may be substituted), whites of 3 eggs.

Rub together the honey and butter; add the unbeaten yolks and beat thoroughly. Add the flour sifted with the cinnamon and salt, and the soda dissolved in the water. Beat the mixture thoroughly and add the well-beaten whites of the eggs. Bake in shallow tins and cover with frosting made as follows:

Frosting.

Grated rind 1 orange, 1 teaspoon lemon juice, 1 tablespoon orange juice, 1 egg yolk, confectioner's sugar.

Mix all the ingredients but the sugar and allow the mixture to stand for an hour. Strain and add confectioner's sugar until the fosting is sufficiently thick to be spread on the cake.

Soft Honey Cake.

½ cup butter, 1 cup honey, 1 egg, ½ cup sour milk, 1 teaspoon soda, ½ teaspoon cinnamon, ½ teaspoon ginger, 4 cups flour.

Rub the butter and the honey together; add the egg, well beaten, then the sour milk and the flour sifted with the soda and spices. Bake in a shallow pan.

Yellow Honey Cake

½ cup sugar, 2 egg yolks, 2-3 cup honey, ¼ teaspon cinnamon, ⅛ teaspoon cloves, 1½ cups flour.

Sift together the flour and the spices. Mix the sugar and egg yolks, add the honey, and then the flour gradually. Roll out thin, moisten the surface with egg white and mark into small squares. Bake in a moderate oven.

Honey Cookies.

¾ cup honey, 2-3 cup sugar, ½ cup milk, 3 tablespoons lard, 2 egg yolks, 4 cups flour, ½ teaspoon salt, 1 teaspoon ground cinnamon, ½ cup finely chopped almonds, ½ teaspoon soda or 2 teaspoons baking powder.

Bring the first four ingredients to the boiling point and allow the mixture to cool. Sift together the flour, cinnamon and soda or baking powder. Combine all the igredients. Roll the dough out thin on a floured board. Cut out and bake in a moderate oven on tins which have been greased and floured.

Nougat Wafers.

½ cup butter, 1 cup brown sugar, ½ cup milk, ⅞ cup bread flour, 4 teaspoons ginger or 2 teaspoons powdered cardamon or aniseed.

Rub together the butter and the sugar and add alternately the milk and the flour, sifted with the spices. Spread in a very thin layer on the bottom of an iverted dripping pan or on flat tins made for the purpose. Mark off into pieces about an inch wide and four inches long and put together in pairs with filling made as follows:

Honey Nougat Filling.

1 cup sugar, ½ cup honey, ¼ cup water, 2 egg whites.

Boil the sugar, water and honey together until the syrup makes a thread when dropped from a spoon. Beat the eggs to a stiff froth and pour the syrup over them. Put the dish holding the mixture in a place where it will keep warm but not cook rapidly. Beat it until it will hold its shape.

Honey Pudding.

½ cup honey, 6 ounces breadcrumbs, ½ cup milk, rind ½ lemon, ½ teaspoon ginger 2 egg yolks, 2 tablespoons butter, 2 egg whites.

Mix the honey and the breadcrumbs and add the milk, seasoning and yolks of the eggs. Beat the mixture thoroughly and add the butter and the whites of the eggs well beaten. Steam for about 2 hours in a pudding mold which is not more than ¾ full.

Honey Mousse

4 eggs, 1 cup hot honey, 1 pint cream.

Beat the eggs slightly and pour over them the hot honey. Cook until the mixture thickens. When it is cool add the cream, whipped. Put the mixture into a mold, pack in salt and ice and let it stand 3 or 4 hours.

Honey Ice Cream.

1 quart thin cream, ¾ cup honey.

Mix ingredients and freeze.

Currants.

Bar-le-Duc currants, an article of commerce often made with honey, sell for a relatively high price, in part, no doubt because of the large amount of labor involved in preparing them. The seeds are removed from the currant by a method which mutilates the fruit very slightly; the fruit is then preserved in honey or sugar syrup. Those who wish to take the time to preserve currants in this way will find that a convenient method of removing the seeds is to slit each currant and remove the seed with a needle. After this is done weigh the currants and take an equal weight of honey. Bring the honey to the boiling point, add the currants and allow them to cook two or three minutes, or until the skins are tender, being careful not to let the mixture boil violently because this is likely to destroy the shape of the fruit. If the currants are so juicy as to liquify the honey too much they may be removed and the syrup reduced to the desired consistency, after which the currants may be replaced.

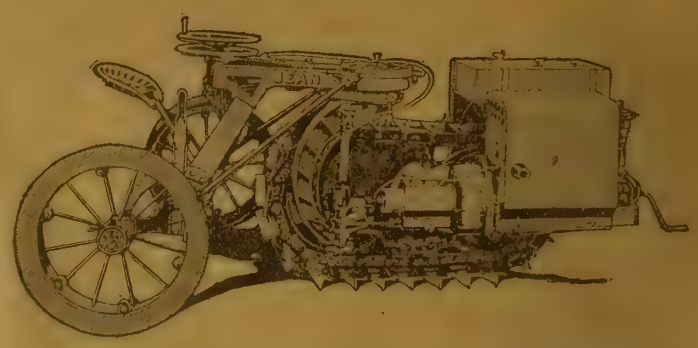
Cranberries.

A very good preserve may be made from cranberries and honey, which will remain in good condition for a long time. Take equal weight of cranberries, honey and water. Cook the berries in the honey and water until the skins are soft. Remove the berries and boil down the syrup until just enough remains to cover the berries. Pour into glasses and cover as you would jelly. The appearance of the cranberry is improved if it is pricked several times before cooking and if the cooking is low at first.

Strawberries

Take equal weights of strawberries and honey. Mix the two and dry in the sun, or preferably in a warm oven; put into carefully sterilized glasses and cover with paraffin.

Buy The Tractor



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Apples

2 quarts apples cut in small pieces, 2 cups honey, 1 cup vinegar, 1 teaspoon cinnamon.

Heat the honey, vinegar and cinnamon together and cook the apples, a few at a time, in the syrup until they become transparent. Pour over the apples the syrup which remains after all the fruit is cooked.

Honey Icing.

1 cup granulated sugar, ¼ cup water, ¼ cup honey, 1 egg white.

Boil together the sugar and water for a few moments and then add the honey, taking precautions to prevent the mixture from boiling over, as it is likely to do. Cook until drops of the syrup keep their form when poured into cold water. Beat the white of the egg until stiff and when the syrup has cooled slightly pour over the egg, beating the mixture continuously until it will hold its shape. This frosting is suitable to use between layers of cake. It is rather too soft for the top. It remains in good condition and soft enough to be spread for many weeks and therefore can be made in large quantities for use as needed.

Sauce for Ice Cream.

2 tablespoons butter, 2 teaspoons cornstarch, ½ cup honey.

Cook together the cornstarch and butter thoroughly, being careful not to brown them. Add the honey and cook the mixture until it becomes hard when dropped into cold water and until all taste of raw cornstarch has been removed.

Pudding Sauce.

If a small quantity of water be added to the above sauce its consistency is entirely changed. It becomes thinner and cannot be made brittle even by dropping into cold water. It is suitable for serving on various kinds of pudding.

Strawberry Sauce.

Strawberry sauce for pudding or boiled rice, which is usually made by mixing butter, sugar and mashed berries, is a good means of securing the strawberry flavor at times when berries are too high priced to be used in large quantities. The substitution of honey for sugar is practical. It obviates one of the chief difficulties of making this sauce,—the tendency to curdle.

2 tablespoons butter, 2-3 cup mashed strawberries, ½ cup honey.

Beat together the honey and butter. Add the strawberries slowly, keeping the mixture cool by setting the dish in water. Serve on boiled rice or cottage pudding.

Nougat.

3-8 cup honey ½ cup brown sugar, 1 pound almonds, 2 egg whites.

Boil the honey and sugar together until drops of the mixture hold their shape until poured into cold water. Add the whites of the eggs, well beaten. Cook very slowly, stirring constantly until the mixture becomes brittle when dropped into water. Add the almonds and cool under a weight.

The candy should be broken into pieces or may be cut and wrapped in waxed paper.

Honey Fudge.

2 cups sugar, 1-3 cup honey, 1-3 cup water, 2 egg whites, 1 teaspoon vanilla.

Boil together the sugar, honey and water until the syrup spins a thread when dropped from the spoon. Pour the syrup over the well-beaten whites of the eggs, beating continuously until the mixture crystalizes, adding the flavoring after the mixture has cooled a little. Drop in small pieces on buttered or paraffin paper.

Honey Caramels

2 cups granulated sugar, ½ cup cream or milk, ¼ cup butter, ¼ cup honey.

Mix the ingredients. Heat and stir until the sugar is dissolved. Then cook without stirring until a firm ball can be formed from a little of the mixture dropped into cold water. Beat the mixture until it crystalizes. Pour into buttered pans and cut into squares. Pecan meats improve these caramels.

Honey Popcorn Balls.

Heat honey carefully. Dip popped corn into the hot honey. Shape into balls and cool. Honey popcorn balls absorb moisture on standing in the air. They must, therefore, be kept very closely covered or reheated and dried before being used.

A HANDY LIST

Figures giving the food supplies of the world tell us that in 1918 America will more and more be called on to share with a hungry world what she can spare from her own board. This can be done by substituting other foods not needed for shipping. Sometimes it is hard to think of that substitute. Why not prepare a list to hang on the kitchen cabinet to be used for ready reference when in doubt. Let the list below grow with your experiments.

Meat Substitutes.

Poultry, Rabbit, Fish, Eggs, Cheese Dishes, Baked Beans, Bean Loaf, Nut Loaf, Bean Soup, Milk Soup, Chowders and Milk.

Wheat Bread Substitutes.

Corn Bread, Brown Bread, Oatcakes, Buckwheat Cakes, Hominy, Potato Biscuit, Rye Bread, Potatoes and Rice.

SAVE THE FOOD—WATCH THE WEATHER FORECASTS

Immense losses of food products, occasioned by freezing and other injurious weather conditions, occur annually that may, with proper precautions, be avoided. This is especially true of shipments by rail during the winter season. The Weather Bureau issues forecasts daily, and special warnings as occasion demands, giving information of expected weather conditions, including frosts, cold waves, high winds, and heavy rains or snows. During the winter season, officials in charge of nearly all Weather Bureau stations issue daily what are known as "Shippers' Forecasts," giving the minimum temperature expected to occur within a shipping radius of from 24 to 36 hours from the station. These forecasts are published on postal cards, and will be mailed to shippers on application to the nearest Weather Bureau office. Careful watch of these forecasts and warnings will often enable the shippers to avoid losses, either by expediting or delaying shipments or taking extra precautions to protect goods from injury. More definite information as to expected conditions may be obtained by calling up the Weather Bureau Office. No shipment of considerable length should be made without first ascertaining the expected conditions over the route. The occasion demands the utmost care to prevent losses of food not only as a matter of self-interest but as a patriotic duty. WATCH THE WEATHER FORECASTS.

WEEKLY MARKET REVIEW

Ogden, Utah.—Union Stock Yards, Ogden, Week Ending December 24th. Livestock market steady. Cattle—receipts, 1,714; market steady throughout week; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.50; fair to good, $6.00@7.00; canners, $4.00@5.00; feeder cows, $5.00@6.00; veal calves, $9.00@10.00.

Hogs—receipts, 1,362; market, steady; tops, $15.50; bulk of sales, $15.40.

Sheep—receipts, 4,588; market, steady; lambs, $15.00@16.00; ewes, $9.00@10.00.

Salt Lake City, Dec. 27.

North Salt Lake.—Cattle—receipts, 86; no change in prices.

Hogs—Receipts, none; choice hogs, $15.50@15.75; mixed, 160 lbs. and up, $15.00@15.50.

Sheep—No receipts.

Kansas City.

Kansas City,—Hogs—receipts, 4,000; steady. Bulk, $16.50@17.10; heavy, $16.90@17.20; packers and butchers, $16.50@17.10; light, $16.00@17.00; pigs, 13.00@15.50.

Cattle—receipts, 4,000; steady. Prime fed steers, $12.00@$14.50; dressed beet steers, $11.00@12.50; western steers, $8.75@11.75; cows, $6.00@9.50; heifers, $6.50@10.50; stockers and feeders, $7.00@11.25; bulls, $6.75@8.75; calves, $6.75@13.00.

Sheep—receipts, 3,000; steady. Lambs, $15.25@16.15; yearlings, $13.00@14.10; weathers, $11.00@13.00; ewes, $9.00@11.50.

BUREAU OF MARKETS BEGINS NATION-WIDE FOOD SURVEY

The most comprehensive inventory of food resources in the United States ever made—the war emergency food survey provided for by Congress—has begun, the first batch of the more than three-quarters of a million schedules or questionaries having been placed in the mails. The Bureau of Markets was commisisoned by the Secretary of Agriculture to carry out the big stock-taking enterprise, with the co-operation of other branches of the department. This survey will touch every dealer in food and food materials, every food manufacturer, and every holder of substantial quantities of foods in the country except the family, requiring them to report stocks which they have on hand December 31, 1917. A separate schedule will be sent to a representative number of specially selected homes throughout the country, and upon returns from these an estimate will be made for all homes.

Follows Preliminary Inventory.

The survey follows a preliminary inventory for a limited number of food items made August 31 last, results of which have been nearly all tabulated.

The aim of the major survey is to give the Government, producers, dealers, and consumers exact information of the quantities of the various important food materials on hand. It is only with trustworthy figures of existing food stocks as a basis, as was pointed out when Congress provided for the survey, that safe plans can be made for conserving and distributing foods already on hand and for producing the foods needed for next season.

Questionnaires Being Used.

The survey is being made by means of schedules or questionnaires containing questions and blanks for answers in regard to 86 items, covering more than a hundred different foods. Answers are to show the quantities of each item on hand an an estimate of quantities, if any, in transit outward by freight or express on December 31, 1917, and the quantities that were on hand December 31, 1916. The returns also will show the nature, organization, and size of the business of each dealer. They must be signed by the owner or an authorized official.

Penalties for Failure to Report.

Mailing lists have been prepared to cover the field as fully as possible, but some individuals and concerns who should make report of food materials held by them undoubtedly have been unavoidably missed. The Bureau of Markets, therefore, is asking each such individual and concern that does not receive a schedule by January 2 to write to the Bureau of Markets, United States Department of Agriculture, Washington, D. C., or to any of the many agencies of the bureau throughout the country for a copy.

The act of congress providing for the War Emergency Food Survey fixed a fine not exceeding $1,000 or imprisonment not exceeding one year, or both, as punishment for any individual or concern who willfully fails to make report when requested or willfully reports incorrectly.

Preserve Your Harnesses

After harnesses have been used all summer in dry and wet weather, they lose a lot of their strength and pliability. It is necessary, therefore, to use a good mineral oil, like

DUCK-BACK Harness Oil

before putting them away for winter or continuing their use. This oil has a healing effect on leather, and being a mineral oil, keeps rats and mice from gnawing harnesses. Order a can today from your dealer.

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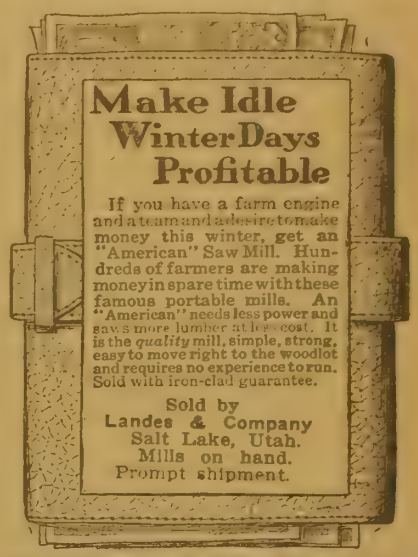

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DAIRYING

SUGGESTIONS FOR CALF RAISING

A. B. Nystrom, Washington.

The state experiment station makes the following suggestions in regard to calf feeding.

We prefer to take the calf from the mother as soon as dropped, never allowing it to nurse once. By this plan the cow soon forgets the calf, and the latter is much more easily taught to drink.

The mother's milk should be fed the first week, beginning when the calf is twenty-four to thirty-six hours old. The milk must be fresh and warm (about 95 to 100 degrees Fahrenheit), and must always be fed from a clean pail, preferably a tin pail. A wooden pail is too hard to keep sweet and clean.

The second week whole milk from any cow may be fed, and the third week, if the calf is in good health and growing nicely, the change to skim-milk may be begun. Do not make the mistake of feeding more skim-milk: simply because the cream is removed. The whole milk contains about as much protein as the calf can handle, and when skim-milk is fed in large quantities, the calf gets more than he can use, and as a consequence a sick calf is the result.

The change from whole milk to skim-milk must be gradual; from one-half to one and one-half pounds per day, depending upon the size and vigor of the calf. To an average calf, two weeks old, we would feed about twelve pounds per day of whole milk. The first day of the third week (or when it is desirable to begin to make the change) the daily feed would be eleven pounds of whole milk and one pound of skim-milk; the second day, ten pounds of whole milk and two pounds of skim-milk, and so on until the complete change is made. It is just as essential to feed the skim-milk warm as the whole milk, although when the calf gets larger and stronger, six to ten weeks old, a gradual change to cold milk may be made.

Allow the calf a clean, airy paddock or box stall in which to get exercise. Give him some well cured hay, such as timothy and clover, or timothy alone, as soon as he will eat it, which will be when he is from three to four weeks old. Alfalfa in small quantities may be fed, but with this roughage there is danger of the calf's eating more than he can properly digest.

Grain may be fed as soon as he will take it, and for this purpose a mixture of bran and crushed oats or crushed oats alone is recommended.

Calves should be fed in a stanchion so constructed as to prevent them from sucking each other's ears after they have drunk their milk. The feeding of grain by placing a little before them after every meal of milk will also discourage the desire to suck the ears of the calf in the next stanchion.

The secret of successful calf raising lies in keeping the calf's digestive organs in perfect shape. To do this, avoid sudden changes, either in feeding or management. Feed warm milk from clean pails, but do not feed too much. Clean, sunny quarters, with exercise, and clean and wholesome food, fed in proper amounts at the proper time, will lessen the number of weak calves, and produce heifers which will develop into vigorous cows.

REARING THE CALF

There is no doubt but that the welfare of both mother and offspring is best secured by allowing nature's method to prevail, viz: Let the cow bring up her own calf, but in these days of the cheese factory and creamery, it is customary to remove the youngster at birth and bring it up on the pail. In large pedigree herds, especially in the beef breeds, it is quite customary to allow the cows to rear their calves by suckling, but the dairy farmer cannot afford to follow this practice.

As soon as it is born the calf should be placed in a pen and well rubbed with clean, dry straw to help to dry it. Some of the first drawn milk of the cow is placed before the calf, and the calf's head is gently placed in the bucket, and its nose pressed downwards until touches the milk, the finger tips being placed on the nose, just out of reach of the youngster sucking at them. If the nose is kept in the milk, the calf, in its attempts to suck the fingers, will suck up the milk at the same time. If this performance is repeated a few times, the youngster will soon commence to help itself without any assistance or coaxing. On no account should the calf be allowed to suck the cow from the very first. No good purpose is served by allowing it to do so, and it only makes it harder to teach it to drink from a pail.

Three meals a day is the usual allowance until the calf is two or three weeks old, during which time skim milk is gradually introduced to take the place of the new milk, and at the end of two or three weeks the calf will not be receiving any whole milk.

Every effort should be made to get the calf to eat other foods at an early date, and by the time it is two months old it should eat freely of crushed oats and bran, linseed meal, and good clover hay. If this solid is gradually introduced the calf will soon begin to look for it, and by the time it is weaned it will be quite able to exist without milk.—I. B. Henderson.

WHAT IS ACCOMPLISHED BY TESTING COWS

1. The test not only points out the poor cows, but the good ones also. Many cows considered only average are found to be the best in the herd when real records supersede the guess system.

2. Under the guess system, and in the absence of records, sentiment is a strong factor in selecting the cows worthy of being retained in the herd, also the cows from which heifers are to be kept. A cow's disposition and temper enter seriously into the matter. With accurate records such minor things are overlooked in the real producers, and a bond of friendship develops between the milker and the producing cow.

3. Persistency of milk flow, the one qualification that outranks all others in worthy cows, is very difficult to recognize under the guess system, but it is easily brought to the owner's attention through the test.

4. The test records are very valuable in later years as references, both in feeding and managing the herd.

5. The test develops better feeders, deeper thinkers, better dairymen, and better dairy methods. It checks overfeeding as well as under-feeding, and insures greater net profits.

6. The monthly visit of the tester, the conversation held with him, and the tendency it creates to increased discussion with the neighbors, help to broaden the mind, induce reading and studying—in fact, make better dairymen and better citizens.

7. Cows from regularly tested herds sell for more money, and so do their offspring.

8. The hired men take greater interest in their work.

9. The most important of all is the fact that no other factor so interests the boys and girls and attaches them to the farm and the dairy as that of accurate and systematic records. For boys and girls nowadays are taught definite things in a systematic way. They would like to have a chance to apply on the farm.

VALUE OF GOOD SIRE

One sire in the department of dairy husbandry's pure-bred dairy herd has sired 5 heifers whose butter fat production is 823 pounds greater than that of their dams. At 40 cents a pound, this butter fat makes an increased income of $329 a year from 5 members of the herd, an increase due entirely to an excellent sire. If one had to borrow the money to buy this sire, this increased income would pay interest on $5,490.30.

Remarkable as this increase seems, it cannot equal the improvement that a good sire will make in an average herd. The dams of these heifers were already high producers, and consequently infusion of high-producing blood would not raise production so much as in the average herd.

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IMPORTANCE OF GOOD SEED CORN

There has been a great deal said about selecting seed corn from the stalk. The practicability of this advice is no joke, but on the other hand, a very important thing to do. Many practices are followed in saving seed corn. Some pull it early as recommended, others put a box on the wagon and throw the good ears in there when husking. It seems, however, that the greatest number of farmers simply go to the crib in the spring when they are ready to plant and get their seed then. As Sam Jordan, the Missouri corn man, says: "There is only one worse way to get seed corn, and that is to get it after night from your neighbor's crib." If neither of the first two practices can be followed consistently, then the very best proposition for any farmer is to buy his seed from a reliable grower. Good seed is worth all it costs, as it has been selected and stored so as to be strong in germinating power. Before returning to the original subject, let me say further that it is a poor proposition to take the best of care of a poor variety. The variety tests of every experiment station show conclusively that there is a wide difference in the adaptability and yield of varieties. Write to them and ask for information about corn varieties, that is what they are for, to serve you.

Now, if you are sure that you have a good variety of corn, take every precaution to keep a supply of good pure seed. Corn is a home loving plant and yields better year after year in a given locality. Most corn is mature now so take a sack or a basket in the field with you and select enough seed for planting next spring.

The main advantage that early picking has over saving when husking, lies in the fact that you select the stalk as well as the ear. A good stalk is of medium height, about seven or eight feet high. It is important to see that each ear is sound, well matured and has a cob of only medium size. A big cob causes the grain to stay wet so long that winter freezes kill a large percent of the germs. Maintaining the length of the ear is one of the most potent factors in keeping up and increasing the yield of corn. Unless early maturity is especially desirable, it will not pay to select indiscriminately the earliest ears to ripen. These ears are generally shorter and a few years of such selection will not only increase the earliness of the crop, but at the same time decrease the length of ear and decrease the yield. Let me say again, 'Grow as big corn as your season will permit." It takes only about fourteen good ears to plant an acre, so the field selection isn't much of a job. When it is taken in, however, this corn cannot be piled up, but must be laid on racks or boards away from mice and so that the ears do not touch. Perhaps the easiest way is to hang the corn up in strings.

Is it too much trouble? Nothing is too much trouble that will pay for itself. Down in southwest Missouri an experiment station man tried this test: He secured seed corn out of the planter boxes of about a dozen men while they were planting their corn. The same size plot was planted on a field in the neighborhood from each lot of seed. It was thinned to the same stand and treated alike in every way. When the corn was husked, however, one plat stood out head and shoulders above the rest. The yield was so much better that upon figuring the value of the actual corn produced, all the men in the neighborhood could have paid this one man $52.00 a bushel for seed and made as much money as they did make. Why? He had a good variety and well selected, well cared-for seed. Is it too much trouble?—F. H. Demar.

A "MILK TOAST"

"Drink to me only with thine eyes
And I will pledge with mine"—
There's not a drop in the wide, wide state,
And we cannot pledge with wine.

"Leave but a kiss within the cup,"
Where yesterday there fell
The bubbling spray that symbolized
The dreams your charms impel.

"Drink to me only with thine eyes"—
Soberly love and die,
Or pledge our troth in a glass of milk;
For it's dry, my love, it's dry.—Exchange.

Problems In Handling Tuberculosis

This Terrible Disease can be Eradicated When Rightly Managed.

(We are going to publish two or three articles on this important subject by Dr. W. G. Benner. Any one who desires the co-operative help of our State or Federal authorities should write to Dr. Hoggan State Veterinarin, Capitol Building, Salt Lake City, or to Dr. F. E. Murray Federal Building, Salt Lake City, who represents the government in the district.—Ed.)

The subject of tuberculosis disease in our farm animals is rapidly becoming a hackneyed phrase to many, but the disease itself is not, and it has recived more attention and study, by the scientist in the field and laboratory, and has been given more space and publicity by the press than any other single disease.

Attempts made by many breeders of cattle and swine, especially cattle breeders, to weed the disease out of their herds, proved disappointing and discouraging. Numbers of state legislatures have made liberal appropriations for the use of the cattle authorities to assist the farmer and breeder to eradicate the disease with the aid of the tuberculin test, but in too many instances, such state cattle authorities were forced to depend in a large measure upon inefficient laymen, or upon veterinarians whose work proved very little better, neither manifested a knowledge in animal diseases, the animal"s nature or her requirements. The necessity of disinfection was seemingly disregarded. As a result of such faulty methods and practices, the disease continued in its insidious paths. The tuberculin test was discredited. Tuberculin was accused as giving the disease to cattle.

Herd owners, guided by counsel, apparently ignorant of the insidious life of the germ that causes tuberculosis, and who were seemingly actuated by questionable motives, therefore, decided that tuberculosis had passed beyond human control, folded their hands in idly Mohammedanism and calmly awaited the arrival of the grim messenger, donned in the majestic "Milky Way" robe. The knowledge of the inroads that animal tuberculosis has made into our herds of farm animals and the probable losses and sacrifices now necessary to eradicate the disease is naturally deterring many herd owners from making further attempts to control the disease in their herds.

Take the owner that has spent years of arduous labor, time and money in developing the desirable qualities in his cattle. As the result of the loathsome disease he has seen his most promising animals decline and become useless for his purposes, and animals that would have sold at auction, if a grade, for say $100. He has seen them decline at the period in the animal's life when returns for his labors were longingly anticipated. The tuberculin test, probably, finally revealed more of his choice cattle afflicted. The test reveals tuberculosis in cattle that were not suspected to be afflicted with tuberculosis. What shall he do? If the reactors are in apparently good physical condition, rare blood lines or other desirable qualities are to be retained, he knows that he may keep them upon his premises, in quarantine, for breeding purposes, using the Bang system. He has learned that the tuberculin test indicates the presence of tuberculosis in an animal, but rarely shows the extent of the invasion or spread of the disease within an animal, or whether the animal is spreading the germs of the disease to other cattle in his herd.

The reactor may be yielding a large and profitable quantity of milk, which he knows is being distributed in a city, to hospitals, or homes, where it is probably used as the sole food for babies and invalids. He has learned from experience that even if he does segregate her, she may break down anytime and likewise prove an entire loss to him. He knows that in the human family a consumptive or tubercular person may change his occupation and still perform productive labor and not endanger the lives of those about him, but that in cattle it is not so practicable and only the wealthy with ample means to provide for such animals, may with questionable degree of satisfaction carry out the rules. He knows that too often the rules are not obeyed, and that then their Bang system is not the Bang system, and is doomed to disappointment. The care-taker must have a financial interest in the animals, or he may be apt to neglect important details.

He knows that if he slaughters her, the diseased spots have not develeoped beyond a certain point and to a degree that will render the meat injurious or dangerous to public health, that the meat inspection regulations will permit the meat to be declared sound, wholesome and fit for human food. He also knows that the butcher cannot or will not pay him more than $40 to $60 for the animal, and he foresees a loss of $60 to $40, granting that he has but one animal, or figured upon the basis of one animal. Too often, however, in older herds more of such animals are found afflicted, and the percentage of tubercular cattle is a herd is usually in direct ratio with the degree of infection in an individual in the herd, the length of time she has been in the herd, and, therefore, the length of time the germs have had unmolested sway, probably aided by unsanitary environments, such as dust, accumulations of tuberculosis-contaminated manure, through which the farm animals may travel, and thus help to spread the infection, or upon which fodder, hay, etc., may be fed; an insufficient number of windows of insuffiient size to permit the necessary amount of sunlight into the stable.

He knows that a herd owner or the farmer with his products and the consumer of his products are positively and absolutely dependent upon each other. This herd owner's savings of a lifetime may be invested in this herd. His stables and his buildings and the general farm operations are shaped to provide for these cattle. If he removes them and slaughters them, his loss may be so great that he may be prevented from restocking his premises, and thus a producer of foods is lost.

Again, an unscrupulous dealer in cattle offers to buy these diseased cattle for considerably more money than a careful butcher could or will pay. Then it becomes a battle within the herd owner between need and morals. It is human nature to hesitate before we decide the question that spells loss. Certain big slaughtering houses and scrupulous smaller butchers shy at farms and communities where tuberculosis is known to prevail. Buyers of pure-bred cattle, or good grade cattle, likewise avoid herds and districts where the health of the cattle is questionable. If a butcher buys out of such herds or districts the healthy herd owner suffers with the diseased herd owner, as the butcher must be fairly uniform in the price he pays. The butcher buys at a price that will enable him to bear occasional losses through condemnations at the time of slaughter, if the slaughtering is done under municipal, state or federal inspection.

The farmer pays for these losses. If the slaughtering is not done under some sort of inspection supervision—and reactors found upon the test applied privately, and the bologna cows are usually slaughtered in that manner—will the butcher always destroy the badly diseased carcass, which after removing the badly diseased portions would be eagerly purchased by the unsuspecting housekeeper at probably reduced prices, and thus frequently bought by the very persons that should provide the soundest and most wholesome food for themselves and family? Again a question of morals on the part of the butcher and need on the part of the housekeeper. This is a world of moral relations and not of moral perfections.

Good morals are prone to deteriorate, if not to disintegrate, unless properly recognized and supported. Since the herd owner and the consumer of his products are thus interdependent, some form of adequate co-operation must be manifested, and that co-operation can be secured only through education and an education that results in mutual understanding as to each other's needs and requirements.

Has the producer properly and in appropriate places advertised his problems? Is the consumer aware that he must be willing to pay his proportion of the legitimate advance in the present and probable future cost of productions? The consumer does not ordinarily advertise his wants in perishable products, and the shrewd producer does not wait for the consumer to hunt him, but he hunts the consumer of his perishable products.

KEEP HOGS COMFORTABLE

R. S. Jackson.

The high price of hogs make the care and feeding of them all the more important.

In the fall of the year when nights begin to get chilly and cold rains come, hogs ought to be given those little attentions that make so much for their comfort and welfare. They have a very thin covering of hair to protect them and they suffer where their fleecy neighbors, sheep, or even cattle, go entirely unaffected. They feel both cold and moisture and very readily contract colds. Pneumonia is common among them and carries off many of them each year. Their loss is far more expensive to the farmer than would be the cost of labor and materials sufficient to avoid it.

To keep hogs comfortable in reality requires little effort; it is just "getting at it" that is hard; but the one who delays too long is very likely to regret it when he loses a few hogs from colds or pneumonia. If he does not actually lose his hogs, he still does not get returns from his feed that he should, because a hog that is out of condition does not gain rapidly, and one that is in a cold place, burns up large amounts of energy in keeping warm, which feed alone can supply, and which might better be utilized for producing growth.

Oftentimes the roof of the hog house, whether a large or an individual one, is leaky, and every time a rain comes, the bedding or the floor as the case may be, gets all wet. Nothing will give a hog a cold quicker than lying in this cold, wet bedding. Moisture is also, as every one knows, one of the essentials to germ development; when it is ever present as it is likely to be in a leaky roofed hog house, what wonder that animals kept therein contract all manner of diseases? If the roof of the hog house is not water tight no time should be lost in making it so.

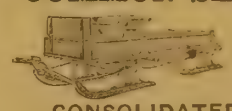
Many farmers, again, are very economical of their bedding, put in only a small amount and do not change it often. As a result the hogs have a hard time keeping warm, and the bedding becomes filthy and insanitary. Pigs especially, when bedding is short, will pile up in an effort to keep warm, and those underneath become so warm they sweat, and get steamy, while physical injury is often done to their internal organs. It is very poor economy to supply sparse bedding. There is plenty of straw on nearly every farm to provide all that hogs need and it should be used for this purpose.

Whether his herd consists largely of breeders, or of feeders, the farmer should see to it that they are kept warm and dry and generally comfortable these fall days. Their improved health and larger gains on lesser amounts of feed will more than reward him for his efforts.

Mistress—"They say there are 10,000,000 germs on the cap of a milk bottle."

Maid—"Sure, ain't it lucky it don't wear a coat and pants."—Town Topics.

COMMON SENSE BOBS



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We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

Home Visitors Excursions

EAST

Via

UNION PACIFIC SYSTEM

Tickets solds—
November 24; 27;
December 20, 22, 24

LIMIT—
Three months from date of sale.

Following Round Trip fares will apply from Salt Lake City, or Ogden. (Rates subject to war tax after November 1, 1917)

Denver	$27.50
Colorado Springs	27.50
Pueblo	27.50
Omaha or Kansas City	42.50
St. Louis	53.70
Memphis	62.50
Chicago	61.50
Minneapolis or St. Paul	58.94

Correspondingly low rates from many other points to many other points. See Agents for details.

L. J. KEYES,
District Passenger Agent,
Hotel Utah.
D. S. SPENCER,
General Passenger Agent,
Salt Lake City, Utah.

RUSSIA WHEAT STOCK

We often hear about Russia's big wheat supply and what effect it would have on our market if the war was to end. Recently the Modern Miller asked George Broomhall of Liverpool one of the most prominent grain authorities in the world regarding the Russian grain stocks and we give a part of his reply.

He says:

"We have recently had some fresh information respecting Russia's reserves and crops. The Russian food minister reckons that on September 14 the stock of old grain in the country was equivalent of 8,000,000 long tons, and I do not suppose that more than 2,000,000 of this would be wheat. This quantity would be the equivalent of 75,000,000 bushels of 60 pounds each, and as you may suppose, this is quite a small quantity for such a huge country as Russia. With regard to the crops harvested this year, no quantative estimates have yet been issued, but a recent report we received said that the crops were certainly smaller than those of 1916, and these gave 1,350,000,000 bushels of wheat and rye (bushels of 60 pounds). This report in the main agrees with other recent advices—even government reports, lately have been much less optimistic regarding the crop out turn, although some time back they reported that the harvest was about an average one.

Rye Crop Is Factor.

"Taking all the circumstances of the case into consideration, especially the depletion of agricultural laborers by the drain of war, I do not think we can reckon that this year's harvest of wheat and rye will be more than 1,200,000,000 bushels of 60 pounds. As you are no doubt aware, roughly speaking, the wheat crop of Russia is about equal to the rye crop, the latter, however, usually being rather the larger.

Method to Change.

"I am inclined to think that in time of war and social upheaval such as Russia has experienced this year, there will be a tendency for cultivation on the larger estates to be reduced, whilst peasants' cultivation might be more regular, therefore if I were making an estimate of the relative importance of wheat and rye this year, I should be inclined to put the rye crop at 700,000,000 bushels and the wheat crop at 800,000,000 bushels. A crop of 500,000,000 bushels of wheat in Rusia is distinctly small, and it compares with 800,000,000 bushels, which was the size of a full pre-war crop.

Little Wheat to Spare

"I do not think, then, that Russia would have any great quantities of wheat to spare for export, even if peace were to come tomorrow. There is, however, one circumstance which would greatly favor the export of grain from Russia, and that is the rate of exchange. At present a ruble is worth only about 7d of our money, and this of course means that we could send a sum of money to Russia and for every 7d of the sum we could obtain a Russian ruble worth, nominally, 2s, and with this money we could probably buy wheat on very advantageous terms and ship it abroad, provided export was not prohibited. The situation, of course, is not quite so simple as it looks, because for one thing the depreciation in the value of the ruble has been brought about to a great extent by the issue of a very large note circulation, and this increase of paper money has been accompanied by a large appreciation of the value of all commodities. Therefore we might find quite possibly that the prices of grain would be so high that they would offset to a great extent the depreciation in the value of the ruble.

Poor Stocks Shown.

"It is certainly a fact that for quite a long time past supplies of grain at Russia's consuming centers have been very poor, and we know, in fact, that even the army has had to go short of supplies. This scarcity has been, to a great extent, due to transport difficulties, and recently there has been some improvement, this resulting from a decision of the government to entrust commercial men with the organization of a system for purchasing grain from producers and distributing it to consumers. But even making all allowance for transport difficulties, I cannot but think that the great scarcity of supplies which has been experienced for quite a long time, must indicate that holdings in producers' hands are none too plentiful."

—o—

THE FANNING MILL

Several years ago a man with a fanning mill stopped at my farm and said my banker had told him that I was going to sow 40 acres of wheat. He said he had a fanning mill over on his wagon which he wanted to show me, but I informed him that I did not need it, as the thresher had done an excellent job of cleaning.

But he persuaded me to let him clean one bushel and see if it would pay. When he got through I bought the mill and fanned the rest of my seed.

In place of sowing the usual amount, one and one-quarter bushels per acre, I took his advice and on 25 acres I sowed one bushel and on 15 acres three pecks.

In the spring the wheat looked thin and I had my plans all ready to plow it up and put it in corn. One of my neighbors persuaded me to leave it stand, and I did.

When my thresher set his machine he said, "I am going to get pay for 1,2000 bushels or do the job for nothing." When the whistle blew for supper the weigher stood at 1,213½.

From that time I have been convinced that it pays to clean all your seed before sowing. The following spring I fanned my seed oats, and in place of sowing the usual three bushels I sowed two, and on some poorer land sowed only one and one-half bushels to the acre. When my oats yielded 53 bushels, while others made from 21 to 32, my neighbors sat up and took notice. All I had to spare went for seed the following spring.

There need not be a mill on every farm. Two or three men can own one in partnership, regulating their time so that none needs to be inconvenienced. If all farmers would clean their seed and test before planting, in a very few years farming would be brought nearer the high standard the Supreme Ruler of the universe intended that it should be.—Geo. W. Goland.

—o—

FARM MACHINERY

R. M. Jones.

This is an age of machinery and there is no question about it but that better machinery means better farming. However, many farmers have found that there is a limit to the amount of money which may be economically invested in this class of farm equipment. We know farmers who have so overstocked with high priced machinery that the depreciation, interest and repairs eat up most of the profits. This is a question that needs to be considered very carefully. There are instances where it would be far more profitable for a man to hire a machine to do the work he wants done than to buy one. The man with a few acres would hardly find it profitable to own a manure spreader, nor would it be economy for the man with ten or fifteen acres of wheat to harvest to purchase a binder. And yet these are very important farm machines, being great savers of time and labor and aid much in reducing the cost of crop production.

A machine must be used in order to make it a good investment. A corn sheller, shredder or power plow that is used a few days in the year and left to stand in the shed the remainder of the time may be expensive equipment. Whether it is used or not the depreciation in value and interest on the money invested goes on just the same. The average depreciation on machinery is assumed to be about ten per cent and with interest at six per cent would make the average yearly expense about $13 on each $100 invested in machinery. A man with $1500 worth of machinery would have an expense of $195 on this alone in depreciation and interest. If he could do the work with half this amount he could save $97.50.

We are not arguing against the purchase of farm machinery. We wish that every farmer would buy every improved tool and implement on the market, if he has enough use for it to make it a profitable investment. With the scarcity of farm labor it is absolutely necessary to use more labor-saving machinery than ever before but the point we wish to emphasize is that the man of limited means should invest his money carefully and advisedly. He should study his conditions and buy only that which is going to help him to do his work better and more economically. Idle and useless machinery is a constant expense.

—o—

IS IT WORTH WHILE?

R. S. May.

The difficulties of paying for a home when land is high are many. It is perhaps fortunate for those who succeed that there are difficulties. Nothing gained without effort is worth while. We appreciate that which cost us toil and privation. Every difficulty surmounted fortifies one against greater difficulties and leaves one better prepared to succeed in whatever he undertakes.

A farm is worth a great deal more to the owner today than it was years ago when farm, orchard and livestock products were cheaper. When a farm could be bought for a few hundred dollars it would produce income upon but a few hundred dollars under conditions that then prevailed. Today with better markets, better roads, better schools and with conveniences that may be had in our farm homes the farm is worth a high price. If it be a good farm and if it be situated so that the owner and his family are in touch with progressive citizenship, it is worth years of toil and even privations if necessary to pay for it. Ten or 15 years is a short time in the life of the children, and who would not feel justified in working that long for a good home?

But one is never justified in making a sacrifice in the education of his children and in the finer sentiments of life that money cannot buy. Health and happiness are essential to contented living, and anything that would interfere with contenment and the finer sensibilities of life should not be tolerated. It is no dishonor to rent; it may be desirable. You are the judge of this matter. You can be a useful citizen and your family can become the leading citizens of your state, as many have done on a rented farm. If you rent make your tenure indispensable and thus create wealth for society, those who live after you as well as those who live for you and with you. It is not the place nor the time that leaves an impression, but the man and influence he leaves as a heritage.

—o—

SOME PROGRESS

Farmer Clapole—"Has that city feller who bought Stone's farm learnt anythin' yet?

Farmer Sands—"Wall, he's learnt it don't do no good ter try ter make apple butter in a churn."—Judge.

—o—

Wool growers should co-operate in order to obtain the full market value of their product; enough growers should unite so that several thousand pounds of each grade of wool can be marketed at a time.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

We are offering this meek some excellent farms in exchange for Salt Lake City or Weber county property. These farms have a first-class water right in the Bear River canal, are well improved, under a high state of cultivation, right close to Tremonton, one of the best towns in northern Utah. These places are strictly adapted for sugar beets, alfalfa, grain, fruit; in fact, anything that's grown in this district. Climatic conditions are good. Water for domestic purposes, modern conveniences and accessibility are all good.

80-acre farm, with an eight-room modern house, hot-water heat, bathroom with all the fixtures, water piped to the house and barn, nice lawn, shade trees, hedge fence, good granary, chicken house, hog pens and other outbuildings too numerous to mention. This property can be exchanged for a smaller place. Price $175 per acre.

40 acres, without improvements, lying in the same neighborhood, with the same water rights; has been into sugar beets and alfalfa. The place is fenced with a woven-wire fence and is right near the main canal. This property we are holding for $160 per acre and will accept property in exchange.

60 acres, under the same identical conditions, that we are offering, for the same price.

We have lying just under the canal 160 acres, all under cultivation. This property has been farmed for a good many years and is one of the best farms in the Bear River valley. This land has been used for dry-farm purposes, although it can be irrigated and lies in excellent shape for irrigation. This property can be exchanged for Salt Lake or Davis county property, and the price is $75 per acre.

In Cache valley some first-class farms, all irrigated, water for domestic purposes, under a high state of cultivation.

We also have in the Bear River valley some of the finest farms there are to be found in the state of Utah which we can sell on ten years' time and an easy payment down, ranging in price from $115 to $200 per acre.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street
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COTTONSEED CAKE AND SOY BEAN CAKE

The best and cheapest food

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IF YOU WANT A REAL AUTOMOBLE BARGAIN

Write us about our used car snaps

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Easy Terms

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Salt Lake City, Utah.

FOR SALE

"VICTOR'S DEFENDER"

nd Prize Junior Champion boar at Utah and Idaho State Fairs—1917.

A wonderful hog for 16 months ld, with good bone, high back, nd a whale for his age. Is in he way of my "Defenders" sows. Also a few choice young "Defender" boars for sale. Orders laced now for spring pigs.

V. R. FISHER
xford Idaho

FOR SALE $750

uick six, 7 pass. newly painted and ew top. Tires good, one spare tire, ube, and rim; thoroughly overhauled.

R. A. WOOD
2269 McClelland Ave.
Salt Lake City, Utah.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 641¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER
Buhl Idaho

FOR SALE

5 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH
Buhl Idaho

FOR SALE

Purebred Holstein-Friesian Bull

Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Tag Apple Korndiko 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

FARMERS AND THE INCOME TAX

(Continued from page 3)

ately, and divide the one exemption between them. In case they are divorced or living apart, the one caring for the children can claim full exemption and the other only $1000.

There is an exemption to the extent of $200 for each dependent child under eighteen years of age. Suppose your net income figured up to $2800 and you have four dependent children under eighteen years, you would be allowed $800 deduction for them.

Other Exemptions.

There is a certain depreciation in the value of property which is exempt. It runs as follows: five percent on frame buildings and two and a half per cent a year on brick or stone buildings; ten per cent on the cost of farm machinery and implements. But this deduction must be based upon actual depreciation through use or partial destruction. If its value is the same as the year previous there is no deduction.

In case of loss by fire, theft, or storms, not covered by insurance you can deduct the fair market value of the property. This applies also to machinery, implements and farm buildings. You can deduct losses in trade or business provided the loss was actually suffered. But you can't deduct for hogs lost from cholera or cattle from sickness unless you had bought them, and then only in the amount you paid for them. Neither can you deduct for loss of any stock or grain or feed that you have produced because you are not required to report on these until sold.

You can deduct incomes from liberty bonds, and certain other public bonds, and gifts to religious or charitable or educational institutions to the extent of fifteen per cent of your taxable income provided no part of the gift goes to an individual stock holder in said instiution for his benefit.

All salaries or compensation paid by the state or political subdivisions of the state are exempt. That is, if you are a county supervisor or something whereby you get a per diem or salary, this does not have to be counted in the income tax report.

What is Not Exempt?

Your living expenses are not to be deducted from the total. And you cannot deduct any charge for any personal service rendered in the business, or for any member of the family working at home. You can't allow for a salary to yourself. But you can deduct for cash paid hired help as a part of the running expenses of the farm. Even where sons or daughters work for the parents at a wage, the wage must be paid in cash as to strangers and then this expense may be deducted. If this is done to avoid the tax, there is severe penalty.

"All necessary expense actually paid within the calendar year in carrying on the business" may be exempt from taxation. The question is: What is necessary expense? The family and personal expenses are not so considered. Your groceries, fuel, light, clothing, things like a piano for the home, are personal or family expense and not deductable.

But you can deduct taxes, except income taxes and those assessed aginst local benefits. Deduct interest paid on your indebtedness, insurance except on your dwelling, seed and feed purchased, stock bought for resale, cash paid for hired help, but cannot deduct as part of the wage the value of their board, lodging or washing.

You can deduct for the necessary repairs, but not for permanent improvements, nor for new machinery. You can deduct for small tools, and for the cost of running your machine such as tractor, threshing machine, etc. However, you can not deduct for the cost of running the family auto if used as a pleasure car. If used only as a part of the farm machinery to run about on business its cost of operation can be deducted.

In brief this is the new income tax law. It is up to you to see the income tax man. Don't think the tax does not apply to you. Find out by talking with him and when you go to see him have all figures ready showing what you took in and what you paid out.

The government is going to send its income tax men out where it will be easy for you to get to them. An income tax man is going to be in every county in every state in the Union some time between January 2nd and March 1st. Watch the local newspapers or ask your banker or postmaster when he'll be there, or near your place, and then go to see him. He will have a tax form for you, help you make it out answer all your questions, and won't charge anything for his services.

Don't neglect the income tax because if you do you'll regret it later when the government finds you out, as it will, and makes you pay the penalty for failure to obey the law.

Penalties.

For failing to file income report before March 1st, 1918, not less than $20, nor more than $1,000, and in addition 50 per cent of the amount of the tax due.

For failing to pay tax before June 15th, 1918, 5 per cent of the amount of tax due, and 1 per cent interest for each month tax remains unpaid.

For making false report, not exceeding $2,000, or not exceeding one year in jail, or both.

ADVANTAGES OF EDUCATION

The value of an education cannot be over-estimated. An education fits a person to be a citizen—one that is able to help solve the great problems of our country. Our law-makers, professors, ministers, public officers, teachers and leaders in this great country are persons of education. Education broadens the mind, thus enabling one to understand and enjoy much that the uneducated person cannot grasp.

Some persons consider education in a financial way only. I know of one man with a good education who made the remark that he fooled away fifteen years of the best part of life trying to use his education. He finally began to farm, and starting at the bottom, financially, he has made a wonderful success. But he speaks as if his education had been of no real value to him on the farm. I think that is a great mistake.

While a farmer does not use his education in as direct a way as a professional man, yet he uses it every day of his life and to a good advantage. Being able to calculate, he often adopts methods in his work to save labor and at the same time makes a greater profit. The uneducated and illiterate people are doing the greater part of the hard labor today. The slaves in the south before the Civil War were kept ignorant in order that they would know nothing but hard labor.

We often hear the remark that the world has progressed more in the last half a century than in several centuries preceding. If that is true, what is the cause? If we look back and see the condition of our country educationally, it is easy to see what has brought these advancements. About a half century ago the public school system was adopted. This is one of the greatest school systems known to the world. With our present school laws it is almost impossible for a child to grow up illiterate. When our people are educated to know what they want politically they will get it, for the people are the government and when the government needs laws we will get them.

It is strange, but nevertheless true, that parents with a good education often neglect their children's education, while those without an education see the necessity of one more clearly, and make a great effort to educate their children. Many persons an education may not help financially, but many that were unfit for other labor have been enabled through an education to make a livelihood. A badly crippled person without an education is almost helpless in making a living.

Every year our laws make it easier for young people to get an education. Those that fail to take advantage of this opportunity will regret it in after years, just as we older persons do today.—H. H. B.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars weighing about 100 pounds each, sired by Richards Pathfinder 1st Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please.

ERIK W. OLSON
Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

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Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
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FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN
Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

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"Do you think it more economical to do your own cooking?"

"Yes, indeed. My husband buys most all of his meals down town now."

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Extension Division, Utah Agricultural College

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV No. 23 | LEHI AND SALT LAKE CITY, UTAH. | JANUARY 5, 1918

Do You Know The Value of Alfalfa?

J. Ralf Smith.

A few months ago I was visiting in Kansas and Nebraska and was much surprised to see how careful they were in the feeding of alfalfa. In some of those larger towns they have feed mills where they grind alfalfa and make a prepared feed for livestock When visiting one of these mills I was very much surprised to find out that the alfalfa they were grinding was from Colorado and Utah and the sugar molasses used in the mixture was from the Utah-Idaho Sugar Co. and I wondered then if our farmers at home realized the value of alfalfa. We are able to cure our hay so much better than those eastern farmers. They have rain storms so often during the haying season. Usually we are able to stack our hay in the best of shape, having a good color and well cured.

In the production of livestock we have, in the alfalfa, one of the best feeds known.

Too often we do not realize how valuable a plant the alfalfa is. Some growers have gone so far as to say that good alfalfa hay, well cured with the leaves all gathered, is as valuable a feed as bran. Livestock need only a small amount of grain to make a good balanced ration when alfalfa is fed because of the high protein content.

As a pasture for hogs, alfalfa is a most excellent one. Some experiments at the Iowa station showed that an acre of alfalfa pasture produced over $90 worth of pork.

I sometimes think that we do not know the value of this feed. How is it that the dairymen of Wisconson can buy alfalfa here in the west, ship it back there, make it into butter and cheese and then send the finished product back to us. Why don't we feed it here. Is there something in this business we do not understand. Why can those dairymen make money and pay such long freight hauls and compete with us in butter and cheese.

More could be said about alfalfa in the feed lot both for sheep and cattle but I will not have space in this article.

The value of alfalfa is increasing the yield of succeeding crops is very important. Results at the Wyoming Agricultural Experiment Station show that on irrigated land the effect of alfalfa was to increase the value per acre of subsequent crops as follows: Potatoes, $16.00; Oats, $16.00; Wheat $8.00 to $12.00 at the Colorado and Nebraska Stations the yield of grain was sometimes nearly doubled when immediately proceeded by alfalfa.

The value of plowing under alfalfa to increase the tonnage of sugar beets is just becoming known to some of our farmers.

On new land the planting of alfalfa has been found an excellent way of starting the land as a good crop producer. An instance of this can be shown were new land was planted to alfalfa, the neighbors, said it was a poor practice to do such a thing but now this land after the 2nd and 3rd years is producing big crops of alfalfa and others are trying the same way of starting their new land.

I would like to have some of our farmers tell their experiences of the value of alfalfa in the Utah Farmer. It would increase interest and then we would realize the value of alfalfa more than ever before.

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VOLUME XIV. LEHI, UTAH, SATURDAY, JANUARY 5, 1918 No. 23

Reclamaton of Alkali Land

By F. S. Harris, Director Utah Agricultural Experiment Station.

Never was the reign of monarch more supreme than is that of alkali where it is present in sufficient quantities to exercise its sovereign power. It may prevent all plant growth and thereby exclude animals and even man; or it may choose its favorites from the plant kingdom, allowing one plant to grow here and another there, according to its caprice. Though a monster, it may be overcome if the fight conquer, no one with experience will say; but only the faint hearted or uninformed believe its conquest is not worth while.

The methods of treating alkali land vary so much with conditions that no definite rule can be laid down. The means must suit the needs. They may be simple or complex, according to the way in which the problem is presented.

Find the Source.

The first step in the conquest of alkali is to determine its source; whether from a dried up arm of a saline body of water, the disintegration of nearby strata of rock high in soluble salts, the drenching of higher lands with excessive irrigation water and the consequent accumulation of salt and water in the lowlands, or the use of irrigation water carrying large quantities of alkali salts. The treatment of land based on a knowledge of the cause of trouble makes possible the use of preventative measures which greatly simplify the problem.

Reducing Evaporation.

Reducing the evaporation of moisture from the soil is one of the most effective means available to the individual farmer for preventing the accumulation and spread of alkali which moves readily with the soil moisture. When water rises from the lower layers of the soil to the surface and evaporates, salts are brought to the surface and deposited in concentrations that are injurious to crops. One great aim of the farmer, therefore, should be to prevent the evaporation of moisture. Any means of doing this, such as the formation of a mulch, shading the land, cropping, or adding organic matter, is effective in reducing surface accumulations of alkali.

Wise Irrigation.

The unwise use of irrigation water is one of the chief causes of alkali troubles. Not only is the man on the higher land responsible for damage, but each farmer may ruin his own land by water-logging it. If so much water is added that the water table is within a few feet of the surface, evaporation is excessive and alkali will gradually accumulate at the surface of the land. The conquest of alkali can never be complete until a wise use of irrigation water is practiced.

Manure and Organic Matter.

Experience has demonstrated the great value of farm manure and organic matter in improving alkali spots. The action of these substances is probably due largely to the fact that they improve the tilth of the soil which has been injured by alkali; they also reduce evaporation of moisture.

Gypsum on Black Alkali.

It is a well-known fact that black alkali, or salsoda, is particularly detrimental to the tilth of the soil by forming a hard surface crust. It dissolves the organic matter from which it gets its black color. This salt, which is one of the most injurious, may be changed to the less harmful Glauber's salt if gypsum, or land plaster, is added to the soil. By the chemical action between gypsum and black alkali, lime is one of the products formed. This improves the tilth of the soil. Thus the treatment with gypsum not only rids the soil of one of the most harmful substances, but it causes another which is beneficial to be formed.

Black alkali interferes greatly with the movement of water through the soil, often injuring it so that months are required for water to soak but a few feet. Where this condition exists, it becomes almost necessary to neutralize the black alkali before the later stages of reclamation, especially by drainage, can be accomplished.

Growing Resistant Crops.

It is folly to attempt to raise crops sensitive to alkali in land containing a high percentage of soluble salts, especially since a number of fairly resistant crops are available. The date palm is a well known alkali-resistant crop for tropical climates. White sweet clover does well in many of the wetter alkali soils. Sugar beets and alfalfa are fairly resistant after the plants get a good start although they are somewhat tender when the plants are young. Barley is the most resistant of the cereals, while corn is fairly tender. Peas are among the least resistant of the ordinary crops.

A number of the wild salt-weeds and grasses endure much more alkali than the cultivated plants, and

(Continued on page 14)

The Sheep Situation

Clarence DuBose.

The wool from twenty sheep is used to make the clothing and other equipment of one soldier.

Six farms out of every seven in the United States have no sheep.

Sheep can be produced profitably on almost every farm.

What about your farm? If you keep sheep you are outfitting a soldier who is risking his life for your freedom. If you have a flock of 200 sheep you will clothe ten men who are fighting in France. And if you have no sheep you are failing to do all that is in your power to help win the war.

Get some sheep.

They make both meat and wool—and both are badly needed. By proper management they can be produced on the average farm without entailing a reduction of other live stock, and without interfering with any other agricultural plans.

More than the entire wool production of the United States will be used for our armies. Where will we get the wool to make clothes for the civilians? Every ship is needed to transport men and supplies from America to Europe. Unless the necessity is extreme we can't spare ships for long voyages to Australia, South Africa and South America to get wool. Furthermore, those countries have not increased their production. The problem must be solved by the production of more sheep on farms throughout the United States. We must produce our wool at home instead of hauling it from the other side of the world. We can do that if the six farms out of seven that have not kept sheep will begin to build up flocks in proportion to the size of the farm—at the ratio of one sheep to each three acres. We can do it if you will put some sehep on your farm.

You will be helping produce clothing and meat for our soldiers and yourself. You will be helping win the war. You will be making more money from your farm.

Sheep, in proportion to the value of their products, are produced more economically on the farm than any other livestock; the feed and labor requirements are less. They fit in with practically every kind of farming; get much of their subsistence from forage, from grazing weeds and grass that would not support other stock. They eat almost no feed that has a value as human food, and need less grain than other animals. They add materially to the farm revenue but add very little, relatively, to the farm expense.

Since 1914 wool and mutton prices have doubled and some grades of wool have trebled. Those who are in close touch with the sheep industry believe that attractive prices will continue. During the war over-production seems impossible.

The United States now has 1,200,000 fewer sheep than in 1914. Our production of wool has steadily declined since 1910, when it was 321,362,750 pounds, to 290,192,000 pounds in 1914, 288,490,000 pounds in 1916 and 285,573,000 pounds in 1917. But while our production decreased our manufacturing consumption increased, from 550,356,525 pounds in 1914 to 737,679,924 pounds in 1916. In 1917 the amount manufactured will be even larger, and it seems certain that it will continue to increase during the war.

The difference between the amounts we produced and manufactured represents our wool importations from other countries. We have gotten into the habit of using a great deal more wool than we produced—we'd just send over to Australia or South Africa or perhaps somewhere in Asia and get what we needed. But the ship shortage now interferes with that uneconomic arrangement—which, in the long run will be a very valuable thing for America. Present war necessities will teach us the lesson we would have had to learn at some time—to establish sheep production permanently as a part of general American agriculture.

The need is immediate as a war measure. But war or no war it would have been necessary for us to produce more sheep. A man cannot draw money out of a bank indefinitely unless he makes deposits. We were constantly consuming more wool and mutton, but raising fewer sheep. The principal sheep countries were not increasing their productions before the war and seemed to have reached their maximum. There was a discrepancy between consumption and production that was rapidly becoming critical. The war brought the problem to a crisis.

What about your farm?

Is it one of the six out of seven farms in the United States that have no sheep?

Get some sheep!

Remember that twenty sheep will clothe a boy who is risking his life "over there."

GOOD ROADS ARE IMPORTANT TO EVERY COMMUNITY.

Idle Horses

Written for the Utah Farmer by J. C. Wheelon.

Snap Shots In The Feed Lots.

I presume there are no animals carried on the farm that are subjected to the extreme conditions of work, idleness and feeds as the horses and colts. Some men work the horse day after day and will turn him to the roughest feeds and scanty care, while others are lavish in the use of rich feeds, regardless of their cost and often to the detriment of the animals.

The horse is endowed with a faculty to endure much work on scant foods on the one hand and his system can throw off a vast amount of excess elements in overfeeding on the other hand.

I have seen idle horses and colts turned out to a straw stack all winter with no shelter and no water but that obtained from snow and some of them live through and yet an idle horse of 1200 pounds weight, if turned to an alfalfa stack with plenty of water will eat 40 pounds of hay and gorge his system with nearly twice as much protein as he should have when working ten hours a day; all this with the result that the poor feeder is buying tractors because his horses die off, and the lavish feeder buys tractors because his horses are too expensive.

The horse is too valuable a farm

(Continued on page 7)

Better Returns By Co-operation

Prof. Thomas Shaw.

This question so vital to farmers at the present time has received but little attention from the farmers in the past. They have been so accustomed to work independently that they do not yield to the inconveniences that are sometimes the outcome of co-operation. In some other lines co-operation is becoming a mighty force in the land, as for instance in the line of co-operative stores. Which are the ways it may be asked, in which the farmers may co-operate to their mutual advantage? The answer is in so many ways that only those tnat are among the most important among them may be discussed in this paper.

They may co-operate in the use of some at least of the machinery used in sowing the seed, especially may the small farmers do this who are neighbors. For instance, two farmers who are neighbors, may for a time at least use the one seed drill. There may sometimes arise a question as to who should use it first. One way of determining this would be that the man whose land was first ready would so use it, otherwise that they should agree to use it at the first turn about in the absence of the condition referred to above. The beginner who probably is also in debt at the same time, would thus be saved something in the shape of interest which is usually very high in new countries. The same line of reasoning and practice could be applied to other implements used in sowing and reaping the grain, especiany in the use of the mower and the sulky rake, also the tedder where heavy crops of alfalfa are grown. Tne only real obsacle in the way of such co-operation is that which exists in the minds of the farmers. They want to conduct their work absolutely independently.

They may co-operate in threshing. The loss from want of such co-operation is sometimes very great. Many instances may be cited in which an entire crop, especially where late, as in the case of flax, has been greatly injured through burial under the snow, wnen a little timely co-operation would have saved it by putting it in the stack. The same idea may be applied to grain left long in the stack waiting for the thresher, and through such exposure losing much by shelling and the depredations of wild animals. The cost of threshing has come to be a huge item to the farmer. It could be greatly lessened by co-operation on the part of a few farmers. Should they invest in a small thresher, that would thresh some 600 to 800 bushels a day, they could begin the work in good weather as soon as the grain was in shock instead of having to wait for weeks for the thresher to come around. Should the weather prove less favorable, they could frequently engage in stacking the grain when they could not thresh it, and thus the work would go right on. If so desired they could stack it all, and defer threshing until the fall plowing had been done. This method of co-operation is certainly feasible. It would avoid the necessary of hiring extra labor in harvest time when labor become to be as dear as to be in a sense beyond the reach of the farmer for the class of service rendered.

Farmers may co-operate in the marketing of livestock and some other products of the farm. Take for instance the case of swine. If only a limited number are grown on a farm, and the market is far away, to ship them as only a part of a car load would put the cost of transportation so high as to make it excessive. This may be prevented by forming a co-operative shipping associtaion. It may include as many farmers as live within a reasonable distance of the shipping station. A small membership fee binds the association together. One of the members is chosen to attend to the shipping. When the season arrives he ascertains by phone how many animals are ready to ship. He secures a car to be ready on a certain day. He notifies the farmers to bring in the number of animals specified on that day. He sees that they are put on the car and goes with the shipment to the stockyards and disposes of the same. The money is paid over to the farmers, and usually the shipper is paid through the allowance of a reasonable percentage on the returns. That form of co-operation is becoming quite general in Minnesota, and there would seem to be no good reasons why it should not be adopted wherever enough swine are grown to exceed the needs of the local market.

The creameries and cheese factories where they exist furnish splendid instances of the benefits to be obtained from such co-operation. In Canada co-operative creameries have built up an enormous and profitable trade in cheese. In Minnesota and other states an enormous return in the aggregate is being reaped through the returns received from co-operative creameries. As things are at present, the making of cheese will probably give a larger cash return than the making of butter, but the latter has the great advantage now that separators are used in furnishing skim milk rather than whey for the feeding of calves. For such a use it is vastly better than whey, although the latter furnishes a good food for swine when fed with proper adjuncts. The immense output in both butter and cheese would not have been possible in the absence of co-operation. Nor would the uniformity in quality that characterizes the factory made product ever have been attained in the home dairy.

Another form of co-operation is that which leads a number of farmers to use but one sire for the time being and that one is purely bred. In a community that covers a somewhat wide area, an organization will render this work more effective.

Here also a small membership fee and low annual dues will tend to increase the interest of the farmers in this work. It is distinctly an advantage if the farmers decide to use the sires of but one breed. When the sire must be changed to avoid too close breeding, and exchange may be made by the breeders in two of the neighborhoods within the circuit. This prevents the unnecessary sacrifice of a sire while he is still useful, and it saves the expense of purchasing another sire when this expense is not necessary at so early a period. The saving in the aggregate to the whole country may thus be very large.

Of course, co-operation may not be nearly so necessary in the case of large operators. In fact it may not be necessary at all. But in the case of the farmer with a small farm, and especially in a neighborhood newly settled, it may be greatly helpful. The more scarce and dear that labor becomes, the more apparent will the advantages of such co-operalton appear.

Farmers who chop wood to save coal this winter will be making the chips fly for freedom.

Safe
Sane
Always dependable.
Walker Brothers Bankers
Founded 1859. "A Tower of Strength"
SALT LAKE CITY

Solve THE LABOR PROBLEM
Here is the farm tool that has solved the labor problem as to making and cleaning ditches, grading roads, terracing and levee building.
The Martin
DITCHER & GRADER used exclusively by thousands of farmers and ranchers in 48 states. Gives satisfaction wherever used. Does the work of 50 men. Does it quick.
Simple—Practical—Efficient
All steel, reversible, adjustable. Long life. No repair bills. Size for every requirement. Write for catalog and list of users near you free.
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OWENSBORO DITCHER & GRADER CO., INC.
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CREDIT AND OVERBUYING

Is the average farmer enough of a bookkeeper? In other words, does he check up carefully to know just where all his money goes and to be sure best methods are being followed in all his buying? The farmer is a very busy man an cannot take very much time for bookkeeping, but we believe it would be time well spent if he would occassionally take a day off and see in which direction he is going—see if he is investing his money in the direction from which he will receive the most benefit.

Present methods of buying and selling farm machinery, among farmers generally should be fore cash, and they should pay this way and not require the manufacturer to wait one, two or three years for his pay. There can be no question but that if machinery could be handled on a cash basis it could be sold for a less price than if sold on either short or long time, and both the farmer and manufacturer would be benefited.

One of the large machinery manufacturers, in discussing this subject, says: "Men seem to be more willing to buy luxuries or semi-luxuries, and pay cash for them, than they do to buy profit-making or satisfaction-giving articles which are more in the nature of necessities."

It has always been my opinion that farmers or others will very seldom over-buy if they are obliged to pay cash for the article they buy, but they may be induced to overbuy if they can get time on the article purchased.

If machinery is more largely sold for cash, the farmer must co-operate with the manufacturer and dealer and not ask them to wait for their money, but show a willingness to help abolish the credit system in the implement business. The manufacturer and dealer should, by more generally fixing a cash price as a basis for selling, try to get the business on a cash basis. When the time does come that the business is on a cash basis there will be less financial failures among implement concerns and less unused machinery lying in the fence corners. We believe that farmers should consider fully the benefit they will derive from any purchase. Look carefully into the proposition and see whether or not the article you contemplate buying is really needed.

There are many new things in the machinery and other lines being placed on the market all the time. All these new devices should be given the attention of the farmer. Let him find out how much time the article may save him or how much his production will probably be increased by its use. Don't buy something new just because you can get it on time.

How about luxuries or semi-luxuries? Many times the automobile is referred to as a luxury for the farmer. An auto can be a luxury for one farmer and a necessity for another, depending on conditions surrounding different men. Then again, one man's idea as to what is a luxury or a necessity may be very different from that of another.

Here is a farmer with some boys and girls all working hard, who owns an automobile, using it on a summer's evening to take the family for a ride, to enjoy and be benefited by the cool evening air. Many would call this a luxury. Possibly the health of some members of this family make this ride an absolute necessity. Certainly health is the first necessity. If the automobile can be made a health-giving machine, doesn't it becoi e a neecssity? These are questions that must be setteled by the farmer himself, and he should give them some consideration. He should so try to live and raise his family that they will not be ready for the scrap pile before they are 50 years of age.

There are without doubt many pieces of farm machinery that may be both health-giving and money-making. Take both these things into consideration when tainking of making a new purchase.—M. P. A.

Big Money in Running Water
Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an

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HIGH FINANCE

Willie had a yellow dog that was a perfect nuisance, but so devoted was the boy to him that he could not be persuaded to have him killed. One day, when his father had been unusually annoyed by his antics of the dog, he called Willie in from play and said:

"My boy, I'll give you a dollar if you get rid of that dog."

Willie's face expressed great amazement at the thought of so much money belonging to him. He looked long at the dog and finally told him he would give him his decesion the next day.

The following day Willie sought his father and said:

"I've got rid of Max, father."

"I'm more than glad, Willie," said the father. "Here's your money, you've earned it. How did you get rid of him?"

"Why," answered Willie, as he put the money in his pocket, "I swapped him to Bill Morgan for two yellow pups."

Jethro Tull, a Great Farmer

Two hundred years ago there lived a great man on a poor English farm. His name was Jethro Tull, and today he is looked on as one of the great farmers of all times.

Jethro Tull's neighbors thought he was a crank. The farm hands who worked for him thought he was crazy, and oftentimes would strike and refuse to work for him. The scientific men of that date claimed that Tull's ideas were not worth much, and that those that were worth anything had been borrowed from someone else.

In the later part of the seventeenth century, before he had any idea of becoming a farmer, Jethro Tull went to college and studied law. Then he put in some time traveling in Europe. Although he was intending to become a lawyer, he had been brought up on a farm, and, without particularly meaning to do so, he observed European methods of farming. Especially was he taken with the clean cultivation given the grape vines in France.

Coming back from his travels, he started out in the practice of law, but failure either of his health or of his finances compelled him to start farming. It is not likely that he knew much about farming, but he was a man who had his own ideas about things, and he was so persistent that he would not rest until he had worked them out. To start with, he became so disgusted with the English farm-hands working for him that he determined to put his entire farm down to sanfoin, a kind of clover. He thought if he had his farm in sanfoin, he could get along with very few farm-hands, but he found sanfoin seed so high in price that he could not afford to sow it at the regular rate. In those days there were no drills. It was then customary to sow sanfoin at the rate of seven bushels per acre. The necessity of making a small amount of sanfoin seed go a long way brought the idea of drilling to Tull's mind. At that time there was not a drill anywhere in all England, and so Tull set out for himself to make one. As a result he made a drill working on much the same principle as our modern drills. With it he successfully seeded his sanfoin. Then he started to drilling small grain and turnips. He sowed one-third as much seed as his neighbors, and secured larger crops. But his methods of farming were so different that his neighbors though him a crank, and would not try out his ideas, and the hands working for him did all they could to keep his ideas from working out.

When Tull started farming, most English farmers grew wheat and oats on the same land year after year. After two or three years the weeds would get so bad that the next year they would grow nothing, but would take a year off to fallow the land, or clean it. In this way the farmers of England every year lost the use of from one-fourth to one-third of their best land. Book farmers had begun to talk a little about clover, but very little of it was grown as yet. There was also some talk of turnips, but they were not yet a common crop. For the most part, the cultivated land was in wheat and oats year after year, except when it was being cleaned of weeds.

Tull grew wheat on the same land year after year for thirteen years straight without fallowing the land. He could do this without the weeds bothering him because he planted the wheat in rows far enough apart so that he could cultivate it. By doing this he needed only one-third as much seed as his neighbors, and he secured larger yields.

When Tull began farming for himself, he remembered how cleanly the French cultivated their grape vines. The idea came to him of cultivation being the secret of success in farming. And so after he had invented his drill, he put all his crops in rows far enough apart so that he could cultivate. He dug up some of his plants and looked at the roots with a cheap microscope he had bought. He watched the soil carefully day by day. He observed his plants to see how they were affected by soil conditions. At last he came to the conclusion that plants grow by taking up through their roots small particles of dirt. The particles must be very small or the plants could not take them up. He thought that this was the reason for giving frequent cultivation. If the soil could be frequently stirred, the particles would be small enough so the plants could take them in through their roots. He published a book called "Horse-Hoeing Husbandry," which some people think has had more influence on agriculture than any book ever written. In this book he told what a splendid thing cultivation was; how necessary it was in order that the plants might have plenty of food in the form of minute particles; and how the earth was made moister by the frequent cultivation. He thought that cultivation was just as good as manure, and suggested that the chief reason manure increased crops was because it helped make the soil particles fine, so that the plant roots could take them in.

A large part of his life, Jethro Tull was a sick man. His sickness was very painful, and when his hands did not do his work in just the way he wanted it done, he became very angry. The scientific men criticized his book so much that he became bitter. Just the same, he was sure that in his forty years of farming he had discovered a system which would some day become the common system in all England. He thought that some day folks would drill in their crops and give them horse cultivation. He died a poor man, and at the time of his death there seemed no prospect that anyone would ever pay much attention to him or to what he had done.

But there were folks who were impressed by his work, and they tried out his ideas under different conditions. Some of them worked, and nowadays drilling is a common thing with nearly all kinds of crops. We don't plant small grain in rows and give it horse cultivation, but we do grow a number of ther crops in rows, which we would not have done had it not been for Tull. He was the first man to make farmers realize that cultivation is a good thing.

If Tull lived nowadays, he would probably try out some new and startling ideas in farming which would make most folks laugh at him. But just the same, he might be a great benefactor of the human race. Occasionally a farmer boy comes along who grows into a kind of Jethro Tull. He doesn't farm in the way other folks farm, and generally is a rather poor money-maker, but by close observation he discovers things about the way plants and animals grow that make him a wiser man than any of his neighbors. Sometimes he puts together his observations in such a way that great improvements are made in farming.

We don't want so very many Jethro Tulls. They are rather uncomfortable people to have around. Just the same it is a good thing to have a few of them. Let's not make too much fun of folks who try out new ideas in farming. Who knows but that sometime they may discover something really worth while.—Wallace Farmer.

SAVE THE POTATO SACKS

By E. R. Bennett, Field Horticulturist.

Western potatoes are almost without exception marketed in sacks. Before the war these sacks were but a small item in potato growing. At present the container is one of the big factors in the price of a sack of potatoes. This year Idaho's potato crop will require in the neighborhood of three million sacks. What becomes of these sacks after the potatoes are consumed is a question of much economic interest. Previous to the world war western grain was shipped to Europe in sacks. The handling of these sacks usually stretched them to such an extent that they were of no further value as grain retainers, but they were collected, baled and returned to this country by the ship load under the name of "Liverpool returns" or centals. These sacks, the past few years, could be purchased for potato growers at four, five or six cents each. When the war developed thousands of miles of trenches, rifle pits, and underground fortifications, these sacks were diverted to more immediate use. Untold millions of them have been filled with soil and piled in rows in front of the trenches. It has been reported that silks and even oriental rugs have been used on the Turkish front in trench construction.

The result of this diversion of sacks to other purposes is that potato sacks have steadily advanced in price till the price is now becoming practically prohibitive.

What do you do with empty sacks? The larger part of the potato crop is delivered to the western consumer in the sack. Most of these sacks are never used again. If the sack of potatoes is placed on a dirt floor and remains there for any considerable length of time, the sack rots and is useless. Likewise if, frozen or decayed potatoes remain in the sack it will soon be spoiled for further use.

We are asked to help win the war by practicing economy. Save wheat! Save sugar! Save meat! Why not also help the farmer by saving the potato sacks? When the supply of potatoes is purchased it is much better for the potatoes if they are emptied out of the sacks either in a pile on the cellar floor or in a bin made for that purpose in a dark room. Then the sacks should be hung in a dry place or be sold to dealers in such supplies. Children in any neighborhood can earn many a dime by collecting the potato sacks and selling them either to dealers or to the growers. Sacks are becoming harder and harder to get and hence higher in price. Save the sacks, it will help the farmers.

STRAIGHT UP

"Is Mike Clancy here?" asked the visitor at the quarry just after the premature explosion.

"No, sor," replied Mulligan; "he's gone."

"For good?"

"Well, sor, he wint in that direction."

HUNTING DAYS OVER

A young Swede appeared at the county judge's office and asked for a license.

"What kind of license?" asked the judge. "A hunting license?"

"No," was the answer. "Aye tank aye ban huntin' long enough. Aye want marriage license."

Don't let rats in your corn crib ea holes in our national defense.

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Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
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Established 1904.

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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

It is surprising how little some of our "supposed" well informed men know about farming and farm life.

Now is the time to put the manure out on the farm. Do not let it lay around the barn. Plenty of manure on the farm means better crops.

How is your straw supply? Use it as liberally as needed for bedding because it is a profitable practice. Like food don't waste it. There are so many ways to use it.

The best way to fight any contagious disease among livestock is to keep the place clean. Use some good disinfectant, keep the place dry, sprinkle some lime about the chicken coop and hog pens.

Now is the time to secure the number of brood sows you plan to raise this year. In a few months they will be very scarce. If there is enough to go around we will be surprised, because of the interest being taken in the increased production of hogs.

As every farmer knows the government is at the present time asking for increased hog production. This is an easy and profitable way for hog growers to serve their country. Don't forget that in rendering the government this service you should exert every effort possible to have the pigs strong at farrowing time. This can't be done without giving the sows plenty of exercise during the winter. Don't neglect it.

ADVERTISEMENTS AS NEWS

The advertisements in the Utah Farmer are good news, for they tell you where you can obtain certain things that you need. They discuss the kind you should buy and where you can best buy. They often name the price or they will send you a catalog giving all details along with the price.

Every advertiser is backed by the paper and our readers should know that we have found out their reliability before we allow them to use the columns of our paper.

Every one can well afford to read this kind of news, such as is found in advertisements of the Utah Farmer.

HOG CHOLERA

If your hogs are sick and you do not know what is the matter with them get in touch with the county agent at once. There are now in the state several men who are paid by the government and state to help fight all kind of livestock diseases. If the county agent can not help you he will call one of these experts. Remember there is no cost to you. The government and state wants to prevent any spread of hog cholera or other diseases and ask you to co-operate with them in fighting any and all kind of contagious livestock diseases.

Have you started to keep a record of costs this year. Take an inventory and keep a record of all you pay out and keep a cost of the different crops.

ORDER YOUR MACHINERY EXTRAS NOW

A representative of one of the largest manufactures of farm machinery said; "their factory had enough orders now to keep them busy during the year. Another problem is to secure the steel to make up the orders we now have." If this is the condition among manufacturers, every farmer should realize the importance of finding out what extras he will need or new machinery that he is going to buy and place the orders so that you get them when you need them. Delays will hinder you in your work and the labor problem is going to be a big one this year.

Put all your old machinery in the best possible state of repair so that you can secure the most efficient operation at the time it is being used. Machinery you may have thought was worn out can be used when a new part has replaced the old one. Railroads are going to the junk heap and putting old equipment into use. It will be well for the farmer to do the same.

Order the parts or extras you will need right now.

SECURE GOOD SEED NOW

According to press dispatches the Secretary of Agriculture has asked Congress to appropriate a sum of money so that the department can help the farmers secure good seed for planting this year.

The value of good seed is more important than some farmers seem to realize.

At harvest time, is when the difference between good and poor seed is known. A number of our farmers do hill selecting of potatoes and secure a much larger yield. A few will select their grain seed before it is cut and will select the corn by going through the field and getting the best ears.

The proper cleaning of seed is very helpful, take out the weed seeds, the seed that will not germinate and secure a perfect stand of any crop you plant. Now is the time to do this work of selecting and cleaning your seed.

If you are going to purchase seed do it now, while the supply is good and you can get the better quality. It is a good plan to pay extra for the best seed but to not allow some one to charge you a higher price for any kind of seed unless they deliver you the kind you pay for.

NATIONAL FOOD SURVEY

All dealers, manufacturers, warehousemen, hotels and holders of foodstuffs are required to make a report to the government the amount on hand December 31, 1917. If they did not get a blank that is no excuse.

The farmers are not asked to make a report, except a few who have been selected in different parts of the country. If any one who must make a report, failed to receive the blanks they can secure them from Field Agent of Marketing, U. A. C., Logan, Utah, or Federal Grain Supervision 423 Ness Bldg., Salt Lake City, Utah.

This survey of our available food stocks is of the greatest significance, since it will furnish the basis for the shaping by the Government of important plans and policies, vital to the country's welfare. It is only with accurate figures in regard to exisiting food supplies that we can plan the conservation, utilization, and production of our food supply in such a way as to meet safely the extraordinary war conditions with which we have to contend.

ATTEND THE ROUND-UPS.

The programs for the annual Round-Ups, to be held in different parts of the state, are being arranged to meet present conditions. At these meetings it is a good place to get together and discuss the problems of farm life.

This year the farmers of the state are called upon to help the government increase the food products, just how to do this the best will be discussed at these meetings.

Farmers are very busy but there is so much good in meeting together, that every one who can possible spare the time should go. You meet the other fellows who are engaged in the same work and can discuss with them your problems. The lectures and demonstrations by the men selected for the programs are always helpful.

For the convenience of the people these Round-Ups are held in different parts of the state for time and place and subjects to be discussed see the advertisement on another page.

TEACH THE CHILDREN THRIFT

Among the results of the war will be an increase in the practice of thrift. In the past all sorts of efforts have been made to promote thrift. Contests, prizes and saving banks have done a great deal to help.

Now war conditions have made a change and parents have a splendid opportunity to impress on their children the great lesson of thrift.

Our government has a plan and if parents will teach their children what it means to save, and start them with a book of war saving stamps, both the children and the government will be helped.

The money necessary to run the government might have been raised by immediate taxation. A better plan was arranged, liberty bonds, war-savings and thrift stamps.

The whole plan is a war measure but it will help to teach us all the value of thrift and keep alive this splendid practice long ofter the war is over.

A start can be made witn as small amount as twenty-five cents. Start now and teach your children the lesson of thrift.

THE TROUBLE WITH UTAH

How can the state do its duty in the increased production of meat when the demand for pork products at home is greater than the amount produced? It is quite plain that Utah to help in this matter, must bear our own burden and not push it off onto some other state. It ought to be a matter of pride to our people not to let some one else, with probably less resources, supply our tables in times like these; more than that, our patriotism should see to it that there is a surplus of meat to send to those in the trenches.

This result might be easily possible if our farmers who have no hogs on their places would take at least one or two brood sows to care for and in that way supply their own needs and perhaps be able to help others in addition. The government favors such a plan with its wide application, as against a plan to interest individuals on a large scale, because the work and cost of production is lowest. It is desired to turn the smaller wastes of the farm into profits that would otherwise be lost.

With a minimum price for pork, established, as it now is, the farmer who raises hogs has a definite goal and has a better means of figuring a profitable return than with any other kind of livestock.

A day spent at the stock yards will show the unnecessary waste in animals. Sows about to farrow are brought in for slaughter. Every such case means from six to ten less pigs in Utah. If these sows were kept on the farm as they should be and allowed to raise their young, they would yield in a comparatively short time a very acceptable profit. First of all it is good business to increase the number of hogs, and of equal importance it is patriotic.

Idle Horses

(Continued from page 3)

animal to be dispensed with on the farm. He can do the work better than the tractor. He can use much of the roughage on the farm, and we are told that horse manure contains more useful bacteria than any other fertilizer.

According to the standards an average horse of 1,000 pounds weight should have per day, the following proportion of food elements, when idle:

Dry Matter Lbs.	Protein Lbs.	Carbohy. Lbs.	Fat Lbs.	Food Values Calories 1000's
22.5	1.8	11.2	.30	27

As there is no single feed that we know of that will furnish this perfect balance we endeavor to combine the different feeds so that we can give the quantity of dry matter to fulfill the function of the animal laboratory and at the same time supply the elements for proper nutrition, and do this with the feeds that the other fellow throws away. Take alfalfa hay, for instance; to give the horse the 22.5 pounds dry matter required we should give 26 pounds per day; this would furnish 2.75 pounds of protein; 9.49 carbohydrates; 0.35 pounds of fat and 24.7 thousand calories of fuel values and while alfalfa hay is considered the best single ration we have, yet we have given the horse nearly twice as much protein as he requires, while idle and have fallen short of the carbohydrates and fuel values required and at a cost of 19½ cents per day.

Corn and alfalfa hay is the best compound known because the corn is low in protein and high in fat.

Alfalfa hay 18 pounds and corn 7 pounds, gives us 22.5 pounds dry matter; 2.45 pounds protein; 11.39 pounds carbo-hydrates; 0.55 pounds fat, and 28,000 calories of fuel value and with hay at $15.00 and corn at $40.00 per ton would cost 27½ cents per day, and while this ration has a splendid balance the other fellow is willing to pay so much more for the corn than it is worth, that we cannot afford to feed it to idle horses.

The following suggestions for compounds are based upon the proper balance required and by considering the manure values we can make a better economic showing.

(1)			
Wheat Straw	30 lbs.	$ 2.00 ton	3c per day
Beet syrup	8 lbs.	20.00 ton	8c per day
			11c
		Manure	7c = 4c per day
(2)			
Wheat Straw	20 lbs.	$ 2.00 ton	2c per day
Alfalfa Hay	10 lbs.	15.00 ton	7½c per day
Beet Syrup	6 lbs.	20.00 ton	6c per day
	36 lbs.		15½c per day
		Manure	7c = 8½c per day
(3)			
Oat Straw	30 lbs.	$ 5.00 ton	7½c per day
Beet Syrup	4 lbs.	20.00 ton	4c per day
	34 lbs.		11½c per day
		Manure	7c = 4½c per day
(4)			
Wild Hay	30 lbs.	$ 8.00 ton	12c per day
Beet Syrup	4 lbs.	20.00 ton	4c per day
	34 lbs.		16c per day
(5)			
Alfalfa Hay	26 lbs.	$15.00 ton	19½c per day
		Manure	7c = 12½c per day
(6)			
Alfalfa Hay	15 lbs.	$15.00 ton	11¼c per day
Wheat Straw	20 lbs.	2.00 ton	2c per day
	35 lbs.		13¼c per day
(7)			
Wild Hay	30 lbs.	$ 8.00 ton	12c per day
Wheat Bran	4 lbs.	34.00 ton	6¾c per day
	34 lbs.		18¾c per day
		Manure	7c = 11¾ per day
(8)			
Wheat Straw	30 lbs.	$ 2.00 ton	3½c per day
Wheat Bran	6 lbs.	34.00 ton	11¼c per day
	36 lbs.		14¾c per day
		Manure	7c = 7¾c per day
(9)			
Oat Straw	30 lbs.	$ 5.00 ton	7½c per day
Wheat Bran	4 lbs.	34.00 ton	6¾c per day
	34 lbs.		14¼c per day
		Manure	7c = 7¼c per day

The straw and wild hay in these compounds are figured so that about one third will be refused by the animal and still give enough dry matter.

Some of the compounds are not as rich as others, but you will find the stock will do well if plenty of good water is available with salt placed where they can get it. In many cases in this country the water contains some salt and alkali and stock gets enough salt in the water. They will need no salt when on beet syrup for the reason they get enough in the syrup.

IDEAL FEED MILLS

One and Two Horse—Ungeared

The Ideal feed mills are without doubt the fastest and best plain (ungeared) sweep feed mills in the world for grinding dry ear corn (husks off) or shelled corn into coarse or medium grade meal, and being of few parts can be maintained at a slight expense and will last a lifetime. The crusher is so designed to avoid the common trouble of shelling the corn from the cob as in other machines using wide dome and numerous fingers. Shipped regularly with coarse burrs, but fine burs can be furnished extra.

All sizes of Stover Feed Grinders and Alfalfa Cutters.

Send for Bulletin **Live Stock and Ground Feed.**

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

The Evergreen Northwest Invites You this Winter

A few hours to the west of you is a land of mild temperatures, salt breezes, green forests, and beautiful, busy cities.

Now this winter, in your rest time, recreation, inspiration, and the sight of sport, booming business and preparations for war are offered you in

THE GREAT PACIFIC NORTHWEST

WASHINGTON OREGON BRITISH COLUMBIA

Farmers are learning that vacations pay them, as well as other business men. Farmers who take vacations show in cultivating themselves the same care and foresight that they give to soil building.

You, too, will find that money spent in improving your health and broadening your outlook is well invested.

As you enjoy the amusements and study the industries in the cities of this territory of unlimited resources, as you go about in refreshingly mild temperatures by train, automobile and boat, you will get a sense of strength and enthusiasm that will abundantly repay any expenditure of time and money you may make.

Write to us for any information
Pacific Northwest Tourist Assn.
Dept F, L. C. Smith Bldg.
SEATTLE, WASH.

Flowers bloom every month in the year in the Evergreen Northwest--the finest all-year-'round climate in the World.

N3

It pays to be suspicious whenever you find a sick hog in the herd. Pork prices are too high to take chances with hog cholera.

WHERE HE DREW THE LINE

A farmer in one of the neighboring townships who had gone into scientific poultry raising hit upon the scheme of marking each egg with certain data in indelible ink. His idea was to find which variety of chickens laid best, and then, when the eggs were hatched, attach a tag to the chicken's legs. He soon found that his hired man was negligent about properly inscribing the eggs. One day not an egg was marked, and the farmer read him the riot act.

The hired man listened in sullen silence until the boss finished, then he said: "See here! You'll have to get another man!"

"Why, Jim, you're not going to leave me after working for me six years?"

'Yes, I am," returned the hired man. "I've done all sorts of odd chores for you without a whimper, but I'm durned if I'm going to stay here and be secretary to any durned hen!"

HOME

HOW TO MAKE BREAD

There is a wide margin for improvements in the methods of bread making. Besides the manipulating process the making of good bread involves some other consideration of no secondary importance. With imperfect or bad materials it is useless to attempt its production. The flour or meal must be of the best obtainable. There are several methods of testing wheat flour which are available to purchasers although none of them afford positive indications. Good flour is not sensibly sweet to the taste but bad flour often is. This is owing to the presence of glucose resulting from chemical changes in the grain from partial malting. Extreme whiteness is a good indication, as partly malted grain is discolored in the process of change. Good flour is tenacious and unctuous to the touch. When thrown against the wall it should adhere and not fall readily. It does not feel crispy and when formed into a ball in the hand adheres together like a ball of snow. To the sense of smell it is sweet and pleasant and when taken into the mouth forms a glutinous mass free from all disagreeable taste. The nutritive quality of flour depends upon the proportion of gluten which it contains. In the best specimens ten or twelve per cent is found.

Bad bread is by no means always chargeable to imperfect materials. Hundreds of families who procure and use the most perfect flour subsist upon bread of a very inferior quality. Some housekeepers assert that they can have no "luck" in making good bread; their loaves are always heavy or sour or doughy or burnt and they give up experimenting and become discouraged. As with good materials everyone can prepare good bread there should be no want of success. Success depends in a great measure upon good judgment, faithfulness and patience in working and in using the right materials. It is quite preposterous to present a filed recipe and set it up as in infallible guide in this department of household labor. The method adopted in my family which affords perfect white bread is as follows:

Sift five pounds of good flour and put it in an earthen pan suitable for mixing and kneading. Have ready a ferment or yeast prepared as follows: Take two potatoes the size of the fist, boil them, mash and mix with half pint of boiling water. A fresh yeast cake of the size common in the market is dissolved in water and the two solutions mixed together and put in a warm place to ferment. As soon as it begins to rise or ferment, which requires a longer or shorter time as the weather is warm or cold, pour it into the flour and with the addition of a pint each of milk and water form a dough and knead for a full half hour. Form the dough at night and allow it to stand until morning in a moderately warm place, and then mould and put in pans and let it remain until it has become well raised, then place in a hot oven to bake. The points needing attention in this process are several.

First the flour must be of the best quality; second the potatoes should be sound and mealy; third the yeast cake is to be freshly prepared; fourth the ferment must be in just the right conditions; fifth the kneading should be thorough and effective; sixth the raising of the dough must be watched that it does not proceed too far and set up the acetic fermentation and cause the bread to sour; seventh after the dough is placed in the pans it should be allowed to rise or puff up before placing in the oven; eighth the temperature of the oven and the time consumed in the baking have much to do with the perfection of the process. If this method is followed with the exercise of good judgment and ordinary skill, white bread of the highest perfection will be uniformly produced.

Unfermented or "cream of tartar" bread is never placed upon the table in my family. There are special dietary or sanitary reasons for its exclusion. All "quick-made" bread is usually prepared in haste, and the adjustment of acid and alkali is apt to be imperfect. If tartaric acid or cream of tartar is used with the soda there remains in the bread after making a neutral salt, the tartrate of soda, which is diffused through the loaf and is consumed with it. This salt has aperient properties, in fact is a medicine, and thus at the daily meal those who use bread made with "powders" or with cream of tartar are taking food and medicine together. If there is any form of bread more delicious than another or more conducive to the sustenance of the physical and intellectual powers it is that made from unsifted wheat meal. Corn bread, too, is excellent and most nutritious. It contains a large amount of oil not found in other grains which adds greatly to its value. I think there is far too little of this used. The old fashioned dish of corn "pudding and milk" is now nearly as obsolete as that of "bean porridge," and may we not with much reason attribute the physical degeneracy of the present race to the radical changes in the forms of food? Regarding the matter from a chemical and medical point of view, it certainly would be difficult to select better or more healthful forms of human nutriment so well calculated to build up and sustain a "sound mind in a sound body" as the two above named. They are easy of digestion and assimilation, and contain all the chemical substances or organic and inorganic constituents needed to nourish the body and mind.—Mrs. M. E. Underwood.

SOME TESTED RECIPES

Roast Nut and Barley Loaf.

Make a brown sauce with two tablespoonfuls of olive oil, one-half of a cupful of browned flour, and use water or vegetable stock for thinning; chop one large onion fine, and fry it in one tablespoonful of oil or butter, and mix the onion and the sauce with two cupfuls of cold boiled pearl barley, one cupful of finely ground roasted peanuts, one cupful of fine bread crumbs, one teaspoonful of salt and one saltspoonful of pepper. With the hands mold into a loaf, place in a roasting pan which has been well buttered and let cook in the oven for ten minutes; then add one tablespoonful of butter and one cupful of hot water, and baste every five minutes for half and hour. Make a brown sauce in the same pan or serve with caper sauce. Garnish, if brown sauce is used, with English savory croquettes.

Nut Filled Potatoes.

Bake until soft and mealy six good sized potatoes, prick to let out steam and then cut directly in halves where they were pricked and with a sharp spoon remove the pulp from the skins, turning into warmed mixing bowl; mash thoroughly, adding a small cupful of rich milk or cream, salt and paprika to taste, one tablespoonful of minced parsley, one tablespoonful of melted butter, a pinch of poultry seasoning and a small cupful of nut meats that have been passed through the meat chopper; beat with a fork until very light and creamy and return to the shells, which after dusting with browned bread crumbs, are placed in a hot oven for ten minutes to crisp and brown; serve garnished with small bunches of parsley.

Nut Loaf

Half pint shelled roasted peanuts, ½ pint peas, 1 cup milk, 1 teaspoonful pepper, ½ teaspoonful kitchen bouquet, 2 cups bread crumbs, 1 teaspoonful salt, 1 heaping tablespoonful butter, 1 egg.

Soak peas over night, drain, then boil tender, drain, press through sieve, add peanuts chopped, bread crumbs, etc., and egg well beaten. Pour into buttered baking dish and bake in moderate oven one hour. Try one pint canned peas.

Pecan Sausage.

1 pint pecan meats, 1 egg, ½ teaspoonful salt, 1 cup cooked cream of wheat, dash of pepper, sage to taste.

Chop nuts, add cream of wheat, seasoning and egg beaten. Make into round cakes and bake twenty minutes in quick oven. Serve with cream or tomato sauce.

Cream Puffs.

Put two level tabelspoons of butter and a half a cupful of water over the fire. When boiling add hastily half a cupful of flour; stir over the fire until smooth; take from the fire and when cool break in one egg. Beat well and then add a second egg. Beat until smooth and light. Drop by tablespoonfuls on a greased, shallow pan and bake in a moderate oven for half an hour. Fill with custard or whipped cream. Reheat before filling.

Yorkshire Pudding.

1 cup milk, 1 cup flour, 2 eggs, ¼ teaspoonful salt.

Mix salt and flour and add milk gradually to form a smooth paste; then add eggs beaten light. Cover bottom of hot pan with tried-out beef fat, pour mixture in pan one-half inch deep. Bake twenty minutes in hot oven.

Nut Cake.

½ cup butter, ⅞ cup sugar, 3 eggs, 2½ cups flour, 2 teaspoonfuls baking powder, 2-3 cup milk, ½ teaspoon salt, 1 cup chopped nuts.

Cream, butter and sugar; add beaten eggs, then milk and flour one-third at a time. Cake should be of a batter consistency from the time the first flour and milk are added. Add nuts last.

Orange Fritters.

1 cup flour, 1 teaspoonful baking powder, 3 tablespoonfuls powdered sugar, ¼ teaspoonful salt, 1-3 cup milk, 1 egg.

Mix and sift dry ingredients; add milk gradually and egg well beaten. Peel an orange and separate into sections. Remove seeds carefully; dip sections into batter and fry in deep fat.

Salad Dressing.

2 eggs, ¼ cup vinegar, ¾ cup water, 1 teaspoonful butter, 2 tablespoonfuls flour, 2 tablespoonfuls sugar, ½ teaspoonful mustard, ½ teaspoonful salt.

Mix dry ingredients and make into smooth paste with part of water, add to remainder of water and vinegar, then add to eggs and cook over boiling water until thick. For fruit add two tablespoonfuls more of sugar and as much whipped cream as salad dressing. If the vinegar used is very mild, use more vinegar and less water.

STRETCHING THE MEAT

It is possible to make a little meat go a long way. Meat pies and meat stews offer a variation for every day in the month. In these combinations a small piece of meat can be stretched to flavor a big dish. Try these hot savory dishes, the whole family will like them.

Fish Chowder.

Rabbit, fowl, or any meat may be used instead of the fish, or tomatoes instead of milk. Carrots may be omitted.

1½ pounds fish (fresh, salt, or canned), 9 potatoes peeled and cut in small pieces, 1 onion, 2 cups carrots cut in pieces, 3 cups milk, pepper, 3 tablespoons flour, 1 tablespoon fat.

Fry chopped onion in fat for five minutes. Put fat, onions, carrots and potatoes in kettle and cover with boiling water. Cook until vegetables are tender. Mix flour with one-half cup cold milk and stir in liquid in pot to thicken. Add the rest of the milk and the fish which has been removed from the bone and cut in small pieces. Cook until the fish is tender, about 10 minutes. Serve hot.

Tamale Pie.

2 cups cornmeal, 2½ teaspoons salt, 6 cups boiling water, 1 onion, 1 tablespoon fat, 1 pound Hamburg steak, 2 cups tomatoes, ½ teaspoon cayenne pepper or, 1 small chopped sweet pepper.

Make a mush by stirring the cornmeal and 1½ teaspoons salt into boil-

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ing water. Cook in a double boiler or over water for 45 minutes. Brown the onion in fat, add the Hamburg steak and stir until the red color disappears. Add the tomato, pepper and 1 teaspoon salt.. Grease a baking-dish, put in a layer of cornmeal mush, add the seasoned meat, and cover with mush. Bake 30 minutes.

Potted Hominy and Beef.

5 cups cooked hominy, 4 potatoes, 2 cups carrots, 1 teaspoon salt, ¼ pound dried beef, 2 cups milk, 2 tablespoons fat, 2 tablespoons flour.

Melt the fat, stir in the flour, add the cold milk, and mix well. Cook until it thickens. Cut the potatoes and carrots in dice, mix all the materials in a baking dish, and bake for one hour.

Shepherd's Pie.

2 cups cooked meat, 1 cup stock, 1 tablespoon fat, 1 tablespoon flour, ¼ teaspoon salt, pepper, 2 cups mashed potatoes.

Put diced meat into a baking dish. Add brown sauce made of fat, flour, seasonings and stock. Cover top with mashed potatoes, brush with fat and brown in oven.

WATCH YOUR STEPS

Housekeepers May Save Many Steps In Routine Tasks.

Edith C. Salisbury, University of Arizona A. C.

Housekeepers in town and country have taken one long stride ahead when they have learned how to save steps in routine work." There is nothing particularly new in this sentence, which appeared in a recent periodical, for it has been repeated time and again by the home demonstrators as they watch the waste of time and effort in ranch homes. Women have been told they must be more economical in buying food, clothing and other supplies, because that means saving money. They have been cautioned to save this, that, and the other, because just ordinary keeping soul and body together is expensive business these days. And now comes along this didactic person who says we should save steps. One day as we sat on the porch and watched the blue and gray, red and brown haze shift over the Arizona mountains and let the langorous Arizona air seep into nerves and muscles a ranch woman told me her experience in trying to save steps. Her story was this:

"When I began to give some serious thought to this question of saving steps the first thing that impressed itself on my mind was that up to the present time steps round about the house, taken in doing routine tasks was one thing I had never considered at all. But now, just for amusement or curiosity, I began figuring on the problem, 'Can a woman do her housework equally well and walk less?' I hadn't figured long before I was what my Yankee neighbor calls 'dumbfounded' at the amount of space I had been covering in the course of a week, just going about the house. You may be interested in the result of my calculations, for I dare say there are lots more farm women who hold quite as high a record for pedestraianism as I do. These are some of my calculations: Fifteen steps or 30 feet from cupboard in the kitchen to table in the dining room. Setting and clearing this table three time a day means 30 trips necessary to cover that distance; that is equal to 900 feet or about 1 2-5 miles in one week. This distance from cook stove to pantry is about 40 feet, which I cover in 20 steps, and the average daily trip over this distance is 20, making a total of 1,600 feet in a day. Calculating this record for a week gives a total of 2 miles walked each week from the stove to the pantry and back. I have counted 40 steps from the kitchen sink to the pump outside, and part of those steps are up and down. I traverse 160 feet each time I go for a pail of water; if I make that journey 15 times a day, as I have done, it amounts to more than 3 miles in a week. And what good has the walking trip done me?

"Then there are the steps upstairs, steps here, there, and everywhere, many of them unavoidable, many of them seem unnecessary now, as I recall them. But when I estimated that in the ordinary oft-repeated tasks, such as I have shown you, I had been walking over 6 miles each week, I was not surprised that I was often footsore and back weary by bedtime and had little inclination to walk across lots to call on my neighbor.

"When I set about figuring how I could have saved steps between the stove and pantry I found it could be done quite simply. In the attic I found and old cupboard of three shelves and two small drawers. I had this fastened to the wall above the kitchen table, which I moved as close to the stove as possible. In this cupboard I put receptacles of various kinds. Most of them were empty tin boxes of 1, 2, and 3 pound size, but they would contain enough flour, sugar, cereals, and other staple ingredients to last several days. Once a week, or whenever necessary, I replenished the cans in the cupboard, carrying them all on a tray to the pantry or storeroom, filling them, and bringing them all back on the tray in one trip. That one experiment proved so successful that I next tried decreasing the walking distance between cupboard, stove, and dining table. I spent $10 in order to buy a dinner wagon or a serving table on wheels. But already I have had results that more than balance that expediture. A plan to shorten the journey from the kitchen sink to the source of water supply outside the house is to be my next consideration, but I do not anticipate it will be either difficult or expensive, since we already have a gasoline engine and a water tank. Strange, is it not, how many farm home already equipped with gasoline power for farm purposes fail to use that power in the house?" The answer to that query is, Yes, passing strange, and especially since it is a common condition in rural communities everywhere, and there are dwellers in every one of these communities who possess ordinary intelligence and foresightedness in most affairs, particularly those that have nothing special to do with women's work in the home.

In many ranch homes in Arizona the distance between one working center and another is less than those above mentioned, which occasionally are found in the older settled sections of the State. But in all ranch homes there are more unnecessary steps than there should be.

SKIMMED MILK IN COOKING

Skimmed milk is usually so abundant on the farm that its value in the diet is overlooked. Quart for quart it contains a little more protein and a little more milk sugar than whole milk, but much less fat. Because of the lack of fat it cannot be used in place of whole milk for children. It is, however, a most valuable adjunct to the diet on meatless days, and the cheapest protein food for the farmer's table.

Aside from its food value skimmed milk adds much to the quality and flavor in cooking, and is a first aid in converting left-overs into palatable dishes. Milk used in bread in place of water adds as much protein to a pound loaf of bread as there is in one egg. It gives a softness of texture to bread that adds particularly to the palatability of graham or bran bread.

Cereals cooked in milk instead of water gain in flavor and food value. A particularly nourishing dish is prepared by cooking down 10 to 12 parts of skimmed milk to one of rice, oatmeal or other cereal. Where this is to be served for a dessert, use one-fourth cup of rice and one-fourth cup of sugar to three cups of milk. Cook until thick. This can be used in place of cream with stewed fruit.

Milk soups or purees are made with skimmed milk and the pulp of beans, peas, onions, potatoes or celery. Fish chowder made with milk is a most substantial meat substitute. A few oysters or a little meat stock will suffice to lend flavor to a milk soup.

Skimmed milk thickened with flour and served hot on hard stale bread or toasted biscuit makes a comforting cold-weather dish for breakfast or supper.

White sauce or cream dressing can be used with bits of meat to make attractive dishes, or with warmed-over vegetables.

Cheese added to the sauce gives another variation. This can be served on rice, maccaroni, hominy, or cauliflower.

Skimmed milk can be used in making such desserts as blanc mange, junket, tapioca, custard, cornstarch and bread puddings. In fact skimmed milk is an ever ready help in many forms of cooking.

PILE OF EMPTY TIN CANS

To my mind a farm is not a farm unless it has a few dozen small fruit trees to supplement the apples and the peach orchards. No one side of the big task of farming has been more neglected in the last 10 years than that of the growing enough small fruits and berries for family use. Here and there a man has kept it up and saved money and gained in satisfaction by it.

Two miles down the road from me a young man and his wife have begun farming. They are living in a four-room "box house." I am making a bet with myself that they will be living in the same unpainted house 10 years from now. They are starting off wrongly. One thing will prove this.

In one corner of the yard there is a pile of empty, rusting tin cans as high as your head. These are farm folks, mind you, whose sole income must come out of the dirt. Those cans contained peaches, apples, berries corn, beans and other farm products that might just as well have been grown in that farmer's garden.

I don't know why it is that the farmer of today is buying the canned stuff at the store. As boys, we used to see a can once in a while, but it contained cove oysters. It did not know that there was a canning industry at that time. Now, no boy can grow up in the country without getting acquainted with the lithographs of tomatoes, corn, peas and peaches on the outside of the quart tin can.

There is no doubt but a few square rods devoted to berries, small fruits and vines will pay the man who gives them any care.

THE DARKEY AND THE MULE

An old negro went into a drug store in Richmond and, going up to the proprietor, said: "Say, Boss, will you be so kind, suh, as to call up de colonel on de telephone for me?"

"Yes." And he called the colonel. The old darkey said: "Colonel, dat ar mule done stall right in de main street right out here in front of de store.

"Yass, suh; I done tied strings 'round his ears, but he didn't budge.

"What's dat? What's dat? Yass, suh, I build a fire under him, but it didn't do nuthin' but scorch de harness.

"Yass, suh; yass, suh; I took de things out, but he wouldn't budge.

"Yass, suh; yaas suh. What's dat?

"No, suh; no, suh, colonel, I didn't twist his tail.

"Yaas, suh; yass, suh; another gemman twis' his tail; he look like a northern gemman.

"What's dat, colonel? Yaas, suh; der tuk him to de hospital.

"No, suh; no, suh; I ain't heard yit."—Collier's Weekly.

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LIVE STOCK

THE PIG VERSUS THE FEEDING STANDARDS

The Pig Knows Best What He Wants and When He Wants It.

By John M. Evvard, Iowa Experiment Station.

Is a pig able to feed himself to best advantage when allowed free access to separate feeders "Free-Choice" style containing these feeds: Shelled corn, meat meal tankage, wheat middlings, bone ash, charcoal and rock salt?

Or can these feeds be fed to better advantage allowed by man according to the Dietrich-Illinois; Kellner; or to Walff-Lehmann standards?

This is the question we have attempted to solve and the results tell their own story.

A number of groups were fed, but four of them are especially interesting; they are as follows:

Group I—Fed according to the "Free-Choice" System.

Group V—Fed according to the Dietrich or Illinois System—water limited according to standard.

Group VI—Fed according to the Kellner System (Kellner, by the way, is the late German scientist who has done so much for scientific stock feeding).

Group VII—Fed according to the Walff-Lehmann System (both Walff and Lehmann were Germans).

Group I was self-fed the different feeds in separate feeders, whereas Groups V, VI and VII, fed according to the different standards, were allowed their feeds twice daily, these feeds being mixed together and fed "hash" style in order to get them to consume the nutrients as the standard called for them.

To demonstrate how these pigs weighing practically 41 pounds at the start, gained during 150 initial days we present the following table:

Weights and Gains of the Pigs the First 150 Days.

Group No.	Final Weight	Average Daily Gain
I	225.2	1.21
V	187.6	.97
VI	174.8	.89
VII	144.8	.69

Note carefully that the most rapid gains during the first five months after weaning were produced in the "Free-Choice' self-fed group, and the older the standard the less efficient the gain.

We are interested not only in the first five months of feeding following weaning, but also in the time taken, and feed required to reach the 225-pound weight as well as the 300-pound weight. All pigs were kept on the scheme of feeding as mentioned during the six months following weaning, at which time they were all put upon the "free-choice" system, inasmuch as some of the feeding standards only called for nutrients to be fed up until the pigs were approximately 8 months of age.

Record Up to 225 Pounds Weight

Group No.	No. Days Taken (Days Old)	Feed Required for 100 Pounds Gain: Corn	Wheat Middlings	Meat Tankage	Total
I	229	356	45	43	444
V	268	403	45	45	493
VI	171	353	55	57	465
VII	294	380	46	42	468

Note carefully that the least number of days was required where the pigs were self-fed "free-choice" style up to 225 pounds weight, or namely, 229 as contrasted with the Dietrich standard of 268, or 39 days longer; the Kellner standard 2.71, or 42 days longer, and the Wolff-Lehmann, 294 days, or 65 days greater time. We cannot help but believe that it would have taken longer yet to have matured these hogs to 225 pounds if the "free-choice" scheme of feeding has not been inaugurated in the standard feed lots, or more specifically, if the pigs had been had fed continuously rather than self fed according to the "free-choice" scheme.

Now, up to 300 pounds we have a little different story, and we find that pig feeding is like foot racing in that the system of feeding which is best for making 200 to 225-pound hogs is not necessarily the best for making 300 to 400-pound hogs any more than the 100-yard dash man is equally fitted for running the two-mile run. It requires a different kind of man to run the two-miles than it does the short runs. And so it is in pig feeding. The simile can be carried on a comparative basis which, explained, means that some pigs are adapted to maturing at earlier weight than others, and perhaps are best when these weights are kept in mind, whereas certain schemes of feeding will produce a 225-pound hog to maximum advantage, but will fail when it comes to making a 400-pound hog.

The number of days required in Group 1 to reach 300 pounds was 323. It took 342 in the Dietrich-fed group, or 19 days longer; 329 in the Kellner group, or 6 days longer, and 346 in the Wolff-Lehmann group, or 23 days longer.

But the feed required for 100 pounds as tankage, bran, oil meal, peas, beans, oats, barley. The clovers, alfalfa, peas, beans, vetches, etc., are also of much value to the brood sows. Special emphasis should be laid on the condition of the bowels during pregnancy and particularly at farrowing, the special danger to be avoided being constipation. The grain ration should be given as slop, and toward the close of gestion oil meal or a small amount of flaxseed meal should be introduced into the ration.

Corn should not be fed in large amounts to breeding stock, because it does not furnish enough bone and muscle-forming constituents to properly develop the unborn pigs.

During the winter more care will be needed to keep the sow in good condition on account of the absence of pasture. Not only does the hog's system crave feed, but more or less bulk is demanded. To offset the lack of green feed nothing surpasses roots. These may be sliced or pulped and mixed with the grain, or may be given whole as a noon feed. However, care must be used in feeding roots, as they are laxative in effect, and if fed in excessive amounts may bring about profuse action of the bowels. Some eastern farmers recommend the use of clover or alfalfa hay, sheaf oats, or corn fodder to supply the bulky requirement of the ration. Charcoal, ashes, lime and salt should be accessible at all times. During the entire period care should be taken to keep the system well toned. The

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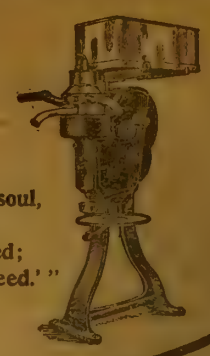

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sow should become accustomed to being handled and should look upon her attendant as a friend.

The brood sows may run together up to within two weeks of farrowing time. Then it is well to separate them, placing each sow by herself in a yard with a small house, which should be dry, airy and clean. A great deal of exercise will not now be necessary. The feed should be reduced somewhat, and if there is any tendency to constipation, a slight change of feed may be necessary.

AGE AFFECTS RATE AND ECONOMY OF GAINS IN HOGS

That pigs on a ration which approximately supplies their needs can profitably be carried to a heavier weight than that at which many hogs are marketed is shown by two experiments recently completed at the Ohio Experiment Station to determine the effect of age on the rate and economy of gains. Shortly after weaning time in the first test the pigs were placed on a ration of ten parts of corn, four parts of middlings, and one part of tankage. In the second test a ration of corn and tankage was fed. Beginning with the ration of eight parts of corn to one part of tankage the proportion of corn was increased one-fourth part weekly for the first 24 weeks and remained constant thereafter. The plan followed in the second test seemed more efficient. Even less supplemental feed than was used might give as good results. The table shows by 100-pound intervals the average results of the two experiments.

EFFECT OF AGE ON THE RATE AND ECONOMY OF GAINS

	Birth to 100 lb.	100 to 200 lb.	200 to 300 lb.	300 to 400 lb.	400 to 500 lb.
Number of pigs	25	20	15	10	5
Average daily gain, pounds	0.705	1.745	1.720	1.816	1.694
Average time required, days	137.72	57.05	58.33	53.2	60.8
Feed per 100 pounds gain, pounds	318.231	361.831	434.734	450.142	497.233

In the first experiment the rate of gain was greater for each successive interval until a weight of 300 pounds was reached. For the last two intervals it decreased each time. In the second test from 100 to 200 pounds in weight the pigs gained more rapidly than from 200 to 300 pounds but not as rapidly as from 300 to 400 pounds.

With one exception the feed required per unit of gain increased as the pigs increased in weight. This is to be expected when the character of increase in live weight is taken into account. Fat is costly to produce and is high in value. Even the comparatively high feed requirement for gains produced by the hogs between 400 and 500 pounds would, in many localities, permit a fair profit. Far more hogs should be carried to at least 300 pounds.

If heavy hogs sell at the premium the higher value of their carcass justifies, they can profitably be carried to a heavier weight than that of the average hog marketed today. Particularly is this true when the feed supply is above normal and the number of hogs below normal.

MILK BY-PRODUCTS DO THEIR BIT IN PORK MAKING

By John M. Evvard, Iowa Experiment Station.

Hundreds of letters are received annually inquiring as to the value of skim milk or buttermilk for pig feeding purposes.

Now skim-milk and buttermilk are of about equal value, both being of practically the same composition and both giving approximately the same results in feeding experiments. The whole milk is skimmed once to get the skim-milk, but buttermilk is really what is left from the second skimming. The cream is taken from the whole milk and then the butter is taken from the cream, in reality the practical equivalent of skim-milk is left as buttermilk in the churn. In truth, we now make practically all of our culture buttermilks which we buy at soda fountains through the use of skim milk, one of which is particularly famed, namely;—the Bulgarian Buttermilk, a skim-milk bacteriological product.

The old rules proposed years ago in order to find out the value of a hundred pounds of skim-milk hardly cover the issue nowadays although they have proven useful in their time. Two of these rules are particularly interesting, the one by Hoard given by Henry and Morrison is as follows: "To find the value of 100 pounds of skim-milk when fed alone, multiply the market price of live hogs in cents per pound by 5, basis the money value of 100 pounds of skim-milk with $10.00 hogs is 50 cents; $20.00 hogs, $1.00. In reality though this relationship is based between pounds of skim-milk and price of hogs per hundred pounds there is very little relationship between the price of hogs and the value of skim-milk; this will be shown shortly.

The Gurler rule runs as follows: "The value of 100 pounds of skim-milk when fed along with corn to fattening hogs is half the market price of corn per bushel." On this basis, therefore, the value of 100 pounds of milk is 50 cents with $1.00 corn, and $1.00 with $2.000 corn. This relationship, therefore, is on the basis of the price of corn rather than the price of hogs.

In order to determine the value of skim or buttermilk we have done considerable work with buttermilk, and the figures secured are applicable to skim-milk.

In an average of four trials in which buttermilk was fed in limited quantity, from 2 to 10 pounds per head daily, to young growing and fattening shotes this Section has found that a hundred pounds of buttermilk replaces 6 pound of corn and 6 pounds of meat meal tankage. The tests were run in this way: One group of pigs was self-fed on corn and tankage "Free-Choice" style; another similar group out of the same dams and sire was fed exactly this same ration with the exception that they were given some buttermilk daily. Naturally when they got the buttermilk they would hold up on the corn and tankage.

Physiologically their demands were different with the butter-milk in their stomachs and alimentary tract than where it was not present. By figuring we arrive at the above deductions, namely;—that 100 pounds of buttermilk saved 6 pounds of corn and 6 pounds of meat meal tankage.

Pricing the corn at $1.68 a bushel or $60.00 a ton the corn replaced is worth 18 cent sand the tankage replaced at $80.00 a ton is 24 cents, making a total replacement value of 42 cents, hence 100 pounds of buttermilk in these particular experiments was worth 42 cents a hundred pounds. As corn and tankage go up the buttermilk becomes more valuable; as corn and tankage go down it becomes less valuable.

Had these tests been run today and the buttermilk figured on the basis of the above rules the values would be much in excess of 42 cents or with the Hoard rule almost twice as much or about 90 cents; with the Gurler rule, counting the corn at $1.68 a bushel, equals 84 cents or exactly twice the value found. It is readily to be seen, therefore, that buttermilk is worth the price of materials necessary to replace it if buttermilk is not used and corn plus tankage replaces buttermilk.

Let us go further with this proposition and see the effect of feeding buttermilk (remembering always that when we speak of buttermilk we might just as well speak of skim-milk) in large quantities, giving young growing pigs of 56 pounds weight all the buttermilk they possibly can drink keeping it before them continuously until they reach the weight of 300 pounds. Two groups were fed, Group I received shelled corn self-fed plus 60 per cent meat meal tankage self-fed plus wheat middlings self-fed plus rock salt self-fed, all feeds allowed "Free-Choice" style in separate feeders. Group II was fed exactly the same excepting that buttermilk was kept continuously before them in addition to the other feeds.

And how the buttermilk pigs did gain! They relished the buttermilk, coming as it did from the College Creamery where the cream before churning was thoroughly pasteurized, thus eliminating disease producing organisms. The following table shows the number of days required to reach

(Continued on page 15)

Hogs Will Help Win the War

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32x4	35.15	25.30	3.60
33x4	30.40	21.67	3.95
34x4	31.25	22.15	4.10
35x4	44.15	24.90	4.50
36x4	33.10	23.62	4.55
31x4½	48.40	34.50	5.15
35x4½	43.55	31.00	5.25
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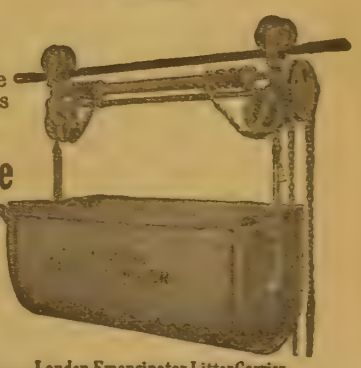

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Good as New After Four Years Use

H. J. Slotten, owner of Walhala Stock Farm, Somers, Iowa, writes: "The Litter Carrier has been in daily use for four years and has not given us a bit of trouble—is as good today as when I bought it. It is surely a labor saver; can clean the barn in half the time and get the manure away from the building with little labor."

Louden Feed and Litter Carriers

Have wide roller-bearing trolleys, powerful lifting device—no hit-or-miss ratchets. A 10 or 12 year old boy can operate them easily and safely.

Built in various styles to suit every barn; tracks arranged to meet your special needs.

Cost of equipment is a trifle compared to the enormous saving effected by it.

A postal will bring you our big illustrated Barn Equipment Catalog—write for it.

Louden Double End Feed Carrier.

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Murray Utah and Idaho Falls, Idaho.

DAIRYING

INDIVIDUALITY OF COWS

By W. H. Underwood.

All milk producing cows are not by any means the same. There is the difference between gain and loss and then there is the inconceivable yield with its proportionate profit. There is the 28,000 pound cow with her extraordinary profit, the 2,000 pound cow with her loss and there is the 8,000 pound cow with her fair gain to her owner. Where is the difference?

The poor or profitless cow is a cow to be sure, but let us be thankful that this kind is growing fewer and fewer. On the other hand, take the cow with the ability to give 10,000 to 12,000 pounds of milk in a year and we have a cow of the required "milk power." We must now learn the peculiarities of this machine as we would the peculiarities of any other machine equally intricate and comply with them if we are to secure the best results. If one kind of feed does not appeal to her appetite we should try some other kind. We might have to feed her salt every day (as we should) or we might have to give her water before her grain or perhaps she would relish her grain sprinkled over her silage. Straw will often be eaten to good advantage if some sorghum molasses is mixed with water and poured over it. It always pays to encourage a cow, to "baby" her. It is she that is making the milk and she has complete control over it.

There is no doubt but that the propensity to give large quantities of milk is transmissible. There is no doubt but that the power to make and give milk can be increased and strengthened if the propensity be present. In athletics good runner improves with training. In racing, a horse must needs be trained to improve the gait and to increase the speed. A race horse is also fed and cared for that he may be speedy. Why then cannot a cow by proper feeding, training and care be made to do that for which she was born? And if this or any other characteristic is developed in the dam, it stands to reason that she will the more likely transmit it to her offspring.

Individuality in a cow is evidenced by superior development in all her parts and the re-appearance of these traits in her offspring. The prepotent dairy sire imprints his individuality on his offspring with unmistakable exactness. Moreover the individuality of the owner is shown in the cows of his herd. If we see a herd that is well cared for and all of whose members bear resemblance to each other we conclude at once that the owner has an ideal cow in mind and that he is trying to build up his herd to a certain type.

Often we find a herd in which there is an old cow of superior merit and along with her we find perhaps three or four or even more all having the same characteristic. The old one is the dam, granddam, great granddam, etc., of these and her characteristics have been handed down to her offspring. If one has an animal of noteworthy qualities it will pay him well to keep her and attempt to get more like her from her. A herd that as a whole shows a herd individuality is one to be proud of if it is of a high grade.

WHAT MILK COSTS THE FARMER

W. H. Hibbard, University of Wisconsin.

To begin with, let it be admitted frankly that no cost accounting system can come as close to telling the exact cost of milk as can be done in the case of, let us say, canned peas or steel billets.

The reasons for this are clear. In the case of the peas the cannery company either hires them produced or buys them of the producer. They come from the land as green, raw material, for which there is a market price.

A few dairies are run in a similar manner but they are rare exceptions. Most milk is produced on farms upon which a complex set of operations are in progress. There are chickens and pigs and colts. There are often quantities of grain, large or small produced for the market. While these offer complexities to be solved they are not so difficult as the complexities due to the differences in men and cows.

True there are differences in men in connection with the production of peas and steel billets, but in these industries the work can be standardized and reduced to a routine. The machinery used by one company is about the same as that used by another.

In the dairy business there must be a very large number of managers. Their work is not reduced to a standard. It cannot well be standardized because the business cannot be done on a large scale. The dairy, for the most part, belongs on the family sized farm. It must be fitted to the peculiarities of each farm and of each farmer. In the dairy the machine is the cow and she is not made according to standard specifications.

The machines built by a manufacturing concern vary but little; the cows vary from 3,000 pounds to 20,000 pounds of milk a year. One farmer uses the poor cows and his costs are high. Another uses the good cows and his costs are low. Again one man because of his skill keeps cost down in spite of poor cow; another through his lack of skill and knowledge finds costs mounting high even with the best of cows.

These variations in men are found in all industries, but where only a few are needed the poorer ones are eliminated until the average of those remaining is high. Where, as in farming, a large number are needed, the average is necessarily low.

The biggest item in the cost of producing milk is the feed. At present the feed bill is high.

It is theoretically true that the man with the higher costs must be paid enough to cover the costs or he will quit. However, it does not follow that he will quit at once, and, to misquote scripture, "the poor producer we have always with us."

Now, what should the price be? It should certainly be somewhat above this average cost or the supply is likely to sag. It should be somewhat above in order to allow a profit on such portion of the feed as the farm has to buy. How much this is would be hard to determine. This price, whatever it may be, above actual cost allows the good producer to make a profit. It continues the low grade producers to such an extent as to insure a supply.

One fallacy must be guarded against. If in any community crops are short, and feed, such as hay, must be shipped in, it must not be supposed that the price will increase enough to cover these particular costs. The farmers so situated must be content to run at a loss so long as the main supply comes from districts of normal crops and normal prices.

Thus it appears that it is a very difficult matter to tell just how much any given quart of milk costs, and all but impossible to fix the selling price with any exact reference to cost. On the other hand the price must be high enough so that the great majority of producers are not producing at a loss. That some should produce at a loss is only normal. It happens in every line of production. These men are frequently going out of business and others like them taking their places.

Many men object to the fixing of prices through supply and demand, thinking that a fairer way would be on the basis of cost. Nevertheless, the quantity of milk on the market will always be a stronger factor in determining the price than any cost accounting figures. From the standpoint of the seller the strongest position will be that of alternative outlets—what is it worth for other purposes or in other places? The real purpose of cost accounting is to call attention to costs and to enable individual farmers to know whether it pays them to produce milk. If those who are producing at a loss will shift to some other line of farming it will be a good thing for all concerned.

Use SHARPLES To Prevent Cream-Waste

Sharples is the *only* separator that skims absolutely clean at *all* speeds. All other separators lose considerable cream when turned below speed—admitted by leading experiment stations and all separator manufacturers. Average loss from this cause is 10 lbs. of butter per cow per year, or 80,000,000 lbs. in the United States alone! Sharples would save it all!—due to the wonderful Suction-feed, which automatically regulates the milk-feed so as to insure clean skimming whether you turn fast or slow.

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SHARPLES
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Skims clean at any Speed
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CARE OF THE CREAM SEPARATOR

When using a cream separator on the farm the following precepts should be observed:

1. Put the separator in a bright dairy room that can be easily cleaned and that is always free from odors of all kinds.
2. Set the machine perfectly level and bolt it to a solid foundation, preferably concrete.
3. Oil thoroughly each time it is used.
4. Be sure that the parts are properly assembled, then start the machine gently and slowly.
5. Maintain the proper speed and keep and even pressure on the handle at all times.
6. When separation is completed, flush the bowl with a quart of skimmilk or warm water, but do not let skimmilk or water run into the cream.
7. Having set the cream into cold water and disposed of the skimmilk, take the bowl apart and rinse with lukewarm water.
8. Using hot water, washing powder and brushes, scrub all parts that come into contact with the milk.
9. Rinse with hot water, then place in boiling water or steam sterilizer for a few minutes and hang up to dry.
10. Wipe frame of separator and clean the room.

The necessity for thoroughly cleaning and scalding the separator every time it is used can not be too greatly emphasized. Cream from an unclean separator has very poor keeping qualities, soon develops a decided "off flavor" and becomes second grade. Cream of this kind brings financial loss to the purchaser whether he is selling it on a quality basis or not. Poor cream makes poor butter and poor butter returns a low price to the producer, whether the creamery is co-operative or otherwise.

The financial loss caused by unclean separators is frequently not fully appreciated because it is indirect; it is, however, none the less real. Good business management of the dairy therefore demands that the separator be thoroughly cleaned each time it is used.—United States Dairy Division.

SAVE THE CHILD

"Oh, hubby, such an instructive lecture. The gentleman told us what you eat, you become."

"Huh?"

"What you eat, you become."

"Take that allday sucker away from Tommy."

Hard work alone will not make farming profitable. Hard work is an important factor in successful farming, as almost every prosperous farmer will testify to, but good business management is just as important, and possibly more so.

Problems In Handling Tuberculosis

This Terrible Disease can be Eradicated When Rightly Managed.

(We are going to publish two or three articles on this important subject by Dr. W. G. Benner. Any one who desires the co-operative help of our State or Federal authorities should write to Dr. Hoggan State Veterinarin, Capitol Building, Salt Lake City, or to Dr. F. E. Murray Federal Building, Salt Lake City, who represents the government in the district.—Ed.)

(Second Article)

Federal and State Authorities

The subject of tuberculosis and its economic importance presents so many aspects, and the several aspects and topics are presented in such a variety of shades of opinion, that the cattle industry, its products and the prevailing high prices have at last aroused public opinion and created such a sentiment against the loathsome animal disease, tuberculosis—which causes an annual loss in the United States, according to present animal values, and the products, of an amount exceeding $100,000,000—that congress has specifically authorized the department of agriculture and the bureau of animal industry is therefore directed to assume a more aggressive attitude toward animal tuberculosis eradication work. (This amount does not consider the losses through human tuberculosis, where the losses through productive work, doctor's bills, sanitariums, etc., are incalculable.) With that end in view, the United States has been divided into regions or territories, for convenience of administration.

The central office for the states in their respective regions and the work in the regional states is under the immediate supervision of the inspector in charge of the regional office. The central offices are known as tuberculosis eradication offices.

A United States veterinary inspector with knowledge of animal diseases and with special training in cantagious disease control work, and familiar with farm conditions, is selected to direct the work. Additional inspectors, similarly equipped, are assigned to assist him. All inspector in the bureau of animal industry must be graduates from veterinary colleges, whose course of studies conforms with the government's requirements, and such veterinary graduates are not eligible to appointment until after successfully passing the rigid United States civil service examination. After appointment it is the aim of this bureau to assign them in accordance with their peculiar fitness for the work upon which they are assigned.

It is the desire of the bureau of animal industry to co-operate with the commissioners of agriculture, or the proper cattle authorities of the several states. An agreement is entered into whereby the duties and obligations of the federal department and the state authorities, co-operating are defined. The bureau will co-operate with such states when the cattle authorities, appointed, and clothed with the authority to enforce diseased cattle quarantine laws, enforce such laws. Tuberculin tests will not be applied by the inspectors of the bureau, or under the supervision of the bureau, unless the herd owner indicates his willingness in writing, by signing an "agreement" with the bureau, and this agreement embodies the rules necessary to be followed and obeyed to make it possible to eradicate tuberculosis from his premises.

Persons signing this agreement must be loyal; the demands for the services of the inspector are great. The funds created for this purpose are intended to be devoted to the use of those who are really serious and therefore any material deviations in complying with the accepted rules embodied in the agreement, which must be regarded as the bureau's policy, will be considered as sufficient reason for nullifying the agreement and refusing further aid.

The bureau has not sufficient funds at this time, nor a sufficiently large number of trained veterinary inspectors that can be detached from work upon which they are now assigned, largely due to demand for army veterinarians to apply tuberculin tests to all herds, whose owners might make application; and it is therefore contemplated that applications from pure-bred breeders should receive first consideration, because the pure bred herds furnish the foundation for the new herds of the progressive farmer, and also improved cattle or material for the purpose of improving older herds of pure-bred or grade animals. The law through which congress made this provision does not appropriate funds that can be used to assist a state in reimbursing herd owners for losses through afflicted cattle, nor have all the states made laws that will enable the cattle authorities of such states to fully co-operate with the bureau in the matter of employing veterinarians to devote their entire time to this work, or to adequately reimbuse herd owners in their efforts to conserve and promote the farm animal industry, and thus the food supply.

The bureau desires success in this work through education, co-ordination and co-operation. For the purpose of aiding the breeder of pure-bred cattle, and to prosecute the work along rational lines, a farmer with a pure-bred female and who uses a pure-bred male (for pure-bred bulls are frequently owned jointly) must be regarded as a pure-bred breeder, regardless of the number of grades he may have in his herd. With such beginnings, many of our finest and largest pure-bred herds were founded. Of course, all animals upon such premises, grades and pure-breds, would have to be submitted to the test. One unsprayed apple tree in an orchard may continue to reinfect a whole orchard. A grade herd in the immediate vicinity must likewise be looked upon as a possible source of danger to this pure-bred herd, and upon the voluntary application of the owner for the tuberculin test, should also be submitted to the test and the health determined.

Veterinary inspectors in the bureau, and those appointed by a state to co-operate and to devote their entire time to tuberculosis eradication work, have their salaries and the necessary traveling expenses paid by the government and state respectively, and thus all services are rendered free to the herd owners.

Reimbursing Cattle Owners

Maximum amounts, that may be paid to cattle owners, and fixed by laws a few years ago are not now in harmony with the rapidly increasing values of farm animals, and the prices of feed necessary to develop and to sustain them.

If arrangements could be made that provided a maximum for grade animals and pure-bred animals in accordance with prevailing values, with a dminishing scale in amounts that may be reimbursed; appropriate sanitary regulations formulated, and a compliance therewith a prerequisite or condition to further reimbursements; skim milk, whey, or products returns from the creameries to the farms for the purpose of rearing calves and pigs, sterilized at the creamery, and the produce from untested cattle or herds regulated—tuberculosis would soon be relegated to the list of rare animal diseases.

Large amounts of money have been paid by the states, and United States, in reimbursing farm animal owners on account of disease spread through the return from the creameries of unsterilized skim milk; and the milk from one tubercular herd may contaminate the entire supply at the creamery.

Economic Features.

Why should a person breed and produce, foster and develop, if the product of his labor, time and money expended, is only partly useful and the animals' natural life and the period of productiveness shortened through a preventable disease? We do not allow a leaky root to rot the interior of our buildings, nor do we ordinarily neglect our insurance policies. A healthy animal is a good asset.

Increasing difficulty, on account of restrictions, is experienced by breeders of good cattle in satisfying prospective purchasers regarding the health of their cattle, and the demand for healthy cattle is very much above the visable supply. The newer agricultural areas in the United States, where diversifying farm operations have been found practicable and profitable, are contsantly, and in increasing frequency, appealing to the bureau offices for information relative to locations of herds where healthy cattle might be obtained under bureau certification as to their health. Millions of acres through the southern part of the United States have been made available for diversified agriculture through the eradication of the cattle tick, which is the intermediary bearer of the germ that causes Texas fever in cattle.

The practical eradication of sheep scab in the sheep-raising regions of the United States has also shown what co-operative effort can do and accomplish. The injudicious and unscrupulous breeder or dealer in the older agricultural communities, who has exploited—and it might perhaps be said, in some instances, plundered—these newer agricultural regions with his diseased cattle, has cast a stigma, a blot, upon all herds in his community, which the honest herd owner is finding it difficult to erase.

Thus progress in the newer areas is retarded. Bureau certification has aided in restoring confidence. The knowledge of bureau certification has expedited sales and facilitated traffic and transportation. Aside from its economic aspects to the herd owner, and to the animal industry at large, tuberculosis is also an economic problem to the human family, and human sanitary police measure have demonstrated that the dangers in animal tuberculosis being transmitted to the human family have not been exaggerated, and that human tuberculosis would likewise lessen its toll. This has ben evidenced where the milk supply to cities and municipalities is regulated.

WHEN THE HAY IS IN THE STACK

Jack Dunaway.

When the frost is on the meadow an' the hay is in the stack,
An' the sultry days o' summer have retired upon the track.
When the dews of autumn glisten on the cotton everywhere,
An' the softly sightin' breezes seem to breathe a soothful prayer,
Then somehow my rested feelin's nigh approaches the immense,
An' I get to calculatin' like a sort o' earthly prince,
An' old care an' sorrow beats it in a scramble at my back,
When the frost is on the meadow and the hay is in the stack.

There's a pow'ful lot o' goodness that is wafted through the air
When the glowin' yield o' Nature is in common everywhere.
There's the pumpkin in the corn field that has ripened on the vine
Stands a monumental picture o' this handy work o' mine,
An' the corn stalks that have withered in the summer's sultry rays
Bow their husky ears in token of the comin' autumn days.
Then there comes a sorter feelin' that the world is at your back,
When the frost is on the meadow and the hay is in the stack.

When the frost is on the meadow an' October days are here,
An' the Indian summer season is a-drawin' somewhere near.
When the worth-while summer showers have retired to history,
An' the April buds have withered as per summer's fierce decree,
When the autumn smiles upon us as a mother on her child,
An' the days an' nights are even an' the rains are slow an' mild;
We can smile while lookin' backward o'er the year's decayin' track,
Fer we're mighty glad an' happy when the hay is in the stack.

We have looked ahead to autumn through the long endurin' days
Of the summer's fiercest sunshine—in the sultry summer rays.
An' the toil it seemed unceasin'—there was labor everywhere—
Till we've been almost persuaded to give up in meek despair.
Then our better nature whispered—"He's a soldier tried an' true
Who will meet the ills o' battle with a will to see 'em through;"
An' we'd keep a-pushin' forward till the enermy fell back,
We will crown ourselves the victors when the hay is in the stack.

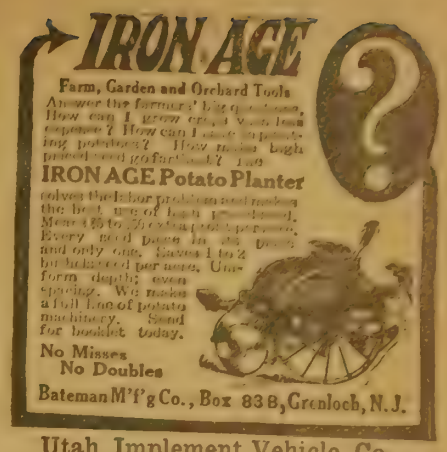
A man who went away from home some time ago to attend a convention of church people was struck with the beauty of the little town in which the gathering was held. He had plenty of time, and while wandering about walked into the village cemetery. It was a beautiful place, and he walked around among the graves. He saw a monument, one of the largest in the cemetery, and read with surprise the inscription on it—"A Lawyer and an Honest Man."

The man scratched his head and looked at the monument again. He read the inscription over and over then he walked all around the monument and examined the grave closely. Another man in the cemetery approached and asked him:

"Have you found the grave of an old friend?"

"No," said the man, "but I was wondering how they came to bury those two fellows in one grave."

More system should be introduced into the management of the farm. The slipshod, hit-or-miss, unmethodical way of conducting the farm that is in practice among the many farmers is responsible for the mortgages and lack of profit in farming, where prosperity does not exist.



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200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

THE RECLAMATION OF ALKALI LAND

(Continued from page 3)

they take up such large quantities of the salt that small crystals may be seen all over the leaves and stems. One means of decreasing alkali in the soil is to allow these weeds to grow and then to haul them with the salts they contain off the land. It is a mistake to burn these weeds on the land as the salts are thereby returned directly to the soil.

Drainage the Only Permanent Solution.

Many attempts are made to remove the surface crust of alkali by flooding and scraping the land; but these give only temporary relief. Where alkali is present over large areas, drainage in some form offers the only permanent and satisfactory solution to the problem. The type of drainage to be adopted varies with conditions. As a rule, some kind of covered drain is much more effective than the open ditch which is always getting clogged and causing trouble in numerous ways.

Clay tile is very satisfactory. Often cement drains can be used; but unless everything is favorable, cement may be corroded by the alkali. In regions where the land is swampy and has a tendency to slip, box drains made of lumber are more satisfactory than the short-jointed tile.

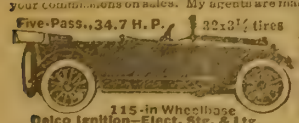
The drainage system not only reduces the evaporation of moisture and thereby prevents the carrying of a stream of alkalies to the surface, but it carries bodily off from the land great quantities of salts which will never return to cause trouble. With most of the other treatments mentioned, the alkali is not entirely removed from the land but is only transferred to a less objectionable place from which it may return at any time to cause trouble. When a drainage system is once installed, the expense is practically over; while the expense never ends when some of the temporary remedies are used.

Opportunities in Reclaiming Alkali Land.

Some of the best agricultural opportunities offered in the country at the present time are those associated with the reclamation of alkali lands. Many of these lands are situated near excellent markets and are adjacent to rich farming communities where all the materials used to carry on the project are at hand. The lands are usually very cheap in comparison with others in the vicinity; and even when the cost of reclamation is added, the price is considerably below what is warranted by their producing power. Reclaimed alkali lands are often among the most fertile that can be found anywhere. It seems probable, therefore, that when adequate methods of reclaiming the managing alkali lands are worked out and put into operation, we may look for a development of the agriculture in arid America, such as has not been realized since the days of rapid expansion due to irrigation and dry-farming.

Driver Agents Wanted

Introduced demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres.



BUSH MOTOR COMPANY, Bush Temple, Dept 1-HN Chicago, Ill.

Make Idle Winter Days Profitable

If you have a farm engine and a team and a desire to make money this winter, get an "American" Saw Mill. Hundreds of farmers are making money in spare time with these famous portable mills. An "American" need less power and saws more lumber at less cost. It is the *quality* mill, simple, strong, easy to move right to the woodlot and requires no experience to run. Sold with iron-clad guarantee.

Sold by
Landes & Company
Salt Lake, Utah.
Mills on hand.
Prompt shipment.

INCREASED VALUE OF FEED BY GRINDING

There has been much discussion about the increased value of feed by grinding. Experiments have been conducted and results obtained that are valuable to the feeder now that all kinds of feeds are so high. If it was ever profitable to grind feed it is true today because of the high cost of both hay and grain.

Experiments have demonstrated that when corn and oats are fed along with corn and oats in combination, that 22.8 per cent of the corn passes through the animal undigested and 12.1 per cent of the oats and where oats and corn are fed together, 26.5 per cent are lost.

The above indicates that more than 22 bushels of every 100 bushels of corn fed to animals are not utilized, that 12 bushels out of every 100 bushels of oats are lost and 26 ½ bushels of corn and oats combined. It is very apparent that this loss would have made a very nice profit had the feeder Ground the Grain.

These tests were made in animals with good teeth and a healthy condition. If the animal's mouth is tender or diseased the teeth are in bad condition, the loss is still greater Often when the animal is taken off from grass the given whole corn, the mouth becomes very tender, a condition which tends to cause the animal to swallow the grain whole. Again, gums become diseased and teeth rotten, a condition which further prevents mastication.

It has been demonstrated that a greater per cent of ground grain is utilized if the grinding is done fine. If the grains are only cracked the particles are more liable to be swallowed without mastication but if finely ground, grinding by the teeth is unnecessary for the food is then in condition to be transformed into a nutrient state by the action of the digestive juices in the stomach and intestines.

Feeding Dairy Cows

In feeding dairy cows it has been demonstrated that ground oats and corn combined together with roughages made a gain of approximately three pounds of milk per day with a corresponding increase in butter fat, than where the same amount of whole grains were fed together with the same amount of roughages.

Feeding Steers.

In feeding steers it has been found that finely ground corn meal, together with other concentrates and roughages made a gain of nearly one-half pound more per day than those fed the same amount of whole grains together with an equal amount of concentrates and roughages.

Feeding Calves.

In feeding calves it is more economical to grind the grains very fine than to feed them whole grain at any time. In fact, from every stand point both in securing a better mixture and more complete digestion it is to the feeder's advantage to grind his grain.

Feeding Alfalfa.

Extensive experiments in feeding alfalfa hay have demonstrated that seventy-five pounds of finely ground alfalfa will make a gain equal to a hundred pounds that have not been ground. Possibly a part of this is due to the fact that there is less loss by wastage in feeding the material when ground than in bulk.

Feeding Livestock.

To secure the best results from feeds, the farmer should know what substances are necessary to promote growth and how to proportion them. He should also know the nutrient value of his feeds. The laws governing growth are very exacting. Haphazard feeding is not profitable but if the animal is fed scientifically, or in other words, given a properly balanced ration, the results are usually very satisfactory.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending December 31st. Livestock market steady. Cattle—Receipts, 942; market, steady through week; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.50; fair to good, $6.00@7.00; canners, $4.00@$5.00; feeder cows, $5.00@6.00; veal calves, $9.00@10.00.

Hogs—Receipts, 1,846; market, steady; tops, $15.75; bulk of sales, $15.75.

Sheep—Receipts, 2,032; market, steady; lambs, $15.00@16.00; ewes, $9.00@10.00.

NORTH SALT LAKE, Jan. 3.—Cattle—Receipts, 163. Market, steady. Choice steers, $9.00@10.00; good steers, $8.00@9.00; fair steers, $6.50@7.75; choice cows to heavy heifers, $7.00@7.50; fair to good cows and heifers, $6.00@6.75; cutters, $4.75@5.50; canners, $4.00@4.50; bulls, $5.25@6.00.

Hogs—Receipts, 353. Market, steady to higher. Choice, fat, smooth hogs, 175 to 250 pounds, $15.50@15.85; mixed fat hogs, 160 pounds and up, $14.75@15.50.

Sheep—Receipts, 37. Market, steady. Choice grain-fed lambs, $14.75@15.00; choice yearling wethers, $11.00@11.50; fat wethers, $10.50@11.00; fat ewes, $9.50@10.00.

Kansas City.

KANSAS CITY, Jan. 3.—Hogs—Receipts, 10,000; lower; bulk, $16.20@16.45; heavy, $16.40@16.55; packers and butchers, $16.30@16.50; light, $16.00@16.40; pigs, $13.00@15.60.

Cattle—Receipts, 4000; steady; primefed steers, $12.00@14.00; dressed beef steers, $10.50@12.25; western steers, $8.75@11.00; cows, $6.50@11.00; heifers, $6.50@11.50; stockers and feeders, $7.00@11.60; bulls, $7.25@10.00; calves, $7.00@14.00.

Sheep—Receipts, 3500; higher; lambs, $16.00@17.10; yearlings, $12.50@14.00; wethers, $11.50@12.75; ewes, $9.50@12.00.

RELIABLE FARM BARGAINS

We are offering this meek some excellent farms in exchange for Salt Lake City or Weber county property. These farms have a first-class water right in the Bear River canal, are well improved, under a high state of cultivation, right close to Tremonton, one of the best towns in northern Utah. These places are strictly adapted for sugar beets, alfalfa, grain, fruit; in fact, anything that's grown in this district. Climatic conditions are good. Water for domestic purposes, modern conveniences and accessibility are all good.

80-acre farm, with an eight-room modern house, hot-water heat, bathroom with all the fixtures, water piped to the house and barn, nice lawn, shade trees, hedge fence, good granary, chicken house, hog pens and other outbuildings too numerous to mention. This property can be exchanged for a smaller place. Price $175 per acre.

40 acres, without improvements, lying in the same neighborhood, with the same water rights; has been into sugar beets and alfalfa. The place is fenced with a woven-wire fence and is right near the main canal. This property we are holding for $160 per acre and will accept property in exchange.

60 acres, under the same identical conditions, that we are offering, for the same price.

We have lying just under the canal 160 acres, all under cultivation. This property has been farmed for a good many years and is one of the best farms in the Bear River valley. This land has been used for dry-farm purposes, although it can be irrigated and lies in excellent shape for irrigation. This property can be exchanged for Salt Lake or Davis county property, and the price is $75 per acre.

In Cache valley some first-class farms, all irrigated, water for domestic purposes, under a high state of cultivation.

We also have in the Bear River valley some of the finest farms there are to be found in the state of Utah which we can sell on ten years' time and an easy payment down, ranging in price from $115 to $200 per acre.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

YOUR INCUBATOR

Should soon be in operation for best results. Take no chances on inferior machines get a Buckeye or Queen. "Do your bit" for "Uncle Sams" meat supply. Write for **Big Free Seed and Poultry Supply Catalog.**

PORTER-WALTON CO.
Salt Lake City

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE

AND

SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

IF YOU WANT A REAL AUTOMOBLE BARGAIN

Write us about our used car snaps

BUICKS OLDSMOBLIES

NATIONALS

Easy Terms

RANDALL-DODD AUTO CO.

Auto Row

Salt Lake City, Utah.

FOR SALE

"VICTOR'S DEFENDER"

2nd Prize Junior Champion boar at Utah and Idaho State Fairs 1917.

A wonderful hog for 16 months old, with good bone, high back, and a whale for his age. Is in the way of my "Defenders" sows.

Also a few choice young "Defender" boars for sale. Orders placed now for spring pigs.

V. R. FISHER

Oxford Idaho

Wanted to hear from owner of good ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER

Buhl Idaho

FOR SALE

15 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH

Buhl Idaho

FOR SALE

Purebred Holstein-Friesian Bull

Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndiko 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

SOME PLATES.

"They say that the plates on a battleship are nearly a foot thick."

"Mercy! Fancy having to wash them three times a day!"

MILK BY-PRODUCTS DO THEIR BIT IN PORK MAKING

(Continued from page 11)

the weight of approximately 300 pounds, feed eaten, gains made, and feed required for 100 pounds of gain.

Buttermilk Versus No Buttermilk

Record Heading	Group I	Group II
Final Weight	296	299
Number of Days	218	156
Average Daily Feed Eaten:	lbs.	lbs.
Shelled Corn	4.87	2.27
Meat Meal Tankage	.37	.14
Wheat Middlings	.34	.22
Buttermilk	....	32.16
Rock Salt	—	—
Average Daily Gain Per Pig	1.10	1.54
Feed Required for 100 Pounds Gain:		
Shelled Corn	442.	148.
Meat Meal Tankage	33.	9.
Wheat Middlings	31.	14.
Buttermilk	....	2091.
Rock Salt	.4	.1

Note that the buttermilk pigs made the most rapid gains reaching 299 pounds in 156 days. It took the "no buttermilk" fed pigs 62 days longer to reach 296 pounds.

Note further that the pigs drank on the average a little over 32 pounds of buttermilk per head per day, and that they ate less than half as much corn, about a third as much meat meal tankage, and about two-thirds as much wheat middlings as where no buttermilk was given—evidently the buttermilk saved grain.

Note still further that on 100 pounds of gain although it took a little over a ton of buttermilk or exactly 2091 pounds, yet this 2091 pounds saved considerable grain, or to put it definitely and concretely, this little over a ton of buttermilk saved 294 pounds of corn, 23 pounds of meat meal tankage, 17 pounds of wheat middlings and a quarter of a pound of salt. Putting it on a better unit basis —100 pounds of buttermilk saved 14.09 pounds of corn, 1.17 pounds of meat meal tankage, .81 pounds of wheat middlings, and .01 pounds of salt, a total of 16.07 pounds of grain replaced by 100 pounds of buttermilk.

Charging the corn at $60.00 a ton or $1.68 a bushel, tankage at $80.00, middlings at $50.00, and salt at $20.00 a ton this 100 pounds of buttermilk saved 49.19 cents worth of feed or it was worth on the basis of values given practically 50 cents a hundred pounds, this on the basis of it being fed in very large quantities.

Bear in mind that the buttermilk also saved time. In reality each 100 pounds of buttermlik saved practically a day's feeding of the pig which meant that you saved a day's labor in the feeding of said pig every time you gave him a hundred pounds of buttermilk in this comparative experiment.

With brood sows this section has found that buttermilk has a higher replacement value than with shotes, this is natural and to be expected. In one test we found that 100 pounds of buttermilk saved 5 pounds of hominy feed, which is practically the same as corn, plus 9 pounds of tankage,—a total of 14 pounds of feed. Counting the hominy at $70.00 a ton and tankage at $80.00 the saving was 53½ cents, and what is more the young pigs did better when buttermilk was added to the basal ration of hominy feed and tankage.

With fattening shotes, therefore, we note that in the instance of limited feeding a hundred pounds of buttermilk or skim-milk is equal to 12 pounds of grain; when fed in large quantities, 16; whereas when fed to sows 100 pounds of similar buttermilk, fresh from the creamery, saved 14 pounds of grain with suckling sows.

Buttermilk or skim-milk, therefore, is valuable according to what it replaces, and in practice in the corn belt it replaces corn plus tankage or similar supplement. We must place its value, therefore, not on the price of hogs but on the price of the things that it takes the place of, in reality the feeds we would use if we did not have the milk by-product.

Most assuredly skim-milk and buttermilk are especially valuable feeds when it comes to balancing our ordinary grains, and why should it not be so? Milk was produced for young growing animals, hence it comes into its own to its fullest extent when fed to suckling pigs for instance or to young weanling pigs that are just starting out in the race of life.

HERE ARE SOME GOOD TIPS ABOUT EGGS

Beginners in poultry-keeping often wonder why some hens will lay steadily when eggs are worth but 10 cents a dozen and lay only an occasional egg or loaf continually when eggs are 35 cents a dozen. I used to blame the hen, but now I know it isn't her fault.

I have found that the time of year that the hens lay best is in the spring when there is plenty of green feed and an abundance of exercise. By feeding green products in the winter and compelling them to keep in action I can best imitate nature and bring spring conditions to my hens. The question is, Does it pay? It pays me.

Cabbage and any of the beet family are green feeds which I used profitably to feed my chickens in the winter. Green cured alfalfa and clover, which has been steamed or boiled, sprouted oats, or pumpkins have also been profitable green feeds for my chickens.—Farm and Fireside.

When made into apple butter, even the ugly windfall has a glory of its own.

Are You Doing Your Bit?

Our Big Seed Catalogue Will Help You

SEND FOR FREE COPY TODAY

PLACE YOUR SEED ORDER EARLY

Vogeler Seed Company

SALT LAKE CITY, UTAH.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars weighing about 100 pounds each, sired by Richards Pathfinder 1st Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please.

ERIK W. OLSON

Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS

Provo Utah

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

Wellington Utah

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN

Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

WHY?

In the parlor there were three,
She, the parlor lamp and he;
Two is company, no doubt,
So the little lamp went out!

REO
"THE GOLD STANDARD OF VALUES"

This Reo Six Is a Light Six But It Is Also a Sturdy Car

THE TERM "LIGHT" as so frequently used in speaking of motor cars, is a relative term only.

IT MAY MEAN MUCH—or nothing. Depending on whether the reader knows all the factors that enter in.

THIS REO SIX IS LIGHT—just as light as sound engineering will permit.

AND IT MAY SURPRISE YOU to know that—not in the "ads," but on the scales—this Reo Six is as light as many, and actually lighter than some, whose claims to lightness are their chief recommendation.

WE REO FOLK have never talked much about lightness—because that quality in itself is proof of nothing, and yet, as we've said, we make Reos just as light as may be, by the use of the best materials known to the art—as light as may be compatible with the safety factor we desire.

WE LAY MORE STRESS in our advertisements on the staying qualities of the Reo product and the consequent low upkeep.

BECAUSE THAT REALLY COUNTS—those are the qualities the buyer most desires and seeks in the car he buys.

WE DO NOT SACRIFICE endurance for an immediate effect—either in our sales talk or in our designing.

REO ENGINEERING is admittedly sound—it is the standard by which other engineering is compared by those who know.

AND SO WE DESIGN each part of a Reo with an eye single to long time service. Doing that, we automatically obtain low upkeep.

SO, AS WE'VE SAID, this Reo Six is light, using the term relatively—but more important, it is sturdily built.

PUT IT ON THE SCALES—then weigh other cars of similar power and wheel base and size, and you'll agree this is indeed a Light Six.

AND WHILE YOU'RE at it, examine carefully the size of the various parts, especially bearings and the shafts that carry the load and take the driving strains—and you will find other arguments why, at the same price, you should select a Reo Six for yours.

THE SAFETY FACTOR in a Reo is greater than that in any other make of car—save one. And that other is also, in its special class, the world's best car.

STRANGELY ENOUGH, the real proof of "lightness" is not to be found on the scales alone—but in the tire mileage.

SOME CARS are so flimsily made and some others so poorly designed that they are practically dead weight on the tires. Result, excessive tire wear and expense.

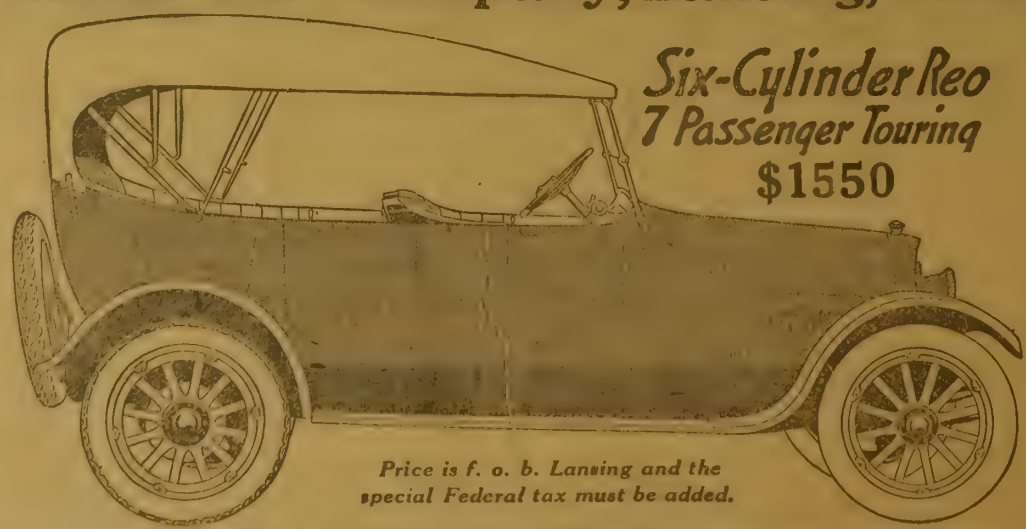
ASK ANY REO OWNER of any Reo model about his tire mileage, and his reply will convince you that the Reo is the "Lightest" Six made.

SUPPLY IS LIMITED—we cannot hope to supply all who will want this Reo Six.

SO ONLY WAY is to see your Reo dealer at once, place your order and secure an early delivery date before his limited quota is disposed of.

TODAY won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan



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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV No. 24 LEHI AND SALT LAKE CITY, UTAH. JANUARY 12, 1918

Poultry Warriors Will Help Win The War

One Hundred or More on Every Farm--Raise More Poultry for Profit--Be Patriotic

Clarence Dubose.

The humble hen can play a prominent part in preventing the progress of the Prussian peril. The quickest and cheapest way of adding to our meat supplies is to increase poultry and egg production. To double this production will give us 6,500,000,000 pounds of meat food in the form of poultry and eggs. By having this amount of poultry food for domestic consumption we will eat less pork and beef, and can send almost that many pounds of meat to Europe to feed our soldiers, the armies of the Allies, and the destitute civilians.

We can not increase any of the meat animals as rapidly or economically as poultry.

The United States Department of Agriculture wishes every farmer to understand the importance of doubling our poultry production this year. It is a vital part of the general food production campaign, and that campaign must be carried out in all its details to insure victory in this war. The chief poultry increase must be made on the general farms of the country—on every farm in the country. It must be made as a by-product of general farming. The farmer must get his flock to such size, in proportion to his farm, that all the waste and scraps, and land available for chickens to run on will be used, and the fowls kept up from these sources and a reasonable amount of other feed. The Department does not suggest that extensive poultry enterprises be taken up by the general farmer. In fact, it warns against that very thing. But it urges every farmer to keep just as many hens, and produce just as many chickens and eggs as he can economically and as a by-product of his general farming.

The average size of the farm flock in the United States now is forty hens. If the average is increased to one hundred hens this year the desired increase in production should be obtained. Many farms, of course, can have flocks of several hundred, and some farms will have to keep less. But the effort is to increase the farm average to at least 100 hens.

It is an astounding fact that there are a million and a half eggless farms in the United States—an economic anomaly and an agricultural absurdity. Out of a total of 6,371,502 farms, 1,527,743 report no egg production in the last census.

Even if we had never been forced to go to war with Germany this condition would be one demanding every effort at correction—for each farm can, at least, produce sufficient poultry and eggs for home consumption, and thereby be a more profitable farm. It would be to the self-interest of every one of these million and a half farmers to commence poultry production, if there were no war. But because we are at war there is a more important reason why they should do so—the fact that they will be helping win the war—helping to preserve their own free existence in a free country.

Some prize winning birds.

With proper care and a good place to keep poultry it can be made one of the profitable branches of farming.

Chickens Self Feeders.

Chickens will "pick up" a good part of their living from waste that otherwise would never become of any value. They will feed themselves, to an extent, from grass, weeds, insects, and crumbs and small scraps that if not eaten by chickens would not become of food value to man. They will eat the eggs and larvae from which come various destructive insects, particularly orchard pests. In some orchards where chickens range the brown tail moth has almost disappeared, while nearby orchards, where chickens do not run, are damaged by the pest.

Most of the attention required by farm flocks can be given by the women and children of the household. The question of labor is not a puzzling and uncertain problem in the poultry production program. If the farmer increases his flock to a size suitable to fit in as a by-product of his general farming he will find that it will not require extra help.

Because of these facts—that poultry, as a by-product of general farming, find much of their feed in waste and require no extra labor—the farmer will produce meat food at the very lowest cost. Home consumption of this will cut down his living expenses and enable him to sell more of the animal meat he produces. He will be making more money himself, and at the same time he will be helping Uncle Sam win the biggest war the world has ever known.

Prepare For Early Hatch.

Early hatching this spring is necessary if the desired increase in production is attained. It is also necessary, during the winter, that farmers save young hens and pullets, so they will be on hand for stock in the spring. The stock of the Nation was reduced considerably last fall by a widespread sale, for market, of young hens and pullets. Therefore it is necessary to conserve stock now, or else the shortage may interfere seriously with the production program. In view of the stock shortage, to kill a good hen now is to reduce the potential egg production next year anywhere from five to twelve dozen eggs.

Early hatching in the spring will increase the number and size of fowls and the number of eggs produced this year. It will result in bigger birds, and birds that will lay in the winter months.

The hatching season varies in different parts of the country, running through February, March, April and May, generally speaking, although in some parts hatching may start in January. In the Middle West, where ten States in the grain belt produced half the poultry of the entire Nation as shown by the last census, the hatching season has been during the

(Continued on page 14)

GO back to the simple life, be contented with simple food, simple pleasures, simple clothes. Work hard, pray hard, play hard. Work, eat, recreate and sleep. Do it all courageously.

We have a victory to win.

—HOOVER.

IRON AGE
Farm, Garden and Orchard Tools
Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The
IRON AGE Potato Planter
solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.
No Misses
No Doubles
Bateman M'f'g Co., Box 83 B, Grenloch, N.J.
Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

USE THE WESTERN
PULVERIZER, PACKER AND MULCHER
3 MACHINES IN 1
THESE WHEELS ARE THE SECRET OF OUR SUCCESS!
for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.
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Conventions and Meetings

WILL MAKE PLANS FOR 1918.

Outlook of the Livestock Situation. Increase of Wheat and Sugar Beets.

In order that plans for the coming agricultural season may be well-laid, President E. G. Peterson of the Utah Agricultural College, Chairman of the Food and Conservation Committee of the State Council of Defense, has called a convention of the chairmen of the county councils of defense to meet in Salt Lake City, January 16 in the Hall of Representatives at the Capitol. This gathering, which President Peterson declares will be of utmost importance, will discuss in detail all problems concerning an increase in production and greater conservation as they affect this State. The most careful attention will be given to the labor problem which all agree will be acute during the coming season. The question of seed distribution will be discussed and question of agricultural markets will be gone into. Unusual efforts will be made to devise ways and means to increase our meat output as well as to secure an increase in wheat and sugar beets. Above all else, a plan for the co-ordination of all districts of the State will be developed which should aid greatly in a wise organization of our agriculture.

In commenting upon the probable increase in the meat industry that the coming season will see. Professor John T. Caine III, Director of the Extension Division of the Utah Agricultural College, summed up the situation as follows: "We can not look for a big increase in the number of beef cattle this year, especially not if the proposed 640 acre homestead bill becomes a law. However, the quality of our beef animals is increasing, and Utah will undoubtedly produce more pounds of beef than in the past. Dairy cattle will increase, due in part to the present high price paid for butter fat. It is likely that the loss in numbers of 1915-16 will be more than made up. Sheep will remain about normal but, unless the weather is severe at lambing time, an increase in the production of mutton will occur. Because of the mild winter, range sheep are producing more wool and an increase in our wool production may be looked for. A gratifying feature of the sheep situation is the increase of the small herd on the farm. Sheep make excellent scavangers about the farm and few farms that cannot support a few head at least largely on the feed along the ditch banks, and in the corners of the fields.

"A definite program for the increase in pork is under way in Utah and an appreciable increase can be expected in the number of hogs. Utah dropped from 112,000 hogs in 1916 to 101,000 in 1917. We expect to more than make good this loss.

"While startling increases cannot be made in the livestock industry, the amount produced can be made to go much farther if the average citizen will eat less meat, which he can do to his own better health and use meat substitutes. The home poultry flock can also aid in the situation. Thousands of town and city homes can keep a few chickens, largely on refuse now burned or carted off by the garbage man. This would release thousands of pounds of pork and beef for export purposes. The meat situation is serious and demands our careful attention. We must all aid in every way possible to increase our exportable surplus."

An increase in wheat production this coming year is looked for by Dr. F. S. Harris, Director of the Experiment Station of the Utah Agricultural College, due to an increased acreage. The yield per acre is not apt to be above normal, however, because, while much acreage will produce big returns, some of the fall wheat planted has failed to germinate. A big increase in both the acreage and yield of beets is looked for.

"All in all, the prospects for the coming season are encouraging. While there are some discouraging features, such as the drouth in the south of Utah, there is no reason that can be foreseen at present why this State should not produce large crops this coming year if the farmers keep up their present pace. Conditions are not such that we can afford to rest on our cars, however. Many people are much afraid of the present weather situation. I am sure of one thing, that if any injury is to result from the weather this winter it is to be all in the future. So far, the winter has been helpful. The light snowfall will necessitate heavier than usual spring precipitation if we have all the water we need. However, unless we have a sudden cold spell coming with the ground unprotected and followed by a sudden thaw, I cannot see why any damage should result from the present mild winter."

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FARMERS AND LIVESTOCK MEN

Next week at Salt Lake City a number of meetings are going to be held that interest both farmers and livestock men.

Monday, January 14th the American National Livestock Association will hold their annual meeting. Livestock men from different parts of the United States will attend.

Tuesday, January 15th the Utah State Farm Bureau will commence a two day gathering.

Wednesday, January 16th the chairman of all the counties, who have in charge the Food Conservation and Production will meet.

Thursday, January 17th The National Wool Grower's Association will convene for three days.

At all these meetings important subjects will be discussed. War time measures and necessities will be acted upon. All livestock men and farmers are invited to attend these meetings.

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LIVESTOCK MARKET

Ogden, Week Ending January 8th. Cattle—Receipts, 1,002; market, steady throughout week; choice steers, $9.00@$10.00; good, $8.00@$9.00; feeders, $7.00@$8.00; choice cows and heifers, $7.00@$7.50; fair to good, $6.00@$7.00; canners, $4.00@$5.00; feeder cows, $5.00@$6.00; veal calves, $9.00@$10.00.

Hogs—Receipts, 2,251; market, higher; tops, $16.00; bulk of sales, $15.75.

Sheep—Receipts, 4,023; market, steady; lambs, $15.00@$16.00; ewes, $9.00@$10.00.

North Salt Lake, Jan. 9.—Cattle—Receipts, 103. Market 50c higher. Choice steers, 1050 to 1200 pounds, $9.50@$10.00; good steers, $8.25@$9.25; fair steers, $6.75@$8.00; choice cows and heavy heifers, $7.00@$7.50; fair to good cows and heifers, $6.00@$6.75; cutters, $4.75@$5.50; canners, $4.00@$4.50; bulls, $5.25@$6.00.

Hogs—Receipt, 100. Market higher. Choice fat hogs, 175 to 250 pounds, $15.85; mixed fat hogs, 160 pounds and up, $15.25@15.75.

Sheep—Receipts, none. Market weaker, demand poor. Choice grain fed lambs, $14.50@$15.00; choice yearling weathers, $11.00@$11.50; fat ethers, $10.50@$11.00; fat ewes, $9.50@$10.00.

Kansas City, Mo., Jan. 9.—Hogs—Receipts, 15,000. Market lower. Bulk of sales, $16.20@$16.45; heavy, $16.60@$16.50; packers and butchers, $16.20@$16.50; light, $16.20@$16.40; pigs, $14.00@$16.00.

Cattle—Receipts, 17,000. Market steady. Prime fed steers, $12.00@$14.00; dressed beef steers, $10.00@$12.00; western steers, $8.50@$11.00; cows, $6.25@$10.75; heifers, $7.00@$11.00; stockers and feeders $7.50@$11.25; bulls, $7.00@$10.00; calves, $6.50@13.50.

Sheep—Receipts, 8000. Market higher. Lambs, $16.50@$17.10; yearlings, $12.50@$14.50; wethers, $11.00@$12.75; ewes, $9.75@$12.25.

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A new car of the same make would cost (with similar equipment $1,300.00. The price this man is willing to accept under the conditions make this a genuine bargain.
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VOLUME XIV. LEHI, UTAH, SATURDAY, JANUARY 12, 1918 No. 24

Use of Better Seed Will Help Production

Dr. Frank S. Harris, Director of Experiment Station.

1. Need of Good Seed.

It is impossible to produce good crops unless good seed is used. The soil may be of the best quality and it may be prepared in the most thorough manner, the supply of moisture may be ample, the season may be the most favorable, yet all these count for little if worthless seed is planted.

Farmers seldom use seed that is entirely bad, but they very often are satisfied with what is far short of the best. In every farming community there are many who pay but little attention to what they sow, using whatever kind of seed happens to be in their bins at the time of planting.

It is usually poor economy to save on seed, being much better to do the saving in some other way. It is not always necessary to pay fancy prices for good seed; but it is usually wise to get good seed at a high price rather than to plant that of inferior quality even though it can be obtained at slight expense.

With a crop of corn it is very easy to cut down the yield 25 or 50 per cent by planting poor grain. The loss by this decreased yield would be sufficient to justify paying what might seem fabulous prices for good seed corn rather than using that of inferior quality. Using poor seed is more a question of thoughtlessness than anything else, for any farmer by doing a little figuring can easily convince himself how unwise such a procedure is.

2. Clean Seed.

Seed, in order to be first class, must be free from impurities of all kinds; that is ,it should be 100 per cent of the kind of seed it is represented to be. One of the most common but least harmful impurities is dirt and other inert matter. The chief disadvantages in having this kind of material present are that it lessens the actual amount of good seed and in addition may interfere with the proper operation of planting machinery.

Very often the seed that is sown is not of any one variety, but is a mixture of many varieties. Thus it is next to impossible to buy any quantity of wheat that is unmixed. There are many disadvantages of having mixed crops where but one kind is desired; so every effort should be made to prevent mixing. This requires constant attention if a number of varieties of each crop are grown in the same community or on the same farm.

The most undesirable kind of impurity consists of the seeds of noxious weeds. These often render otherwise good seed almost valueless for planting. Most every crop has weeds which are especially bad for it. Thus dodder is a special enemy of alfalfa; mustard is difficult to eradicate from a wheat field; and wild oats are a great pest in the oat field. On the dry-farm special care should be taken to have seed free from weeds, as these pests take the much needed moisture from the regular crops. It is a wise practice to run most seed through a fanning mill in order to remove just as many of the weed seeds as possible. Purchasers of seed of any kind should insist above all things on the greatest possible freedom from weeds.

3. Seed Free From Disease.

The presence of disease is a constant menace to many kinds of crops. The small grains are attacked by the smuts to such an extent that it is unwise to ever plant wheat or oats without first treating the seed.

The treatment usually recommended for the covered smut of wheat and the loose smut of oats is as follows: Place one pint of formalin containing 40 per cent formaldehyde into 40 to 50 gallons of water. Immerse the seed in burlap sacks in this solution for about ten minutes, then remove and allow to drain. Let the wet grain remain in a pile covered with sacks or other similar material a number of hours, after which it is spread out and allowed to dry as rapidly as possible. As soon as dry it is ready to plant. There are a number of other treatments that are good, but the formalin treatment seems to be the most successful.

The disease of potatoes are becoming much more prevalent in the State than formerly, and great care should be taken to prevent their wider spread.

There are a number of seed treatments, but these have not been widely tried under Utah conditions, so their local value is not well known. Every farmer should be on the safe side by using for seed only potatoes that are as free from disease as possible. It is also much safer not to raise potatoes on the same piece of land so long that the soil becomes filled with disease organisms.

In cutting seed potatoes it is well to cut off the stem end first. The worst Utah potato disease, dry rot or the fusarium wilt, can thus be detected and the diseased tubers discarded. The diseased potatoes will show a browning or blackening about one-fourth inch under the skin on the cut surface.

4. Seed That Will Germinate.

A high percentage germination is very desirable. Seeds that will not germinate might as well be made of wood for all the value they are to plant. A good crop cannot be obtained without a proper stand, and it is impossible to get a good stand from seeds that will not germinate.

Corn, the grasses, and some of the legumes are most commonly low in germinating power. This condition arises from improper methods of curing and storage from age, and a number of other causes. One sample of corn that had been used for seed was tested at the Experiment Station and found to have only sixteen per cent of kernels that sprouted. It would be necessary literally to fill the ground with this kind of seed in order to get a good stand of corn.

The only safe way is for farmers to test every lot of seed before planting, unless they are certain its germinating power is good. It is too late to make the test after the seed has been planted, and the stand found to be poor.

5. Plant Best Varieties.

Wise farmers will carefully study the question of varieties. There are too many who pay no attention to varieties or strains. They simply plant wheat or potatoes without regard to kind.

There is probably no best variety of any crop for all conditions, but a community should try to find the varieties of each crop best suited to its needs. It is better for a community to raise a few standard varieties of known merit than to produce a little of everything, but not enough of any one kind to supply a good market.

6. Good Strains.

There are many breeders of crops who have gone to the trouble of producing high yielding strains of a certain variety. They have, through long selection, eliminated the poorer individuals and have produced pedigreed strains whose yielding power and quality for a number of generations are known.

Before the crop production has reached the highest standard of perfection no seed, the producing power of which is not known, will be planted. There is no reason why it is not just as important to have good strains of crops as of livestock. This is especially true, since it is possible in a few years to produce enough from a single kernel to seed great areas. Thus a little seed of high quality can have a great economic effect in a comparatively short time.

No better field of agriculture is open in Utah that the development of strains of the leading crops that would be well adapted to the conditions of the State.

7. Good Seed of Various Crops.

No set rules for getting good seed of all crops can be given although a number of the general principles hold for practically all kinds. The seed of a number of types of crops will be discussed separately.

a. The Small Grains. In securing seed of the small grains due attention should be given to varieties in order to get those best suited to local conditions. Perhaps the most common impurity is the presence of a small amount of seed of numerous other varieties as previously mentioned. This can be overcome largely by hand selecting a few heads and planting them on clean land to get a start of pure seed.

The small grains are not as often low in germinating power as some other crops, but it will usually pay to make a germination test, especially of oats and barley. Before planting, they should always be run through the fanning mill to remove dirt, weed seeds, and broken and small kernels. They should always be treated for smut according to directions already given.

It would pay each farmer to improve his seed by selecting the heads of a number of desirable plants and planting them in a special seed garden to furnish seed later for the entire farm. If this were continued every year it would result in much better strains of grain.

b. Corn. The chief danger with corn is the likelihood that it will be low in germinating power. This is brought about by the fact that the germ in the kernel spoils if left for any length of time on a moist cob. The corn should be well matured and the ears allowed to dry rapidly, in order that the germ will not be injured.

Seed corn should be selected in the field. The farmer should take ears from only the most desirable plants. The plant on which the ear grew is much more important than the appearance of the individual ear. Select ears from plants producing a number of good ears rather than from those having but one.

After the seeds ears have been selected, they should be husked and placed in a warm dry place, with good ventilation, to cure properly. Then to be absolutely certain, it often pays to remove a few kernels from each ear and test them for germ-

(Continued on page 7)

DAIRYING

THE VALUE OF A HERD BULL

Brooks Hogan.

How much does it cost to keep a bull and how can I determine what are the service fees?

When we started out to buy a bull to head our herd we were told by various breeders that they had bulls for sale at $100 and $125, but if they were us th y would not stop at less than $300. Well $300 looks mighty big to a man with only a grade herd of forty cows with a total value of $2400, but one man told us that the bull was half the herd, so I suppose at least that breeder would not say anything to the contrary if we paid him as much for a bull as our entire herd cost. He might not be far wrong, but some way I am only one-half optimist and the other half pessimist.

Finally we settled on a bull that looked good to us and we paid $200 for him.

As luck would have it—our $200 bull has proven to be worth the money. You see we had an investment of $5 per cow in that bull and we used him for three years, the last year we bought a young bull to use with his heifers—just lightly while he was developing.

At 7 per cent per annum for three years, each cow had to pay $1.05 on the $5 investment, her share in the herd bull. Not being breeders we were unfortunate in the sale of our bull and were unable to get $200 for him when through with him, but let him go for $100 with an option to buy him back if we found he had improved our herd. We had never handled him, as we had a house and paddock for him with a breeding chute along the side with a system of gates by which we could lead the cow in and let her out again without the attendant having to touch the bull. But the man we sold him to undertook to handle him and found him so cross that he finally asked our permission to butcher him and we gave consent, for which we have been sorry ever since his daughters have started producing well.

Our loss of $100 in his sale made a depreciation during the three years for each cow of $2.50. We fed the bull about fifteen pounds of hay the year round and seven pounds of oat meal. The garden refuse was his chop with now and then a little oil dessert during the spring and early summer and the remainder of the year he was given green corn, kale and roots. His feed cost during the three years amounted to: $82.15 for hay; $107.40 for grain, and $17.10 for succulence and miscellaneous feed, or a total of $206.65. Each cow's part to pay was $5.17.

The bull performed about 50 services each year and it required of the attendant about 15 minutes time, which for the three years would make fifty-seven and one-half hours, which at 15 cents per hour made a cost for labor of $8.63, or 14 cents per cow.

It required on an average seven minutes a day to care for the bull in feeding and watering, or a cost for the three years of 127½ hours labor at 15 cents, or $19.13, or 48 cents per cow.

Gathering together cost for each cow in maintaining a $200 bull for three years with a herd of forty cows we have the following:

Interest on investment	$1.05
Depreciation	2.50
Feed cost	5.17
Service labor cost	.14
Care labor cost	.48
Total	$9.34

To determine service charges divide the $9.34 by three, which is the number of calves from this bull and you get the cost of $3.11 for each calf.

If we had bought a $50 bull, saying nothing of his value as future influence on the herd it would have cost just as much to feed him and just as much labor. The interest would have been 35 cents less and depreciation, allowing that we sold him again for full value investment, 83 cents less per calf, making each calf of the $50 bull cost just $1.18 less than one from a $200 bull. Do you consider that all the difference in value of a 150 pound butterfat cow and a possible 300 pound cow? The calf will in time be the cow in your herd and blood represents over half what she will be. The care represents the minor half.

We retained in our herd fifteen of the daughters of our $200 bull, which averaged in production with their first calf over their dams at the same age 17 pounds of butterfat each. This does not look like much, but it represents at 30 cents per pound for butterfat a total return for one year over previous returns, of $76.50. If these daughters are retained in the herd throughout their average producing age of ten years or eight years of production, this return will amount to $612, saying nothing of the influence these daughters will have over their offspring if good bulls are continued in the herd. And, all this was brought about because $141.60 was paid out for depreciation and interest on investment for three years on a $200 bull as a difference over a $50 one.

No doubt some dairyman that is reading this tale would never think of reading a historic novel because, as he would say, "There is no truth in them." But, isn't there reasonableness in all this that you have been reading? Then, arouse your sense of better judgment and help improve our dairy conditions.

REPLACING COWS OF VALUE

Because the present price of good dairy stock is high, it may be considerable of a temptation to some dairymen to dispose of some of their older stock of proved value and replace their numbers with young untried stock and heifer calves, which can be purchased at a much lower figure. One dairyman, at least, has spoken to me of such a plan.

While this method of disposing of stock might bring in a goodly sum of cash right now, still if cows are sold indiscriminately from the herd and their places given over to young, untried heifers, the herd will surely suffer considerably from the transaction. Where herd records have been kept showing the individual records of the cows, it is a good time to cull over the herd and eliminate any that are either only paying their board or doing but very little more, and give their places to promising young heifers, either pure breds or grades whose dam and grand-dam are high grades of proved dairy qualities and whose sires were prepotent pure-bred animals of a good dairy breed.

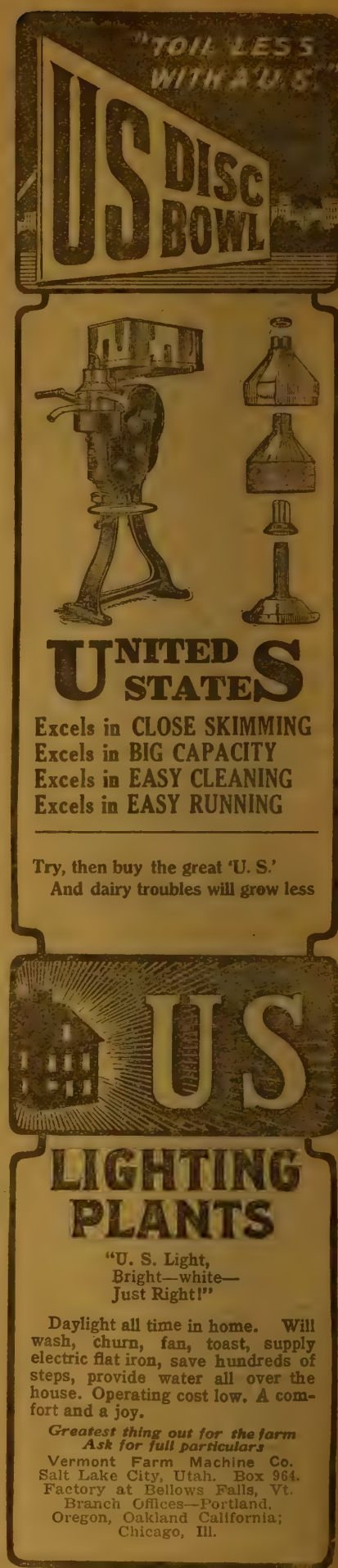
Individual records of the dairy cows are indispensable to a really successful dairyman. By her past record for butterfat production, each cow is judged as to her future value in the herd. If she is a heifer in her first milking period, careful feeding and management in her second milking period may bring forth a big improvement in results. She deserves a fair trial and an opportunity to prove her worth as a milker and butter fat producer. If she cannot pass muster, there is time then for her to be passed with the culls. However, the plan of selling off valuable dairy cows that are paying good returns, just because they will bring a little cash, cannot be too quickly condemned, if the herd is to be maintained at its maximum of efficiency and pushed to a higher standard.

With the high cost of feeds required in the dairy ration, there may also be a temptation on the part of some feeders to skimp their cows. It must be remembered that all the feed consumed by a cow beyond what is actually required to maintain her body in normal healthy physical condition is given over by her to the production of milk and butter fat. While the feed is worth a great deal of money, the returns from the butter fat and skim milk are correspondingly high, so it will still pay to furnish the cows with well-balanced rations for the production of milk. Butter fat is going high this winter, and hogs fed skim milk with other rations are fattened cheaply and already soaring high in the market. Eggs produced by the poultry fed on skim milk are bringing a high price, while the skim milk fed the young dairy stock is by no means bringing small returns.

One basic ration that can be fed economically by all dairymen, consists of bright alfalfa or clover hay and corn silage supplemented in a small way by some form of concentrates. Good corn silage and alfalfa alone form very nearly a balanced ration. In those sections where clover is more abundant than alfalfa, clover may be fed instead. However, for best results, these feeds require some form of concentrates at least to a limited extent because while the required nutrients are present, it also necessitates a large consumption of feed in order to obtain all the nutrients that might be made into butter fat.

Every dairyman should make sure of his ensilage supply. An abundance of ensilage and bright alfalfa or clover hay will undoubtedly insure the dairyman a wide measure of profit on his dairy products during the winter. After the silos have been filled it will pay to cut corn for fodder. Where only one silo is available, some feeders have found it practicable as well as profitable to refill the silo toward the first of the year with ensilage made from dry fodder. Such ensilage lacks the juicy succulence of properly prepared ensilage, but experiments have proved that ensiling greatly increases the feeding value of dry corn fodder and will go a long ways toward supplying the nutritive requirements in the dairy ration. Where re-filling is to be practiced, it is better to bring the fodder in from the field and place in ricks handy to the silo as soon as it is sufficiently dry. When the re-filling is done, a stream of water should be turned into the blower and all the water possible mixed in. It is next to impossible to get enough water mixed in with the dry fodder when filling. Being dry, it will not pack easily. Two men should tramp while filling so it will be packed sufficiently to check the mold and keep it from spoiling.

It will not only be profitable for dairymen to practice well-chosen economy in the selection of their dairy rations this winter but it is a patriotic duty to do so. For by this means, the country's resources are conserved and butter fat is produced at a minimum cost. When I say "well chosen economy" I mean the choosing of such basic rations as corn silage and alfalfa or clover, which will produce a maximum quantity of butter fat at a minimum cost of feed. Judge the amount of concentrates to be added to the ration by careful use of the scales



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and tester then the producer and consumer will each receive the benefit.—P. H. E.

WHY COWS ARE UNPROFITABLE PRODUCERS

Cows may be poor because: (1) they lack breeding and individuality; (2) they are underfed; (3) they were bred too young; (4) they lack care and are poorly managed; (5) because of disease, especially abortion; (6) or because they are not persistent milkers. Any of these factors or a combination of s veral of them is the general reason for low producers.

These conclusions were drawn at the University of Missouri College of Agriculture as a result of studying the records of Missouri cow testing associations. To increase the production of herds, it is evident that records must be kept, and those cows which do not have the ability to produce profitably must be eliminated to give the others a fair chance through proper feed, care and management. Experience has taught that few farmers will keep these records themselves and that the most practical means of getting them is to organize a cow testing association and employ a tester.

Improvement in dairy cattle increases the actual value per cow, decreases the cost of production and increases the profit to the farmer.

Problems In Handling Tuberculosis

This Terrible Disease can be Eradicated When Rightly Managed.

(We are going to publish two or three articles on this important subject by Dr. W. G. Benner. Any one who desires the co-operative help of our State or Federal authorities should write to Dr. Hoggan State Veterinarin, Capitol Building, Salt Lake City, or to Dr. F. E. Murray Federal Building, Salt Lake City, who represents the government in the district.—Ed.)

(Article 3)

Tuberculosis Can Be Eradicated.

Bureau of animal industry records show that herds that have been under the bureau's supervision for nine years and over, and found healthy at the time of the first test, and have been retested yearly, continue healthy.

Herds found badly diseased nine years ago—and out of which all the diseased cattle were taken and slaughtered and the premises disinfected under bureau supervision or direction, and the remainder and their progeny, together with the progeny of those found diseased at the time—likewise remain healthy, after yearly retests.

This tuberculosis eradication work is inaugurated along purely eradication lines. In order to permanently construct, it may become necessary in such reconstruction work, to destroy or remove unsoundness. Fully 99% of the bureau tuberculin test reactions are confirmed upon post-mortem examination; and as a plain business proposition, it is certainly better and safer to occasionally slaughter one healthy animal, of questionable value, than to permit 99 diseased cattle to remain to spread the disease.

It is a vagary of tuberculosis that after an animal has reacted to the tuberculin test such an animal may not again react to a retest, or may do so intermittenly, meanwhile harboring the tuberculosis. Microscopic and bacteriological examinations of their liquid and solid excretions, followed by slaughter and post-mortem examination, have proved this to be a fact.

Therefore, an animal that has once reacted, indicating—99 times out of a 100—the presence of tuberculosis, must always be regarded as a dangerous animal in a herd.

It would then seem that a policy that perimts releasing an animal that has once reacted, but upon retest fails to again react, and then declare such an animal healthy, must be regarded as a very dangerous practice, and seriously jeopardizing one of the most vital parts of our nation's backbone—the health and prosperity of our animal industry—and also evinces a questionable respect for the intelligence, integrity and credulity of an unsuspecting public.

Swine tuberculosis has been ignored as a factor in the continued reinfections in a herd, and tuberculosis from that source must not be overlooked. Tuberculosis in hogs in the United States seems to be increasing —9%— nine out of every 100—hogs slaughtered under government meat inspection during the fiscal year 1916 had tuberculosis in some form or degree. Tuberculosis in cattle is the main cause for tuberculosis in swine.

Tuberculosis in hogs is most prevalent in regions where tuberculosis in cattle exists. Hogs feeding upon the unsterilized skim milk from the creameries, and the undigested grain in the droppings of cattle in the barn yards, are frequently found to have tuberculosis. A recent issue of a journal that has probably done more for the advancement of dairy animal development than any other publication of that type, say editorially that when their herd was founded 20 years ago, the tuberculin test revealed tuberculosis in the herd, but that the diseased animals were removed, and that they have retested the herd regularly since and for 17 years they have not had tuberculosis in their herd; that animals taken out of the herd on account of age or unprofitableness, and slaughtered, post-mortem examinations made to satisfy themselves that the test was not fooling them, were likewise found healthy. One of the owners has stated repeatedly that the loss then sustained and the sacrifice that was made has since proved a very comforting, satisfactory and profitable investment.

It would, therefore, seem that tuberculosis can be eradicated, and that the repeated injections of tuberculin cannot produce tuberculosis. Persons familiar with the production of tuberculin have no argument in opposition to the use of tuberculin.

Difficulties Encountered.

The personal presence, the exacting work and time necessary in properly applying the present recognized tuberculin test, renders it very difficult for many capable veterinarians, with their lucrative practices, and they are therefore frequently unwilling to apply tuberculin tests. Intentional interferences prior to or during the test have caused errors in deductions and interpretations by the veterinarian, which proved discomforting and discouraging to the qualified veterinarian.

The public should appreciate the difficulties that the veterinary inspectors must encounter at times. In this co-operative work, it is anticipated that the applicant is truly earnest in his desire to eradicate tuberculosis from his premises, and such incidents and experiences should not recur.

Errors in final decisions, as the result of deductions and interpretations, may occur, "for he who makes no mistakes accomplishes nothing, and he who makes too many mistakes loses his job." There is an element of chance in everything that we undertake that is worth while.

Use Should Be Restricted

Tuberculin is a biological or biochemic product, and it must be considered a scientific instrument, and should not be permitted to be used indiscriminately by persons without training in physiology, pathology, a knowledge of the animal diseases, the animal's nature and their requirements.

These are problems that have occupied the minds of all progressive breeders, and the sooner the several questions, the cardinal points in tuberculosis and contagious disease control work, are understood, the more easily will they be solved.

This is a big undertaking and the earnest support of the farm animal owners and the public is imperative, if the co-operative efforts of the federal and state authorities are to meet with success. The necessity of the work must be understood before the funds may be provided to give the necessary support to it. The more aggressive attitude of the bureau should therefore be interpreted into relentless warfare against this preventable disease.

Tuberculosis is one of the oldest diseases known, but the improvements in the microscope, the fruits obtained as the result of scientific researches, have enabled us to find the causes of many disease that were formerly attributed to changes in the moon, and we are thus in a better position to successfully combat many of our ravaging animal diseases.

Tuberculosis, in its various forms and under its several names, is the most universally devastating plague affecting mankind and our farm animals, and we must not be ashamed with it. It must be regarded as a misfortune and an affliction, and we should steel ourselves and permit close and sincere co-operation in the effort to control and eradicate this loathsome but preventable disease, and thus enable the government agencies to so co-ordinate the work that it may not be hindered, unnecessarily, and success will crown our efforts.

"For evil or for good we live each day;
Accelerant the good or ill speeds.
. . . . . .
In blessing or in curse, where'er it flows—
To coming ages what will thou, friend, give?"

It is better to send pork to the Allies than indemnity to Germany.

PRACTICAL

"Well, what sort of wedding presents did you get—the usual assortment of berry spoons and pickle forks?"

"Not on your life. I got a sack of potatoes, four dozen fresh eggs, a peck of onions, and a Liberty bond."—Louisville Courier-Journal.

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"This is for you, girls!

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed *to a trace* when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed *faster* when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight *tube* with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

Sharples Separator Co. - West Chester, Pa.
Ask for Catalog "Velvet for Dairymen."—addressing Dept. 104
Branches: Chicago San Francisco Toronto

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Devoted to Agriculture in the Rocky Mountain Region.

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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

"Every miser helps the Kaiser." The help that the Red Cross, Liberty Bonds and Thrift Stamps are receiving proves that we do not want to help the Kaiser.

The new year calls for and expects more from every one of us. A greater sacrifice is asked of us. Let every one take hold cheerfully and resolve that what ever may come they are going to do their part to help win the war for liberty and for world democracy.

NEW YEAR RESOLUTIONS

It is a good custom to have a time once each year when new resolutions can be made.

To "turn over a new leaf" and feel like you are starting again. This has been a custom for the first of the year and many a one has "sworn off" from a bad habit.

It is a good time to resolve to do better things, makes a starting place that comes once each year. Many suggestions might be made as to the new resolves we ought to make but let everyone think them out for themselves.

ORDER REPAIR PARTS NOW.

Machinery is going to be an important factor in the production of the 1918 crop. The wise farmer is going to look over all his machinery right now and order the extras or repair part. We are not asked by any dealers to make this suggestion but a careful study of the present condition shows what we will have to meet. Go carefully over every machine you have and see if extras or new parts are needed, you have already or soon will decide what crops you are going to plant and you ought to know just about the kind of machinery you will need to help you this year. Place your orders early if you want to be sure of deliveries.

Now, while you are not busy is the time to do this work.

MORE PER ACRE

The cry today is for greater production. for more grain, more livestock, more sugar beets.

There is one way to help that is not often spoken about and that is more per acre. Utah can well feel proud of the record she has made this year in the production of potatoes, for we hold the record of the United States, having produced more per acre than any other state.

Every farmer feels a pride in his heart when he can serve his country with increased production. Many are so situated that they can not buy more land but every one can spare no pains to see that every acre they own does its full duty.

Just a little increase per acre on every farm would mean a large increase in the nation. Better seed, better cultivation, better irrigation, in fact better care or better farming is what we must give to secure better returns per acre.

We can do it, it is a duty we owe our country and a better reward for our labor.

FALL WORK—WINTER STORM

While this is being written the snow is falling and the wind is blowing and one can safely say that winter has come at last. What a contrast with a year ago, when the snow was so deep all over the northern part of the state.

Little, if any, fall plowing was done a year ago while, this fall plowing has been going on right up to the first of the year. Many farmers have said that their crop of 1917 was smaller on account of not being able to plow their land as they usually did in the fall. The experience of the past year seemed to emphasize the importance of fall plowing and everyone seems to have taken advantage of the wonderful weather we have had for the last three months and it is safe to say that there was more fall plowing done in the fall of 1917 than for a number of years.

There is still time for us to secure the needed snow in the mountains and if plenty is provided, the crop of 1918 will be the largest ever produced in the state.

FARMERS MEETINGS SHOULD BE PRACTICAL

The farmer today is asked to accomplish more and produce more with less help. This is one reason why every farmer should attend the Round-Ups and other meetings.

On the other hand every meeting and program should be made as pra tical as possible. Our Agricultural College officials announce that all these meetings will meet this requirement.

A time or two the suggestion has been made to us that practical talks by some successful farmer or livestock man should be given as part of these meetings. Farmers like to hear some one tell how they have done a certain thing. Men who could take part on the program can be found in nearly every community.

We urge our readers to attend these meetings and feel sure they will be repaid for the outlay of time and money. The details of the programs had not been given out when we went to press but those in charge say that the practical needs of the hour will be discussed.

POULTRY WARRIORS

Uncle Sam is now calling upon every farmer to raise on his farm one hundred or more chickens.

So many farmers, or we may better say their wives, have found the raising of a few chickens quite, a profitable practice on the farm. The sale of eggs and poultry products has provided many of the necessities for the home.

It is quite a surprise to learn that about 20 per cent of all the farms have no poultry of any kind. How do they get along with out "fresh laid eggs?"

Give the children the responsibility of looking after the poultry. It will help supply the table with good food and if you will make play out of the work they will enjoy the task of feeding and caring for them.

Now is the time to plan for an increase of poultry. Get ready now. You can soon start the incubator and if you do not have one, plan to buy some baby chicks.

Each one will have a different way of increasing their poultry, the important thing, however, is to have a hundred or more chickens this year on every farm.

HOW THE ADVERTISEMENTS WILL HELP

This is a day of reading, keeping posted as to what is going on. Advertisements are some of the best news you can read. They give the news about things which you need and tell you where to get the best kind at the right price.

The Utah Farmer is very particular as to the advertisements that appear in our paper, nearly every week we turn down advertisements that we will not accept because we are as careful about the advertisements as the reading columns.

If you will go through each issue of our paper and read the advertisements carefully, you will find a great many thing that will interest you. Send for a catalog or other literature about the product or machine in which you are interested. Manufacturers and dealers are glad to get in touch with you and send the information to you. Any reliable advertiser is glad to present his proposition to you. Many helpful suggestions and ideas are often received and in this the advertisements are a help to you. You can keep posted and a well posted buyer seldom losses money. You know something about modern machinery, food products, autos or any thing else you are interested in if you read the advertisements.

LACK OF LEADERSHIP

Loyality and patriotism like charity should begin at home. The man who is not loyal to his own community, his own neighborhood and his own home is not liable to be boiling over with patriotism for his country. No district can become noted and famous without the people in that district are noted for their good work. The short cut to the accomplishment of the best things for any community is through organization. This may be through the farmers' clubs, or any other way of getting together. An organized district is stronger in the advancement of any good cause than one that is not thus united. Organization naturally implies leadership and the fact that few people care to assume this responsibility greatly retards the progress along this line. Many men and women would make leaders if they would only be given an opportunity to develop their latent talents. Modesty inclines them to work in the ranks, which is commendable, but what would an army accomplish if it was made up of privates only. It is time for those who can to accept responsibilities and if necessary take the lead in any good work that would help their vicinity, their neighbors, and incidentally themselves. The lack of leadership has prevented or retarded progress in many parts of this country and especially among the agricultural classes.

PLANT ONLY GOOD SEED

The difference between "breaking even" and "making money," in the producing of crops can often be traced to the use of poor seed. Nearly every farmer with whom you talk seems to know something about the value of planting only good seed. These same farmers, however, realize that there is a serious neglect in the planting of ungraded, poor seed.

The next time you go to the granary take a small quantity of wheat and carefully examine it and you will be surprised at the number of cracked kernels, shrinken kernels and the amount of foreign seed, such as weed seeds, that it contains.

Even if you have what is considered good seed, you will find enough imperfect and weed seeds in it to diminish the yield considerably. Where ever these cracked seeds or weed seed fall in place of a good seed that part of the land is wasted and the total yield lessened. With good clean seed every hill will produce more and your total yield will be more. If your seed is of a better quality, able to produce a larger stoll and better heads a money making crop will be produced. It costs just as much to prepare the land and care for a poor crop as a good yield. Why not use good clean seed of the best quality and produce bigger and better yields.

USE OF BETTER SEED WILL HELP PRODUCTION

(Continued from page 3)

ination. This seems a great deal of work, but it yields big returns. Seed corn selected in this manner cannot help but give good results. Where it is necessary to buy corn for seed in bulk it should always be tested before planting.

c. Alfalfa. Alfalfa seed is often rather low in germinationg power; so this point must always be kept in mind. The most common weed is the dodder. The presence of a few dodder seeds with alfalfa greatly lowers its value on the market.

There is quite a tendency among alfalfa seed growers to select strains yielding a large amount of seed regardless of the forage produced. It must be kept in mind that alfalfa is usually grown for forage, and the selection should be made toward that end.

e. Grasses. There are not many sections of the country adapted to the production of grass seed, so a great part of the best seed comes from a relatively few regions.

The seed of many of the grasses is often very low in germination, and is usually adulterated with cheaper and inferior kinds of seed. Special precaution should therefore be taken before planting to test for germinating power and to detect adulterations.

f. Potatoes. There is probably no crop that will give as great returns for a little attention regarding seed as potatoes. The variety is an important consideration. Often when two varieties are grown side by side under the same conditions, one will yield five or ten times as much as the other. Freedom from disease must always be kept in mind in selecting potatoes for planting.

It is not necessary, and is not even a good thing, to change potato seed provided proper methods of selection are followed. Of course if the Utah farmer pays no attention to seed selection, while a farmer in Maine is doing everything possible to get better seed, it would be wiser to use good seed from Maine than poor seed from Utah. It is possible, however, to produce better seed for Utah right in the State than outside.

The place to begin selecting is in the field. Before harvesting the main crop, dig with a shovel, a number of hills that have a good appearance. From these choose the hills to be used for seed. Select those having a large number of tubers of the right size and shape, free from disease and desirable in every way. If it is impossible to select seed in this manner for all the land that is to be planted, the selected hills could be planted in a special seed plat that would produce enough the next year for the entire field.

The Experiment Station by selecting good and poor hills for two years was able to produce more than four times as great a yield with the seed from the good hills as with that from the poor.

Care should be taken to store potatoes used for seed in such a way that they will remain firm and that there will be no spread of disease among the tubers.

g. Garden Seeds. At present most of the garden seed used in Utah is imported from the outside. Seed dealers are often compelled to hold this seed over from one year to another, and as a result, it loses in vitality from year to year till sometimes only a small part of it will germinate on account of age. Those buying garden seeds should insist that they get nothing but fresh stock.

There is a good opportunity in Utah for someone to produce seeds that are adapted to the conditions of the State. Irrigation and bright weather furnish ideal conditions for seed production.

8. Summary.

1. There is probably nothing in the agriculture of Utah needing greater attention than the use of better seed.
2. Seed should be free from inert material, mixed varieties, and weed seeds.
3. Freedom from disease should be kept constantly in mind before sowing seed.
4. Seed to be of value for planting must be of high germinating power.
5. In purchasing seed care should be taken to get the best varieties and strains.
6. There are special points to be kept in mind concerning the seed of each crop.
7. All agricultural interests of the State should co-operate to improve the quality of seed used in the production of crops.

ADVICE TO WAR GARDENERS

Clean Farming Methods Versus Insect Pests of the Garden.—Work That May Be Done in Winter.

Clean culture plays a most important part in the fight which must be waged against the insects which menace the success of the home gardener's efforts. Cleaning off all the rubbish left over from last season's gardening aids materially in reducing the numbers of the overwintering forms of the insect enemies of the vegetable garden, whose activities are only too great in any case.

Cutworms, which hide in the soil in the day time and come out at night to feed on the tender growth and cut small plants entirely off, wireworms that damage the tubers of potatoes and other root crops, and a host of other insects, winter under brush and rubbish on the earth or a few inches under ground. Where they can find protection during the cool weather of winter, conditions are ideal for their survival, and the warm days of the spring will bring them out in countless numbers to feed upon the tender foliage of the young garden truck. Neighboring weed patches shelter many forms.

Leaves, stems, and other litter should never be allowing to accumulate up to the time of planting, or there will be thousands of insects the coming year where there were hundreds last season. Weeds should be cleared up and burned, together with all garden rubbish.

The soil should be thoroughly worked over during the winter to destroy such insects as may be spending the winter on, or a few inches below, the surface. This is best done at least a month before the seeds are planted.

If chickens are available for the purpose, they ought to be allowed free access to the newly turned over soil for a time, as the fresh meat in the form of insects, which they will find there will prove a very welcome addition to their diet, and its removal will go far towards insuring a fair start to the garden crop.

DON'T PUT OFF MANURE SPREADING

Procrastination in the matter of spreading the manure accumulated during the winter is likely to bring this work in the spring time when other work is crowding. It is much better to haul the manure in the winter while the cost of labor is least. At best, the help problem is a serious matter, and it can be made even worse by mismanagement and failure to look ahead in planning the work both winter and summer. If we get in the habit of heaping the manure up just outside the barn door, the best days for this work will quickly pass before we realize it. A pile of manure containing from 50 to 100 loads is no small task if put off until time for spring work to commence. A good many dairymen, including ourselves, find it best to throw the manure directly upon the spreader and haul to the field every day or at least as soon as a load accumulates. It requires only a little time to accomplish the work in this way and then it is done.

There are other advantages to be gained from this practice, not the least of which is the preservation of the manure in the best condition until it becomes incorporated into the soil. Manure left in a heap soon begins to heat and fermentation sets in resulting in considerable loss in nitrogen. When spread fresh upon the field, there is a very small loss, but for the most part, all the valuable elements of fertility go into the soil. Snow upon the ground does not interfere in the least. The manure can be spread right on top of the snow. The main thing is to spread the manure during the winter season so when spring work begins, it is on the fields ready to be turned under with the plow.—Paul H. Eaton.

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Vegeler Seed Company

SALT LAKE CITY, UTAH.

POTATO MARKET

The extreme cold weather in the eastern states has prevented a heavy movement of potatoes. Last week (Thursday afternoon) at New York it was estimated that a 100 cars of potatoes were frozen while laying around the New York yards. A few cars came in with a fireman but even these cars were nipped by the extreme cold. Potatoes sold at $2.25 to $2.75 cwt.

At Chicago the market was steady western stock selling for $2.00 to $2.20 cwt. according to quality.

In Denver the price was about $1.35 to $1.55 sacked per cwt. Demand slow.

At Kansas City the price was $1.65 to $1.80 sacked cwt. Demand and movement slow.

These prices are for car load lots paid by the wholesaler.

USE OF SEPARATORS

There are four methods of separating cream and skimmilk from whole milk. The first three may be classed as the gravity method and are the deep setting system, the shallow pan system, the water dilution system. The remaining method may be classed as the centrifugal method and is the hand or power separator.

The disadvantages of all the gravity methods are: Large loss of fat in the skimmilk, cream and skimmilk are old when secured, often times sour, the cream is always thin or low testing, and in the case of the water dilution method, the skimmilk, being one-half water, is practically worthless for feeding purposes.

The advantage of the mechanical methods are: Less fat is left in the skimmilk; there is a greater range in the percentage of fat in the resulting cream, the skimmilk is in the best possible condition for feeding, the cream can be separated immediately after milking and there are less utensils necessary and so less labor in caring for them.

Some of the factors to be considered when purchasing a separator are: Price, capacity, nearness to factory or agent, where parts may be secured, and efficiency. Some of the factors affecting the efficiency of a separator are. Temperature of the milk, speed of the bowl whether or not the machine is set level and on a firm foundation, and the percentage of fat in the cream. The temperature of the milk should be at least 85 degrees Farnenheit, the speed should always be that given on the handle or recommended by the manufacturing company; the machine should always be set level and bolted tightly to a firm foundation to prevent jarring, as jarring may result in the skimmilk remixing with the cream after it is once separated and resulting in a large percentage of fat being lost in the skimmilk; cream over 50 per cent should not be separated as there is a large loss of fat in handling and it may result in the remixing of cream and skimmilk inside the separator and a large loss of fat in the skimmilk.

Some of the reasons why the cream from the same separator does not test the same on different days are: Temperature, speed, rate of inflow, percentage of fat in the original milk and amount of skimmilk or water used to flush out the bowl. Cold milk results in thinner cream than warm milk; low speed results in thinner cream than high speed; low testing milk results in lower testing cream than that from high testing milk. The more water or skimmilk used to flush out a separator the thinner the resulting cream.

To get results from a separator buy a good standard machine, have it firmly bolted to a solid foundation and setting level, run it according to directions, do not separate a cream over 50 per cent fat.

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. $2.00 a bottle at druggists or delivered. Book 1 M free.

ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. $1.00 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by

W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

WHERE IT IS NEEDED

"I suppose it's to be a campaign of education out your way?" "I'm afraid so," replied Senator Sorghum. "Some of my constituents say this is the year they are going to teach me a lesson."

HOME

SOY BEANS AS A FOOD

Much has been said of late about the soy bean. The bean is small more like a pea. The Columbia University make a report on it and we give part of the report:

"In China the soy bean replaces in turn meat, milk, flour, eggs for the human population and fodder and silage for the animals. In the United States it can do the same.

"'Soy' is the Chinese word for water, and the soy bean is nothing more nor less than a Chinese water bean.

"In Hong Kong and Canton they have soy beans at every meal. There are innumerable ways of preparing it and of utilizing it in different dishes. China knows it as "the poor man's meat" because it contains enough protein to take the place of meat entirely in the human dietary.

"Soy bean flour can be made into delicious dishes. A curd made from the beans can be eaten as cheese or it can be prepared in much the same way as sweetbreads, with quite as pleasant a result.

"Nor is it restricted to a given course at meal. The Chinese may do things in a backward, inverted fashion, but they include nearly everything at some stage of the game. Whether dessert comes first or last at a meal, it can make good use of soy beans, which are very attractively prepared with jelly.

"Dietically and at time medicinally, soy beans measure up better to required standards than any other available food. They are rich in protein, sometimes containing as much as 40 per cent. They also contain a great deal of fat, but they are almost totally lacking in starch, and therefore make an excellent food for diabetics.

"Withal, consumers grow fond of soy beans because they have a delicious flavor. They have the same universality of all their tribe. In appeal and in potentiality of general use they are true beans.

"Babies cry for them. In summer especially they are very good for all infants, and they can be administered readily in the form of gruel.

'The soy bean does not keep union hours. It does not hesitate to supplant any and all foods. It has no respect for the division of labor and for specialization of industry. It is prepared to break strikes.

"Why should any one worry about a milk strike when the soy bean can become at a moment's notice, a very acceptable cow?

"The process of adaptation is very simple. The small yellow variety of soy beans are crushed, strained and boiled, then diluted and bottled. The farmer who raises soy beans has his own dairy.

"Queerly enough, analysis of soy bean milk shows that it is very much like cow's milk. Average cow's milk specific gravity of 1,020 and a fat fat content of 3.9. Soy bean milk has a specific gravity of 1,020 and fat content of 3.125.

"Moreover, there need be no fear of tuberculosis or other germs in the vegetable milk. And one of the chief concerns of the modern dairy farm is the bacteria count. It is a lot easier to keep a bean clean than it is to keep a cow clean. The cow is not so steady in its habits. More surprising still, soy bean milk is very much like cow's milk in taste. The consumer does not need to suffer in the substitution.

"Few things rank with cottonseed and olives in the oil business, but the soy bean can rival them. The bean contains from 15 to 19 per cent of oil, which can be extracted and put to commercial use. For purposes of oil production the soy bean promises to become tremendously important agriculturally.

"Recent processes of refining have made the soy bean oil available for use in the kitchen, and it is being used more and more for culinary purposes in Europe. It can be used in making soap, and it has a quick-drying property which fits it pre-eminently for a linseed substitute in the manufacture of paint. After the oil has been extracted a cake is left which is greatly superior to cottonseed cake in feeding livestock.

"Not least, soy beans make flour which competes very well with wheat flour for human food.

"These are the things that any one can do with soy beans. Two things only are necessary. First, get the beans. Second, find how to go to work."

COOKING SOY BEANS

Recipes for Preparing Dried Beans for the Table—Economical and Highly Nutritive Food.

Soy beans belong to the class of foods known as the legumes, which are familiar in one form or another to everyone in the United States. The white, or navy, beans are used largely in the North, cowpeas are more familiar in the South, and the red, or kidney, beans in the Southwest. Lentils, peas, and black beans are also legumes and so, too, are peanuts.

As specialists in the Office of Home Economics point out, the legumes, as a class, are very rich in protein, a subtsance needed for body-building purposes. The varieties of protein, though similar, differ in their chemical make-up, that of meat, milk, and eggs being usually described as "perfect" because it is entirely suitable for use in body building. The protein of common cereals and at least some legumes, on the other hand, has not all the parts necessary to make body protein. To add milk to such foods, as we so often do in planning meals, is an easy way of making sure that food meets the body needs as regards the kind of protein. For such reasons it follows that it is desirable to use legumes to reduce the amount of meat, milk, and eggs eaten, but not to replace them entirely. The legumes are, therefore, more correctly called "meat savers" than "meat substitutes." As savers of meat, however, all the legumes, and particularly soy beans, have a very high value, as the following figures show.

As Sources of Body Fuel.

Yellow soy beans, the variety most commonly used in America, are about three-eighths, or 38.5 per cent, protein and would have a fuel value not far from 2,000 calories per pound, if all material in them were completely digested. It is safe, probably, to estimate that in the case of all the legumes about eight-tenths is digested. This makes the figures for soy beans 30 per cent of digestible protein and the fuel value 1,600 calories per pound. The corresponding figures for navy beans are 16 per cent of digestible protein and about 1,300 calories per pound.

When soy beans sell for 10 cents per pound and navy or white beans at 30 cents, a person gets about five times as much protein for a given sum of money and four times as much body fuel in buying soy beans as in buying navy or white beans.

Soy Beans Rich in Fat.

A given sum of money spent for soy beans at 10 cents per pound brings about five times as much protein and six or seven times as much body fuel as if spent for round of beef at 30 cents per pound.

Besides protein, most of the legumes when ripe contain considerable starch and little fat. We like combinations of starch and fat, and for this reason legumes are cooked with fatty substances like salt pork or bacon, or are served with oil. Because of the starch they stick together more or less when cooked.

Soy beans, on the other hand, contain no starch when they are perfectly ripe, but are very rich in fat, resembling peanuts more than other common legumes. For this reason they need no added fat, a fact which few people realize. It is wasteful to bake soy beans with pork or to serve them with oil. These substances are added, to be sure, partly for their flavor, but it is wiser to flavor soy beans with a little onion, tomato, or pimiento, which supply no fat. Because they contain no starch, soy beans remain separate after they have been cooked. For this reason it is quite desirable to serve them with tomato sauce or to cook them with a little rice, or to contrive in some way to add a starchy substance. Because of their high fat content and compact texture, soy beans do not cook up so readily as navy beans.

Using Dried Soy Beans.

Dried soy beans should be soaked overnight or for an equal length of time in the day, then drained and cooked slowly in water until tender. The use of one-half teaspoon of soda for each quart of beans helps to make the beans tender. The temperature should be kept below the boiling point, or at what most housekeepers call the "simmering" point. Like other dried legumes the cooking can be economically done in a fireless cooker.

Unless soda has been added the water in which the beans are boiled can be used for soup. It resembles beef stock both in appearance and in taste. Chopped turnips, carrots, and onions can be added to it, or it can be flavored with tomatoes. Other ways of using it, such as adding macaroni, rice, or barley, will occur to the housekeeper.

Baked Soy Beans.

1 quart soy beans, 2 tablespoons molasses, 1 level tablespoon salt.

Pick over the beans and soak them overnight or an equal length of time by day. Pour off the water and cover with fresh water to which one-half level teaspoon of soda has been added. Cook just below the boiling point until tender. Pour off the water, put the beans in a baking dish with the salt and molasses. Cover with boiling water and bake slowly three or four hours, or until soft. Keep covered except during the last hour.

Boiled or Baked Beans and Tomatoes.

Either baked or boiled beans can be served with tomato sauce. The sauce may be made out of tomato juice(thick or thin, or out of a combination of tomato juice and soy-bean liquid. It should be seasoned with a little onion and, when convenient, with chopped green or red peppers. To each cup of hot juice add a level tablespoon of flour mixed with a little cold water for juice. Season and pour over the beans.

Soy-bean Loaf.

1 pint cold boiled beans, 1 cup bread crumbs, 2 tablespoons tomato catsup, 1 egg, 1 tablespoon finely chopped onion, salt and pepper.

Combine the ingredients. Form into a roll and bake. Serve with a savory sauce. The following has been found satisfactory.

Creole Sauce.

1 tablespoon fat or finely chopped salt pork or bacon, 1 tablespoon flour, 1 cup stewed tomatoes, 1 small onion, ½ cup chopped green peppers, salt.

Cook the tomatoes and onions together. Heat the fat, add the flour, and cook one or two minutes, being careful to brown. Add the tomatoes and cook until the mixture thickens, strain it, and reheat with the chopped peppers. Add salt.

Soy Beans and Rice.

1 pint soy beans, 2 tomatoes, or ½ cup stewed tomatoes, 2 level teaspoons salt, 1 cup rice, 1 slice onion.

Soak and boil the beans until tender. Cook the tomatoes with the onion. Strain, add the liquid in which the beans have been boiled and the salt. Cook the rice in this liquid, adding more water, if necessary. When the rice is soft combine with the beans and reheat.

Boiled soy beans can be put through a strainer or meat chopper and made into a thick soup, or can be seasoned and served with meat. The strained beans can be used in sandwiches. For this purpose they should be seasoned with lemon juice or vinegar, or mixed with a little finely chopped celery or cabbage.

Dry Feet and Warm Feet

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Worn by nine and one-half million people and sold by 55,000 dealers. Write for booklet, "More Days Wear."

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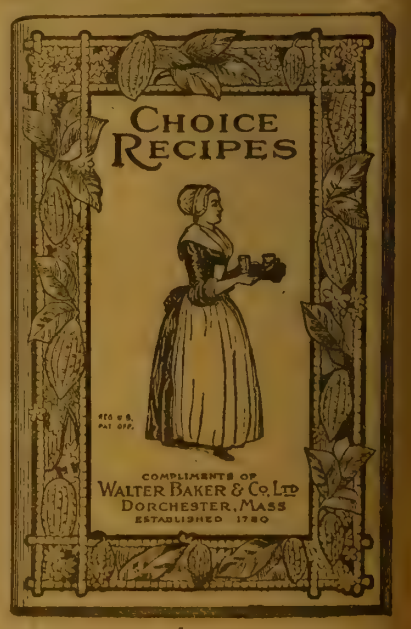

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and receive a copy of this little booklet, containing more than 150 recipes for the use of

BAKER'S COCOA AND CHOCOLATE

In the preparation of delicious drinks, dainty dishes and home-made candy.

Like all dry legumes, soy beans can be used with meat in making stews. In this way a little meat can be made to give the flavor to a dish of high food value. The attractiveness of this dish will depend upon the skill with which it is prepared and seasoned. Meat should be carefully browned, and highly flavored vegetables, like tomatoes, carrots, onions, etc., may be added. It should also be remembered that no fat is needed in this dish.

RICE CAN DO A SUPER-BIT

Rice combines well with any sort of fish, flesh, or fowl—so let meat do its bit and rice a super-bit in these dishes. The combination furnishes the nourishment of both bread and meat. Nothing more is needed for a dinner but a dessert of stewed fruit or a green salad.

Boiled Rice.

Wash a cup of rice in several waters. Drop rice slowly into a quart of boiling water, salt to taste, boil for 15 minutes, then cover and place on the back of the stove where it will finish swelling without burning. Do not stir.

Arrange rice in a ring on a hot dish and place in the center any meat hash, stew, creamed fish or chicken.

White Sauce.

For many of these dishes cream sauce is used. To make this, stir two tablespoons flour and one-half teaspoon salt into two tablespoons bubbling hot fat; add small amount of milk, mix well, then add remainder of two cups milk; cook, stirring constantly until it thickens, boil one minute; add seasonings to suit dish prepared.

Chicken Curry.

Add two cups cold chopped chicken to two cups white sauce; season with one teaspoon curry powder, heat thoroughly and dish into the rice. Mushrooms and a little celery top, chopped fine, may be used instead of curry powder.

Stock in which the chicken has been cooked may be used instead of white sauce in preparing this dish. Thicken the stock as for chicken gravy; season to taste, and add chopped chicken.

Creamed Oysters.

Drain liquor from a pint of oysters and add to it enough water to make a pint of liquid; follow directions for white sauce using this liquid instead of milk; season with pepper, salt and bits of celery top; add oysters and cook until the thin edges wrinkle; remove from fire and serve at once with rice.

Creamed Fish.

Wash one-half pound fish and soak several hours; flake cover with boiling water and cook 15 minutes; drain and cook a few minutes in two cups white sauce. In preparing white sauce for fish, cook a chopped onion in fat before adding flour; dish into the hollow of rice sprinkle top with paprika and chopped parsley and serve very hot.

Follow same directions for cooked fresh fish or canned salmon allowing two cups cream sauce to a cup of fish.

Left-Overs.

Any meat or chicken that can be converted into a hash or stew can be used with this dish or rice. Cook meat thoroughly, season well, provide plenty gravy and dish into the hot rice.

THE LITTLE TART

A tart is a different thing from a pie. The word "tart" hooks up with a Mother-Goose past and promises something that is different, and flatteringly individual.

Tart shells may be filled with preserves, honey or custard, and varied by adding meringues or a bit of whipped cream. Sprinkle top with chopped nuts or candied orange peel.

War Pastry

Wheatless and part wheat pastries are here offered to patriotic housewives. Line tart tins or muffin tins with one of the following pastries rolled thin. Bake before filling.

Combine as for other pastry the following ingredients, adding enough water for a stiff dough:

2 cups barley flour, ¼ teaspoon salt, 1-3 cup vegetable fat, ½ teaspoon baking powder.

Combine ingredients using enough liquid to make a dough that can be rolled thin. Bake in quick oven.

½ cup cornmeal, ½ cup wheat flour, ½ teaspoon salt, 1 tablespoon fat, 3 tablespoons milk.

Scald two cups finely ground oatmeal with one cup boiling water; add one teaspoon vegetable fat; roll very thin; bake in quick oven.

Orange Tarts.

When company is coming try these tarts:

1 cup boiling water, 4 tablespoons cornstarch, 1 large juicy orange, 2-3 cup white corn syrup, 1 teaspoon lemon juice, 3 eggs.

Rub cornstarch smooth with a little cold water, add the boiling water and cook for five minutes; add the pulp and part of the grated rind of the orange, the syrup and the lemon juice; heat thoroughly and pour slowly on the beaten yolks of the eggs; beat well; pour into tart shells; cover with meringue made from the whites of the eggs and flavored with lemon juice; sprinkle with grated lemon peel; brown in oven; serve cold.

Daisy Tarts.

Daisy tarts will please the children. Seed and mix one-half cup each raisins and dates; put fruit through food chopper; fill tart shells. Form daisy with a center of yellow preserves or candied orange peel and the petals of almonds cut lengthwise.

Cranberry Tarts.

Wash, dry, and prick one cup cranberries (unless cranberries are dried there will be too much liquid); cook berries with one cup white corn syrup into which a teaspoon of cornstarch has been stirred; when fruit is cold fill tart shells. Vary this by using half raisins and half cranberries.

Apple Tarts.

Make an apple sauce using white syrup instead of sugar; fill shells; sprinkle top with chopped nuts; place a square of currant jelly in center of each.

Apple-Raisin Tarts.

Wash and soak one cup seedless raisins over night; simmer in same water for an hour; add one quart peeled quartered apples and one-half cup white syrup; simmer together until done; fill tart shells.

CHEAPEST FOODS ON ENERGY BASIS

Studies of retail prices for food and the amount of vital energy obtained from different foods are being made by the U. S. Food Administration. The last monthly summary, including 57 commodities, shows that 17 are cheaper than bread (which is used as a convenient basis for comparison) and 39 are dearer than bread.

Staple foods which from an energy point of view are relatively cheaper than bread, and which American people have been urged to use freely, include: corn meal, rye flour, rolled oats, hominy grits, corn syrup, rice, and sweet potatoes.

NEW ZEALAND IMPORTS WHEAT

New Zealand's wheat acreage for the new crop is estimated at 189,000 acres as against 216,000 acres last year, when the crop was 1,250,000 bushels short of normal. Although it is one of the most important wheat-producing countries of the southern hemisphere. New Zealand has this season been compelled to import 1,500,000 bushels of wheat from Australia. Early in November the supply of wheat and flour in New Zealand was scarcely enough for two months' consumption.

ENGLAND NEEDS COTTONSEED

Owing to difficulties in transportation from India, Great Britain is suffering from a shortage of cottonseed. Oil cake is to be sold only as feed for dairy cows and pedigreed cattle. Although the Egyptian crop of cottonseed has been bought by the British government for distribution in England, the general scarcity of cottonseed has caused a steady advance in oil prices. Many of these prices long ago reached the maximum set by the Food Controller and a higher schedule of prices is expected soon.

Avoiding the Rush Hours

The curve in the right-hand corner of the illustration shows approximately the fluctuations of telephone calls at a large central office in a business section of a city. The high spots represent the rush hours for which additional operators and adequate equipment must always be ready.

To get easier hauls, the railroad engineer lowers grades and straightens curves, cutting through hills and filling valleys.

If the telephone traffic curve could be flattened by distributing a percentage of calls over less busy periods, it would effect a material saving and assist us to meet the extraordinary demands for telephone service.

Important business calls cannot be deferred, but there are many calls, social and less urgent, which might be made at other times without loss to the subscriber.

By avoiding these high spots in telephone traffic, and by making telephone calls of a social or less urgent nature before or after the rush hours, the telephone user will be cooperating with us in the patriotic service we are rendering the Government and help us to meet the constantly increasing demands for telephone service..

The Mountian States Telephone & Telegraph Company

LEARN FROM SUCCESSFUL FARMERS

Farmer Mail and Breeze.

A lawyer rents an office for about $25 a month, buys a desk and chair and rug for about $100, hangs out his sign, advertises, and reads every advertisement looking for business. He subscribes to every law journal published.

A doctor leaves a medical college, invests $100 for surgical instruments, $100 for a desk, chairs, and rug, sticks out a sign and begins practicing medicine. He advertises, reads the advertisements of other persons, and subscribes to every medical journal published.

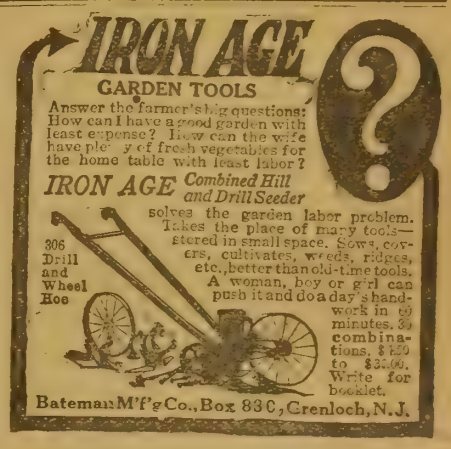
A veterinarian leaves college, rents a run down livery stable, buys instruments with which to work, amounting to about $100; sticks out a sign, advertises for business, reads the advertisements, and subscribes to every veterinary journal published.

You can go into the office of a lawyer, doctor, veterinarian, or any man with a profession, and you will find a very small investment, yet you will find a professional man that wants to keep up to date, and subscribes to every publication that would in any way give him information along his line of work.

A farmer invests from $5,000 to $50,000 in farm land. He invests thousands of dollars in improvements and in a great many cases he will try to convince you that one farm paper is all he needs. Instead, his plan should be the same as that used by the lawyer, the doctor, and the veterinarian—find out what the successful men in his line are doing. And the purpose of the successful farm papers is to give the plans worked out by good farmers—the systems that have proved to be successful.

The man whom you will get the most valuable help from are the successful farmers. How are they going to meet it? What additional machinery will they use? What technique have they planned for 1918? It will pay you to find out these things.

And you can find them out in the best way only by taking, and reading, a good farm paper. This will give the experience of the best producers generally, and the methods which the practical men have found to be the most profitable. This will allow you to profit from the work of all these other men. The money spent for a subscriptoin to farm papers is not an expense—it is an investment.



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WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

Prizes for Sugar Beets for 1918

The following prizes are offered by the Utah-Idaho Sugar Company, to its 1918 beet growers. The entire territory to be divided into three districts, No. 1 comprising the State of Utah, No. 2 the State of Idaho, and No. 3 the States of Washington. Oregon and Nevada. Those entering the contest can compete for one prize only, and each contestant must go into the class in which he belongs, according to his contracted acreage:

To the growers in each district contracting, planting, growing and delivering beets from an area between one-half acre and .99 acres, inclusive, prizes in money amounting to $100.00 will be offered for the largest tonnage grown on a half acre, divided as follows:

Largest tonnage.....$50.00
2nd largest tonnage..... 30.00
3rd largest tonnage..... 20.00

To the growers in each district contracting, planting, growing and delivering beets from an area between one acre and 1.99 acres, inclusive, prizes in money amounting to $150.00 will be offered for the largest tonnage grown on one acre, divided as follows:

Largest tonnage $75.00
2nd largest tonnage..... 45.00
3rd largest tonnage..... 30.00

To the growers in each district contracting, planting, growing and delivering beets from an area between two acres and 2.99 acres, inclusive, prizes in money amounting to $200.00 will be offered for the largest tonnage grown on two acres, divided as follows:

Largest tonnage $100.00
2nd largest tonnage.... 60.00
3rd largest tonnage.... 40.00

To the growers in each district contracting, planting, growing and delivering beets from an area between three acres and 3.99 acres, inclusive, prizes in money amounting to $250.00 will be offered for the largest tonnage grown on three acres, divided as follows:

Largest tonnage $125.00
2nd largest tonnage.... 75.00
3rd largest tonnage.... 50.00

To the growers in each district contracting, planting, growing and delivering beets from an area between four acres and 4.99 acres, inclusive, prizes in money amounting to $300.00 will be offered for the largest tonnage grown on four acres, divided as follows:

Largest tonnage $150.00
2nd largest tonnage.... 100.00
3rd largest tonnage.... 50.00

To the growers in each district contracting, planting, growing and delivering beets from an area between five acres and 9.99 acres, inclusive, prizes in money amounting to $350.00 will be offered for the largest tonnage grown on five acres, divided as follows:

Largest tonnage 175.00
2nd largest tonnage.... 115.00
3rd largest tonnage.... 60.00

To the growers in each district contracting, planting, growing and delivering beets from an area between ten acres and 19.99 acres, inclusive, prizes in money amounting to $400.00 will be offered for the largest tonnage grown on ten acres, divided as follows:

Largest tonnage $200.00
2nd largest tonnage.... 125.00
3rd largest tonnage.... 75.00

To the growers in each district contracting, planting, growing and delivering beets from an area between twenty acres and 29.99 acres, inclusive, prizes in money amounting to $500.00 will be offered for the largest tonnage grown on twenty acres, divided as follows:

Largest tonnage $250.00
2nd largest tonnage.... 150.00
3rd largest tonnage.... 100.00

To the grower in each of the three districts delivering the largest tonnage of sugar beets, regardless of acreage ..... $500.00.

To the grower in each of the three districts harvesting the largest acreage $500.00

TO SUGAR BEET GROWERS

By Mark Austin, General Agricultural Supt., Utah-Idaho Sugar Company.

The farmers of Utah and Idaho are to be congratulated on the excellent work they have done in getting their lands fall plowed. This gives the elements a chance to work on the soil, helps the farmers in the preparation of their seed beds and enables them to plant sooner than when spring plowing is to be done. Especially is this important on heavy lands, of which the farmers are aware.

There has also been a great deal of alfalfa sod plowed. The roots should be gotten on top of the ground to dry out, then as soon as conditions will permit the land should be replowed; this will add to the tonnage of sugar beets. However, there are more alfalfa lands that should be plowed up on account of their condition; they are old and have become thinned out with dandelions and noxious weeds, and are only raising one-half to two-thirds of a crop. Alfalfa land properly prepared is good for sugar beets and will last for a number of years.

It has been thoroughly demonstrated in Colorado, Utah and Idaho that an acre of beet tops siloed in a simple dirt silo is equal to that of the average acre of alfalfa hay worth $40.00 to $50.00, and it is estimated that the by-products from an acre of beets (pulp and syrup) with the beet tops siloed will furnish feed to one and one-half times as many sheep or cattle as an acre of alfalfa hay. In addition to this the farmers have the sale of their beets. Farmers should give these matters their consideration because they cannot afford to overlook them. Also, the fertilizing of the farm is one of the most important items connected with farming and the more stock he can feed, upon the farm, by utilizing the by-products of sugar beets as before mentioned, the better he is able to care for the fertility of the soil and increase its yields. This is not the case with potatoes. Also straw from the grain furnishes but very little feed. Usually there is a very good profit in feeding livestock and we hope our farmers will lay their plans to join together in securing the necessary livestock to utilize all of their beet tops and the pulp and syrup available to them the coming season, to the best possible advantage.

200 FARMERS WATCH DEVEY BEET TOPPER

Devey Beet Harvester Tested at Lincoln by Growers and Capitalists Proves it can Save Farmers Half the Cost of Harvesting.

Last Wednesday, the 26th, on the sugar factory grounds at Lincoln, was held a demonstration of a new beet topper and beet puller and lifter. These machines have recently been invented and constructed by John Devey of Lehi, Utah.

The field where the demonstration took place was not a regular unharvested field of beets, but a number of beets, which had been pitted to save for mother beets next spring, were hurriedly set in the ground and used for the experiment. The two machines behaved very nicely, and did good work topping and harvesting these beets. At demonstrations recently held in Utah, where fields of actual growing beets were harvested, even more satisfactory results have been obtained.

At the Lincoln demonstration more than 200 farmers from the Upper Snake River valley were in attendance, among them being the following:

From Ashton and Marysville district—Geo. Wilcomb, Geo. Herringfelt; from Egin Bench—B. V. Browning, Eph. Peterson, Mayhew Hillman; from Sugar City and Teton district—Hamilton Bros. Pinnock Bros., Peter Taylor, Jacob Johnson; from Lyman—Isaac and Ray Smith; from Lewisville and Menan—John W. Hart, W. W. Selch, Jr., Shippen Bros. Shurtliff Bros., Bishop David Kinghorn; from Rigby district—Josiah Call, J. W. Clinger; from Idaho Falls district—Christian Anderson, Leonard Ball, T. C. Barlow, W. E. Moeller, E. C. Barnes; from Shelly district—John E. Kelley, Jos. Oler, S. S. Humphries, Eterick Miller; from Blackfoot district—John Briggs, Jarv Jensen.

Will Top Beets for $2 An Acre.

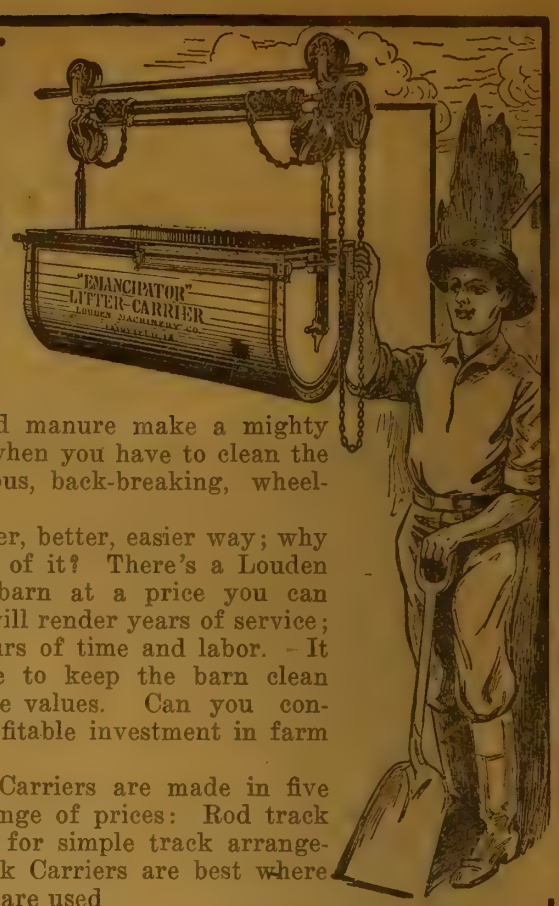
These gentlemen, together with a great many other leading farmers of the Snake River valley who were present, unanimously voted the two machines to be successes, and expressed their satisfaction over the work. It is estimated that with these machines beets can be topped for about $2 per acre, they can be pulled and lifted for $2 per acre, and they can be loaded for about $3 per acre, making a total of about $7 per acre to top, pull, lift and load the beets ready to be hauled off the field—thus reducing the cost of harvesting the beets by at least one-half. By using these machines, all hand work will be eliminated, except the loading, and later on it is planned to construct an elevator which will carry the beets right into the wagon.

John Devey, the inventor of the new machines, has held the position of master mechanic at the Lehi sugar factory for the past twenty-five years. and has been working on a beet harvester for the past ten years, and he is certainly to be congratulated on having perfected these machines, which will do such splendid work. Formerly the Utah-Idaho Sugar company owned a large per cent of the stock in Mr. Devey's company, and recently it has taken over all of Mr. Devey's patents and is actively arranging for the construction of these machines on a large scale in time to harvest the 1918 crop. As yet bids have not been received for the manufacturing of these machines, but as soon as the cost of manufacturing is obtained, orders can be placed for delivery next summer. These machines will be sold to the farmers at the lowest possible price, and good, reliable farmers will be allowed to pay on the installment plan.

The perfection and adoption of these machines to harvest sugar beets will mean a great revolution in the sugar-beet industry. Heretofore the harvesting of the crops has required a great deal of hand labor, which in Idaho has been performed mainly by foreigners. But with these new devices a large per cent of this labor will be eliminated, and what hand labor is left to be done will be of a lighter nature, which can be performed even by children.

It is confidently expected that as a result of this, the beet acreage in the Snake River valley for the season of 1918 will be greatly increased so that Idaho may do her share in supplying sugar for Uncle Sam's army in France.—Idaho Falls Register.

"It's a Snap" With a LOUDEN Litter Carrier



Mud, slush, and manure make a mighty nasty combination when you have to clean the barn by the laborious, back-breaking, wheelborrow method.

There's a quicker, better, easier way; why not take advantage of it? There's a Louden Carrier for YOUR barn at a price you can afford to pay. It will render years of service; it will save you hours of time and labor. It will make it possible to keep the barn clean and preserve manure values. Can you conceive of a more profitable investment in farm machinery?

Louden Litter Carriers are made in five styles, at a wide range of prices: Rod track carries are suitable for simple track arrangements. Solid Track Carriers are best where curves and switches are used.

You'll need a Louden Carrier this winter. May we work out an itemized quotation for you?

MILLER-CAHOON COMPANY

Murray, Utah Idaho Falls, Idaho

Good Harnesses Next Year

If your harnesses are properly cared for this winter, they will be in better condition next spring. By applying

DUCK-BACK Harness Oil

you revive the life of the leather, restore its pliability and toughness. The government strongly urges the use of oil to preserve leather of all kind. Order a can of "Duck-Back" today and use it.

Utah Oil Refining Co.

SALT LAKE CITY, UTAH

Prizes Awarded for 1917 Sugar Beets

Results on Best Farms.

The prizes offered by the Utah-Idaho Sugar Company for 1917 have been awarded.

Because of the unusal late spring and the short growing season the average tonnage per acre was not as high this year. Some good results have been obtained and are given beolw:

Sugar City Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
W. T. Clarke	Rexburg No. 1.	30	14.2
Peter Taylor	Rexburg No. 1.	40	14.7
K. Ota	Sugar City	30	15.1
C. Tsukogoshi	Sugar City	40	15.4
D. E. Rigby	Sugar City	40	14.5
Jas. Siddoway	Teton	50	15.8

Idaho Falls Factory District.

T. Matsumoto was given a prize of $100 for planting and harvesting the largest acreage of beets, viz: 140. Mr. M. Hirono of Roberts, Idaho, was given a prize of $100 for delivering the largest tonnage of beets, viz: 722 tons taken from 80 acres.

Shelly Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
Etrick Miller	Shelley, Ida.	25	9.56
Wilford M. Christensen	Shelley, Ida.	50	8.82
G. A. Davis	Shelley, Ida., No. 2	23	12.13
L. D. Cox	Shelley, Ida., No. 2	80	10.85

Garland Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
Jno. P. Holmgren	Bear River City	100	12
Isreal Hunsaker	Honeyville	30	12
E. Claude Jensen	Brigham City	17	17.06
S. Lee and O Marion Miller	Tremonton, Ut.	13	20.15
Jno H. Ward	Riverside	36	14.60
P. M. Anderson	Bear River City	12	17
Harry Green	Tremonton No. 2	43	14.34
Jos. H. Stoker	Tremonton No. 2	5	24
Peter Thomas	Malad	8½	16.82
Samuel Capner	Garland R. F. D.	5	17.80
Jos. Oyler	Garland R. F. D.	8½	17.41

Shersinghchalley & Co. were awarded the $100 prize in this district for having raised the largest acreage of beets, viz: 94. Ramus Hansen of Bear River City was awarded the $100 prize for the grower delivering the largest tonnage; from 75 acres he delivered a total tonnage of 1,050. Jos. H. Stoker of Tremonton No. 2 was awarded the prize of $50 to the grower having the highest average tonnage on five acres or more; he raised 24 tons per acre on five acres.

North Yakima Factory District

Name	Address	Acres	Av. Tonnage Per Acre
Edwin Britton	Toppenish	20	20
Bennett and Desellem	Toppenish	2	34
L. W. Chamberlain	Sunnyside	3	37
S. A. Benton	Sunnyside	15	24
K. Fujinuma	Mabton	2	40

W. B. Meyers of Toppenish was awarded the prize for the largest acreage grown in that district, he having contracted for 69 acres. Glen Campbell of Sunnyside was awarded the second prize of $100 for the largest tonnage delivered, viz: 270 tons delivered from ten acres. A Capistran of Moxee City was awarded a prize of $50 for the largest average tonnage of 5 acres or over, he having averaged on 5 acres 32 tons per acre.

Grants Pass Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
S. S. Stevens	Talent	4	27
T. Kamikawa	Medford	23	20
W. M. Bruin	Talent	2.5	18.89
G. N. Davis	Talent	7	18.37
Jno. Brenner	Central Point	8	17.93
K. M. C. Neill	Grants Pass	5	12.28
L. M. Foulke	Gazelle	8	12.04

Nibley & Thierolb of Medford, Oregon, were awarded the prize of $100 for the largest acreage planted, viz: 414. A prize of $50 was won by Mr. R. A. Pierce for the highest average tonnage on 5 acres or more; on ten acres Mr. Pierce raised 20.18 tons per acre.

Lehi Factory District

Name	Address	Acres	Av. Tonnage Per Acre
Leon Peet	Lehi	4	28
Powel Bros.	Lehi	12	23
Austin Bros. Assn.	Lehi	94	15
Len Hooley	Pleasant Grove	3	25
J. E. Welsh	American Fork	6	20.5
Elmer Holdaway	Vineyard	22	18
Knudson & Sons	Provo	15	19
Lewis R. Perry	Mapleton	2	22.5

Blackfoot Factory District.

K. Yasuda was given the first prize of $100 for having the largest number of acres; viz: 395. E. D. Jones was given a prize of $100 for delivering the largest tonnage

Payson Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
Clayton & Reece	Payson, Ut.	20	15
C. E. Gale	Payson, Ut.	20.5	15
Thos. E. Reece	Payson, Ut.	50	11
June Mortensen	Payson, Ut.	30	11.9

Glen and Wayne Loveless were given a first prize of $15 offered the school boys for the best average tonnage of beets grown; they harvested 2 acres from which they delivered an average of 15.20 tons of beets; second prize of $10 was given to Wayne Simons, who harvested from one acre 14.75 tons; third prize of $5 was given to Ray Butler who harvested 12.16 tons average per acre.

E. D. Hashimoto was awarded the prize of $100 for growing and delivering the largest acreage, viz: 108 acres.

IDEAL FEED MILLS

One and Two Horse—Ungeared

The Ideal feed mills are without doubt the fastest and best plain (ungeared) sweep feed mills in the world for grinding dry ear corn (husks off) or shelled corn into coarse or medium grade meal, and being of few parts can be maintained at a slight expense and will last a lifetime. The crusher is so designed to avoid the common trouble of shelling the corn from the cob as in other machines using wide dome and numerous fingers. Shipped regularly with coarse burrs, but fine burs can be furnished extra.

All sizes of Stover Feed Grinders and Alfalfa Cutters.

Send for Bulletin **Live Stock and Ground Feed.**

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

West Jordan Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
Wm. I. Allred	Sandy	9	21
Henry Closner	West Jordan	8½	20
J. N. Hutchings	Redwood	9	19
W. J. Leak	Redwood	6	19
C. F. Player	Bennion	7	20.5
E. M. Stone	Midvale	5	19.75
I. J. Wardle	Redwood	5¾	18.5
J. E. Clay & Reader	Midvale	25	14
Rueben Gardner	West Jordan	12	17
C. P. Meyers	Midvale	12	17

J. R. Allen, Draper, Utah, won prize of $100 for growing, planting and harvesting largest acreage of beets, viz: 63 acres.

Helmer Holmgreen, Midvale, Utah, won the prize for having delivered the largest tonnage of beets, viz: 417.22 tons from 30 acres.

Elsinore Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
John Nordfarr	Annabella	7	19.5
J. W. Sylvester	Elsinore	18	15.5
Carl E. Johnson	Salina	4.5	23.5
Martines Anderson	Aurora	9.5	19.7
Wm. Gardner	Venice	12.5	19.0

Samuel Gurr, Sigurd, was given a prize of $100 for planting and delivering the largest number of acres, viz: 80. Daniel Peterson, Richfield, was awarded a prize of $100 for delivering the largest tonnage of sugar beets, viz: 403 tons from 28.5 acres.

Spanish Fork Factory District.

Name	Address	Acres	Av. Tonnage Per Acre
Lars Nielson	Spanish Fork	22	13
Wallace Brockbank	Spanish Fork	12	15.5
James Sorenson	Spanish Fork	17	17.5
Geo. J. Hanson	Spanish Fork	13	15.5
F. B. Davis	Salem	16	18
L. A. Hatch	Salem	19.5	12.5

Lars P. Larsen, Spanish Fork was awarded the prize of $100 for growing and delivering the largest acreage, viz: 35, Erastus Hanson was awarded the prize of $100 for delivering the largest tonnage, viz: 418 tons from 22 acres or an average of 19 tons per acre.

Fallon, Nevada, Factory District.

Names	Address	
Roland Bass	Standish, Cal.	18 tons average per acre
J. H. Elledge	Standish, Cal.	18 tons average per acre
Thos.Dolf	Fallon, Nev.	14 tons average per acre
John Oats	Fallon, Nev.	13 tons average per acre
J. B. Cavasin	Fallon, Nev.	11 tons average per acre

Jannie & Passin were awarded the $100 prize for having planted and delivered the largest acreage. Jack Tanisaki of Standish, Calif., was awarded $100 prize for having delivered the largest tonnage, viz: 1,600 tons.

Belle—He said he was a millionaire's son, and here I find he is working for $10 a week.

Ida—This looks suspicious. A millionarie's son couldn't possibly earn over $5.

LIVE STOCK

THE CRYING NEED FOR MORE HOGS

A. F. Hughes, in Duroc Bulletin.

I have just come in from my noon feeding. The sows with their husky babies have just had a good feed of shorts, topped off at their mother's lunch counter for dessert, and have lain down for their noon nap. I myself have settled down at my desk and my eyes have fallen on the proclamation of President Wilson calling on the people for a day to "offer concerted prayer to Almighty God for His divine aid in the success of our armies to the end that the cause we give our lives and treasure for may triumph and our efforts be blessed with divine achievement."

These are wonderful lines and worthy of the great man who so ably voices the thoughts of our own hearts. But, since this war will be won more on the farms than in the battlefields, these millions of prayers can be divided into two classes: those who pray "Give us this day our daily bread" and those who pray that "Our efforts may be blessed with success,'' that the world may be fed—the respective prayers of consumers and producers. We are producers, and we cannot but be impressed with the meaning of our call.

Ten Per Cent of Illinois People Producing Food.

One has this thought brought home to him when he considers his own local conditions. Take the state of Illinois, for instance. My atlas gives the population as 5,638,591, of which 3,504,000 are in cities and towns of over 2,000. Of the remainder probably not over one-half are engaged in farm work. So, we find that only 10 per cent of the people of Illinois are actually producing. To feed our own state, each farm resident must produce enough to feed ten others. Add to the number the people of battle-scarred France and Belgium, the boys in the trenches, their wives, mothers and fathers—all are praying for food, and its seems that all will need that divine aid to which President Wilson directs us.

Of all foodstuffs, the most crying need is for fats, and on the shoulders of the pork producer settles the heaviest burden. If we are to be the agents in answering these prayers, as it looks now that we are, it is time that we were giving it the most serious consideration.

Means of Increasing Meat Supply

There are positively only two methods of increasing production of pork. One is to produce more head of stock, the other is to produce more pounds per head. The first of these methods is limited by the amount of available food. Our feed supply is already made for this year, aside from forage crops. Let us look at last season's production in regard to increased numbers in relation to available food. Since the beginning of the war, the available supply of hogs among the allies has decreased a little over eight million head. That of the United States has increased something over seven million head, so that so far as actual numbers are concerned we have been able to make up the deficit to a large extent. But as one goes into it further we find that even with our increased numbers the output in pounds is no greater than it was before. The grain that was heretofore fed to a smaller number of hogs this year was fed to more of them and the weight per head correspondingly increased. In this regard it is well to call attention to the fact that to the producer the profit was exceedingly reduced as he maintenance of the breeding herd was practically fixed and the earning power per head of their produce decreased.

Raise Pigs in City Back Yards.

Now, there are several ways to offset these conditions. If we can utilize certain waste, or by-products, not used before it will help out. If our cities will suspend during the duration of the war the ordinances prohibiting the keeping of hogs within the city limits and will allow the residents to utilize their slops, it will go a long way. There is no question but with proper sanitary requirements in this connection enforced that hogs can be kept without creating objectionable offenses. In fact, with the use of city water for flushing the pens they can be kept less offensively than a number of homes I have been unfortunate enough to visit. At one of my flat buildings in the city I recently saw three loaves of bread in the original wrappings in the garbage can. The use of these wasted foodstuffs would produce much pork and be real food conservation as well.

More Hog, Rather Than More Hogs

But, in my judgment, the route to the greatest increase in production lies not in more hogs but in more hog. The farmer seems to be the last to realize that the best investment he can make is the purchase of better tools for performing whatever task he wishes, and this seems truer of the hog end of it than of any other. Big business learned long ago that maximum earning power was more important than a lower installation charge. Only last week it was called to my attention that one of the best equipped ice plants in the state eight years ago had recently junked their machinery and installed different because the new performed the work better and cheaper.

Bringing this home to our own industry, what do we find? That we have a plant for the production of pork. That the amount of grain on hand for this year is now fixed and that it is no greater than last year's, after taking out the amount necessary to cereal feed for man, and that it is not more than sufficient to produce the amount of product of last year. That it is absolutely necessary that this increase be effected in order that we may meet our obligations to our country and mankind.

Use the Purebreds on Pork Herds.

There are only two ways to do this. Either we must purchase better equipment or make some improvement in what we have that will bring a higher return from the available food. The real increase in pork production must be effected by the use of the big purebred sire on the present grade herd, but better still by his use on purebred sows or his own or a similar breed.

Now, don't misunderstand me. This does not simply mean a purebred hog—it means one that has been bred for maximum production. There are lots of purebred hogs offered for sale that compare about as well with the big rangy fellow I refer to that can add the scale and carrying capacity to their offspring as an old flint-lock gun can with a modern machine gun. If we are going to fight the big, highly perfected, efficient guns of the Germans with hog, we must have the big, efficient hog to do it.

What's Back of a Pedigree?

When you go to a breeder and he shows you a big, rangy pig that can deliver the goods and asks you $100 or $150 for him and points to a pedigree with pride, not pride that it is extended to the 9th degree, but that it embodies the sires and dams that, by their power to produce advancement in the breed, have made this great pork machine possible, do not think that he "is selling you the papers." He is not. He is selling you the brains of himself and the breeders that went before him; the hours that they have lain awake at night and the sweat that flowed in the daytime; their very life blood, in order that a better hog might be born to the world. The price you pay for the hog, no matter how high, does not begin to compare with the labor of generations that has been expended in his production. And don't forget, either, that the highest cash returns that will accrue from this production was not to the men who bred them, but to the farmers who use them in their herds.

Purebreds More Efficient.

Now, don't think that my confidence in the purebred hog is based on some fellow's say-so. I have seen it proved out too often. On my farm I can show you a herd of hogs on which purebred sires of Durocs and Polands have been used for several years and which are fully 25 per cent larger than the individuals in neighboring herds that have been headed by "that pig I bought from Bill Green or John Brown, out of his old speckled sow." Last year some purebreds were tested out by being put in the lot with the grades and ran to same feed with same care and at weighing out were one-fourth larger than the grades. That meant 33 1-3 per cent profit by the use of purebreds.

Just consider what this would mean to our pork output. Less than one-half of 1 per cent of the hogs in America today are purebreds. If we can raise this percentage to ten and add 20 per cent to the weight of our pigs on the same maintenance, we will give Fritzie the buck ague. If we could put purebred sires of merit at the head of half the remaining 90 per cent of the herds and by so doing add 10 per cent to the production, we can win this war hands down.

We can do it. The story of the old darkey points the way. He heard the preacher say that "What you ask you shall receive," and this shine certainly did like chicken. So, he prayed at Thanksgiving for a chicken to be sent him, but none came. He repeated the prayer at Christmas, but still no chicken came. Then the preacher told him that when he prayed he must use his own efforts to make it come true. So, New Year's Eve he changed his prayer somewhat and said, "O Lord, send me to a chicken," and putting a sack on his shoulders he went out and the Lord answered his prayer. That is what we must do. We know what we want. We know how to get it. We must just go out and get that pork increase.

MILLION LESS SHEEP IN GREAT BRITAIN

Between the years 1916 and 1917, the number of sheep in the British Isles decreased slightly more than a million head. More than half of this decline, according to reports from the U. S. Food Administration, occurred in the class under one year old, showing diminished breeding operations.

Dogs may be friends of man, but sheep furnish clothing for his back.

ONE MAN CAN FARM MORE LAND *with the*

MOLINE UNIVERSAL TRACTOR

"It Solves the Farm Help Problem"

TWO million men will be gone from the farms because of the war. Yet production of food must be increased. There is only one way—equip the men left on the farms so they can do more work than ever before.

With the Moline-Universal—the original two-wheel tractor—*One Man* can farm more land than was ever before possible, because—

One Man has power at his command equal to five horses, capable of doing the work of seven horses owing to its greater speed and endurance.

One Man operates the Moline-Universal Tractor from the seat of the implement to which it is attached, where he must sit in order to do good work.

One Man can start in the spring and go from one operation to another—plowing, harrowing, planting, cultivating, mowing, harvesting grain or corn, spreading manure, filling the silo, cutting wood, etc., doing all farm work from one year's end to another, independently of horses or hired help.

Thousands of Moline-Universal Tractors are now at work under every conceivable condition in all parts of the United States and in Canada, England, France, Sweden, Norway, Denmark, Russia, Italy, Spain, Mexico, Peru, Argentine, Brazil, Cuba, Guatemala, South Africa, Australia. Wherever a Moline-Universal Tractor is sold, there is immediately a big demand for more.

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The Moline-Universal will solve your help and power problems. It is ready for you now. Write us today for free booklet giving full description of the Moline-Universal and name of your nearest Moline dealer.

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Made in 2, 4 and 6 horse sizes; can be used with tractor. Works equally well on side hill or level, or in wet or dry soil. Handles rocks and cuts alfalfa roots without plowing. Cuts or cleans ditches down to 4 feet deep. *All Steel, Reversible and Adjustable. Investigate the Martin NOW.*

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1577 Wazee Street Denver, Colorado

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THE RELATION OF FORAGE PLANTS TO THE DEVELOPMENT OF HOGS

R. W. King.

The critical condition of affairs brought on by our trouble with Germany has caused a widespread movement to raise more corn, potatoes, and meat. Our part is to produce the meat, and breeders must and will do their share in this work.

We must plan some way in which we can produce the same amount of pork on less of the "expensive grains," or more pork on the same amount of grain.

One of the best ways to do this is by raising forage crops.

If sows are turned into pasture at least two weks before they farrow, they will not be likely to have trouble in farrowing. They are in a better condition to give a large milk flow and are toned and loosened up by the green feed.

After farrowing the milk flow increases to the advantage of the pigs. A sow on pasture and three-fourths of the ordinary grain ration will do better than a whole grain ration without pasture.

Alfalfa, clover, or most any of the green pastures give slightly more than a maintenance ration. Add to this one-half to three-fourths of a full grain ration and a small amount of tankage, and you have a far better growing ration for pigs after weaning than grain alone, at a much less cost.

Green feed puts growing hogs in a condition where they are better fitted to put on size and meat. Pasture also gives growing pigs a chance to exercise and develop rugged constitutions, so they are able to ward off disease. Pigs will not go off feed nearly so quickly when on pasture.

An acre of alfalfa or clover will pasture fifteen to twenty shoats and ten or twelve broods sows. Rape, blue grass or vetch will pasture about the same.

No one or two forage crops can be suggested for a large amount of territory, owing to the varied amount of rainfall and the variety of climates.

Alfalfa and clover are probably the most widely used of the forage crops owing to their adaptability to a variety of conditions. Alfalfa and clover may be used as a pasture or fed dry in racks. In pasturing these crops it is better to have two or three pens or fields and change the pigs from one to another, giving part of the pasture a chance to grow. The value of pork produced from an acre of alfalfa or clover is from fif- [illegible] -five dollars. This is more than the hay is worth unless in exceptional cases.

In some sections blue grass is used as a pasture, but is not equal to alfalfa or clover, as it does not contain as much protein and more tankage or oil meat must be fed.

Peas and oats may be planted in the spring and are ready for pasture about first of August.

Barley and winter vetch may be planted in the fall and used as pasture in early spring, or hogged off later in the summer.

Rye may be planted either in the spring or fall, and makes good pasture or a fairly good crop to hog off.

Rape is a very common plant and may be seeded early in the Spring for early pasture. It may be planted later, according to conditions, for summer pasture and again after fall rains for fall pasture. If the rainfall is sufficient, it continues good pasture until killed by severe weather.

Let us co-operate in this movement to produce more forage crops for our hogs, and thus in benefiting ourselves, help our nation from ever having to put her citizens on short rations.

HOGS DO BEST IF FED ALL THEY WILL EAT

Sufficient feed, as well as the right kind, is pointed out by the Ohio Experiment Station as essential to securing rapid gains in hogs and a desirable degree of fatness, or finish, when the hogs are marketed. Pigs that gain most rapidly generally bring the greatest profits because they do more business in a given time and thus reduce risk and overhead expenses. Often they are marketed earlier and bring a higher price. Quick gains generally mean a low feed requirement for a pound of gain.

Hogs gained slightly more than 1½ pounds daily for 62 days in one test when fed all they would consume without waste f ground corn mixed with one-eighth as much tankage. Other hogs given three-fourths of a feed gained only 1 1-6 pounds a day and required four pounds more grain for 100 pounds gain in live weight.

Pigs fed heavily in dry lot feeding have a higher market value per pound than others given a light ration. An abundance of feed for the hog serves the interests of both producers and consumers better than scanty rations do.

HOW TO WIN THF WAR

H. B. Joy.

The question of who wins the war is a problem of endurance, which in turn depends on the food supply. It has been said that an army fights on its belly. Evidently it is our duty to see that the fight does not lag for lack of our support.

Mr. Hoover has very emphatically pointed out that food animals are of more consequence than grain. While the situation is serious, it also offers the best means of rapid solution through the production of hogs. This class of livestock reproduces itself in greater numbers than any other, and the finished product can be put on the market in the shortest time. Assuming that the profit on hogs was no greater than on other kinds of meat animals, yet the fact that the capital invested can be made to give this return twice a year, or at least three times in two years should be a strong argument for raising hogs. Many farmers overlook this important point in regard to their profits.

This country is exporting, and consuming at home, more pork products than it is producing. The result will be felt in abnormal prices for pork unless the surplus in grain is marketed through an increase in animals. The amount of feed in the United States is more than sufficient for the animals we now have. Thus there are only two possible ways to solve the hog problem—and consequently win the war. They are: first, we must reduce our home consumption; and, second, we must increase our production by keeping the brood sow on the farm.

HEAVY HOG SLAUGHTER IN BRITISH ISLES

Hogs have decreased much more than any other class of livestock in the British Isles according to officials figures secured by the U. S. Food Administration. Between the year 1916 and 1917, the number of swine in Ireland decreased 26.4 per cent; in England and Wales 11.5 per cent and in Scotland 9.5 per cent.

The total decline was over 600,000 of which more than 50,000 were breeding sows. These figures should be an added stimulus to the hog industry in the United States.

BRITISH HORSE INDUSTRY

The effect of the war on the horse industry in the British Isles is strikingly shown in figures announced by the U. S. Food Administration. The number of horses in England and Scotland increased slightly from 1916 to 1917, while in Ireland there was a small decrease.

The figures show a striking increase in horses used for agriculture and a decrease in the number used for pleasure and in mercantile lines. In 1916 about 2,288,500 horses were used for agriculture and in 1917 the number had increased to 1,320,383, which is nearly two-thirds of the total. The number of colts decreased considerably, indicating less breeding.

One benefit of the war is that it has induced consumers to study foods and food values.

The Cure for a Billion Dollar Waste

THIS year—if you own no spreader, you are not only losing out on the bigger yields and profits that should be yours, but you are contributing to a billion-dollar manure waste, and stopping your ears to the world-call for food.

We have facts and figures to show that in scores of cases the use of an International Harvester spreader has added to crops more than enough to pay for the spreader in one year.

The dealer will show you the new **No. 8 Low Corn King, Cloverleaf** or **20th Century.** This is the latest International Harvester spreader, the popular 2-horse, light-draft, narrow-box machine with the remarkable new spiral wide-spread. For the small-to-average farm this is bound to be the spreader success of the year. Look it over from tongue to spiral, see it at work, and you will agree with us.

In the **Low Corn King, Cloverleaf** and **20th Century** lines are larger spreaders too, with disk or spiral wide-spread, all of narrow, easy-handling width; low, of remarkably light draft, strongly and simply constructed. Write us for catalogues and see the local dealer for a satisfactory money-making **Low Corn King, Cloverleaf** or **20th Century spreader.**

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Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
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FIRST ANNUAL SALE OF
The Southern Idaho Short Horn Breeders
AT TWIN FALLS, IDA.

McMASTERS SALE PAVALLION

Tuesday, Jan. 22, 1918

40 HEAD OF REG. SHORT HORN CATTLE 40

Consisting of 20 head of good, thick beefy bulls and 20 head of females of the right type, some heavy in calf others with calves by side.

The consignment carries the blood of White Hall Sulton, Villager, Avondale, St. Valentine, Choice Goods, Young Abbolsburn, Babton Diamond and other noted sires.

Cattle are consigned by H. H. Schildman, J. A. Gifford and J. F. Blakeley of Filer, Idaho, C. A. McMaster, Twin Falls, Idaho; Leland Bros., Wendell, Idaho; and others.

C. A. McMASTER, Sales Manager, Twin Falls, Idaho.
E. O. Walter, Buhl; Idaho, R. R. Clayton, Jerome, Idaho; Auctioneers.
Write Sales Manager for Sale Catalog.

POULTRY WARRIORS WILL HELP WIN THE WAR

(Continued from page 1)

late winter and early spring months.

Every farmer is urged to start the hatching season earlier than usual this year, either by incubation or natural methods if the hens will sit earlier.

The chickens first hatched in the spring are the ones that are largest in the summer, that mature first in the fall, and that lay eggs in the winter. Furthermore they are the ones that will want to sit early the following spring which, in turn, will hatch earlier chickens—and so the cycle will continue. On the contrary chickens hatched late in the spring do not mature until so late in the fall that they will not become winter layers. They will not sit until late the next spring, and so another cycle of late maturing, late laying fowls is established.

About seven months are required for a chicken to grow to maturity. During that period of growth its feed goes to the making of bone, flesh, feathers. When it becomes mature its feed goes to the making of eggs and the hen commences to lay. If a bird matures and commences laying in the fall before cold weather she will continue laying all winter if properly cared for. Birds that are still growing when cold weather comes, and do not mature until during the winter season, will very rarely commence laying late the next spring.

The early hatched chicken has a longer growing season, before cold weather. It has more time in which to develop—simply gets an earlier start—and grows larger. One of the principal reasons that the farm flocks of the United States show a low average weight of fowls is that the cycle of late hatching has become established. That custom can be displaced and early hatching established by killing off the late hatched birds and retaining only the earliest hatched birds for stock. Once the cycle of early hatching is effected it will perpetuate itself. The impulse of the early hatched chicken to sit early herself and produce more early hatched chickens having the same impulse will continue on and on.

Chickens are hurt most by lice in the midsummer months. The late hatched chicken has not had time to become large or strong enough to resist such attacks, but the early hatched chicken has, by midsummer, grown sufficiently strong and hardy to resist the attacks of the lice. Because its early development has preceded the very hot weather, the early hatched birds are more apt to live through the summer.

So the farmer who hatches early does these things:

Gets more chickens, because a larger proportion of the total hatch will live.

Gets more actual meat, because more chickens will live, and because they will weigh more at maturity than late hatched birds will weigh.

Gets more eggs, because the early hatched pullets will lay eggs during the winter and the late hatched ones will not.

What Poultry Will Do.

Summing up the situation, these are the things for the farmer to do in order to increase poultry production:

Stop marketing for meat this winter the young hens and pullets that have potential egg production value next year. Save stock now to insure an adequate supply of layers for next spring.

Start the hatching season earlier this spring.

Produce infertile eggs after hatching season.

Dispose of eggs not needed for home use twice a week.

Preserve eggs for winter use at home from the surplus of the heavy laying season.

The advantages to the farmer, in doing these things will be:

First and fundamentally, that he is performing a patriotic service and helping win the war. He will also reduce his cost of living. He will have more stuff to sell. He will make more money.

The poultry increase must come from the general farms, and every farmer must do his part. He will be turning wasteage into food, to his own profit, and he will be helping his country. He will be improving his land while he is fighting the Kaiser. Ninety pounds of manure per year is produced from an ordinary fowl. Not half of it is collected, usually, but even upon that basis, fifty fowls will give at least a ton of manure that properly used is as valuable as commercial fertilizer.

The farmer need not fear overproduction of poultry and eggs. With the maximum production urged—or more—there will still be a gap of many millions of people, between the total number of producers and consumers. The increased production will have the effect of popularizing poultry food—making it available to many people who have not been able to afford it. And yet, production cost having been so low, the producer will have a good profit.

The greatest poultry increase will be in chickens, but some ducks and geese should be raised on most farms. The goose grows faster than any other fowl, and both geese and ducks are fat producers, and will yield porkfat substitutes for home use. Turkeys, the most difficult fowls to raise, should be handled extensively only by those who are familiar with the bird and have large range for them.

Every farm must have poultry, or more poultry this year. It will help win the war.

Save the Hens.

Thrifty young hens and pullets should not be marketed at this time or during the winter months. They should be kept for stock this year, when there must be a very large increase in poultry and egg supplies as an essential part of the food production campaign which must be carried out if we are to win the war.

Already the poultry stock of the country has been dangerously reduced by sales of pullets and young hens during the late summer and fall. These have been eaten, or killed. Each of these fowls represented a potential egg production of from five to twelve dozen eggs this year and each young hen marketed for food this winter may mean a reduction of this year's possible egg supply to that extent. Farmers, dealers, shippers and all who are interested in poultry affairs, are urged to save fowls of producing qualities so they may be on hand for stock in the early spring.

This year it will be necessary for poultry to be produced on every farm and in every backyard in town, where conditions permit. Farmers who have not been producing poultry must do so this year, and those who have been producing must increase the number of fowls in their flocks. By this general increase, and the putting away of eggs for winter use, there will be millions of pounds of beef and pork released for use in Europe. No meat supply can be increased as rapidly and economically as poultry, and its increase, so far as food reserves for the war are concerned, will be almost as valuable as though a proportionate quantity of animal meat stuffs had been quickly obtained. It is possible to double poultry production in one year. That year must be 1918. It will help win the war. Raise poultry and do your part.

WHAT'S A ROOSTER WORTH?

This year many farmers will wish to introduce new blood into their flocks of poultry by purchasing a pure-bred cockerel to mate with a few of their best hens. The question is frequently asked, "How much should I pay for a good cockerel?" Farmers with a surplus of fine quality cockerels are often in doubt as to how much they have a right to ask for these valuable breeders.

In general the price a farmer should pay for a cockerel is determined by the quality of the stock. Some breeders may have a large flock of cockerels which they expect to sell for broilers and roasters and these birds can usually be purchased at prices as low as seventy-five cents or one dollar. If the farmer desires a bird of that type he should not pay a cent more than the broiler price. Of course the price paid does not determine the quality of the bird and the buyer gains nothing by paying ten dollars for a one dollar breeder. However, the breeder with the flock of broilers and roasters may have been doing some careful breeding work over a period of several years. He follows this with careful culling until the twenty or thirty cockerels he offers for breeding are the pick of a flock of several hundred based upon his ability as a judge gained through years of practical experience. Then the select cockerels may be worth ten dollars each or more for they represent wonderful possibilities in making a rapid improvement in a farm flock and they are worth much more than the average of the flock.

The farmer with surplus cockerels for sale should first cull thoroughly and then feel free to ask a fair price for the select members of the flock. He should not expect to sell birds fit only for market at fancy prices. At the same time if the flock has been carefully culled the breeder is honest in expecting extra good prices for the best of the birds. There is always a market for good cockerels of any of the standard breeds and this is especially true if a large number of farmers in the section are breeding the same kind of birds that you own. Usually they will prefer to buy their birds near home if possible and this offers the farmer a chance to make additional money on his purebred poultry at a small selling expense. Of course if the breeder has a large number of birds of quality it pays to adverise both in the local papers and farm journals. Every farmer knows that he occasionally needs a good breeding cockerel and it is plausible to suspect that a large number of the neighbors will be prospective customers if they are informed that there is good stock for sale in their community. There are many poultry

(Continued on page 15)

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

We have in the Bear River valley some of the finest farms there are to be found in the state of Utah which we can sell on ten years' time and an easy payment down, ranging in price from $115 to $200 per acre.

We have lying just under the canal 160 acres, all under cultivation. This property has been farmed for a good many years and is one of the best farms in the Bear River valley. This land has been used for dry-farm purposes, although it can be irrigated and lies in excellent shape for irrigation. This property can be exchanged for Salt Lake or Davis county property, and the price is $75 per acre.

40 acres, without improvements, lying in the same neighborhood, with the same water rights; has been into sugar beets and alfalfa. The place is fenced with a woven-wire fence and is right near the main canal. This property we are holding for $160 per acre and will accept property in exchange.

80-acre farm, with an eight-room modern house, hot-water heat, bathroom with all the fixtures, water piped to the house and barn, nice lawn, shade trees, hedge fence, good granary, chicken house, hog pens and other outbuildings too numerous to mention. This property can be exchanged for a smaller place. Price $175 per acre.

60 acres, under the same identical conditions, that we are offering, for the same price.

We are offering some excellent farms in exchange for Salt Lake City or Weber county property. These farms have a first-class water right in the Bear River canal, are well improved, under a high state of cultivation, right close to Tremonton, one of the best towns in northern Utah. These places are strictly adapted for sugar beets, alfalfa, grain, fruit; in fact, anything that's grown in this district. Climatic conditions are good. Water for domestic purposes, modern conveniences and accessibility are all good.

In Cache valley some first-class farms, all irrigated, water for domestic purposes, under a high state of cultivation.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

YOUR INCUBATOR

Should soon be in operation for best results. Take no chances, get the leading hot water machines, a Buckeye or Queen. "Do your bit" for "Uncle Sams" meat supply. Write TODAY for **Big Free Seed and Poultry Supply Catalog.**

PORTER-WALTON CO.
Salt Lake City

Save Grain For Human Food!

Feed your livestock

COTTONSEED CAKE

AND

SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

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IF YOU WANT A **REAL** AUTOMOBLE BARGAIN

Write us about our used car snaps

BUICKS OLDSMOBLIES

NATIONALS

Easy Terms

RANDALL-DODD AUTO CO.

Auto Row

Salt Lake City, Utah.

FOR SALE

"VICTOR'S DEFENDER"

2nd Prize Junior Champion boar at Utah and Idaho State Fairs 1917.

A wonderful hog for 16 months old, with good bone, high back, and a whale for his age. Is in the way of my "Defenders" sows.

Also a few choice young "Defender" boars for sale. Orders placed now for spring pigs.

V. R. FISHER

Oxford Idaho

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 604¼ and 607½ lbs. butter in one year respectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow over all breeds. These bulls will be sold at farmers prices.

H. H. STIYER

Buhl Idaho

FOR SALE

15 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH

Buhl Idaho

WHAT'S A ROOSTER WORTH?

(Continued from page 14)

farmers who spend more time in reading the advertising of other breeders than they do in reading the articles in the same papers.

When buying a cockerel it pays to remember that this bird is going to be half the flock. Of course his good points will be reduced if mated to poor hens but if all things are equal the cockerel will be about fifty per cent in determining the quality of the young stock raised from his mating during the next year. Therefore it pays to aim at sometning and not just select a male because he is fairly good looking. If you are aiming at egg production there are many reliable breeders selling trap-nested stock who can guarantee you a male bird from a hen in the two hundred egg class. This male will probably not be an exhibition bird but if you desire egg production he is the kind of cockeral which is of the most value. If you are a poultry fancier it will be necessary to know the points of a winner and the cockerel you buy should be the son of a winning bird and should possess all of the points of a prospective winner.

The poultry business has reached a stage where it requires more thought and skill for success than ever before. We can now make more or lose more on our birds than has been possible in the past. The best of men in the poultry business seem to know the value of the cockerel with vigor and good breeding and it follows that the farmers who develop the best paying flocks will be the men who do not hesitate to pay extra good prices for quality cockerels. At the same time they must be sufficiently informed concerning quality so that they will not injure their flocks with the inferior bird which is priced at more than it is worth.—R. G. Kirby.

YOUR YEAR'S READING

Did it ever occur to you that much of the difference between people may be tracted to the character of the papers, magazines and books which they read? In molding character, shaping habits of thought, modifying speech, and imparting information, both general and such as relates to one's own business, the written word is far more potent than the spoken. Nor does it influence alone the inner man; it has its effect upon his appearance, his manner of dress, his relations with his fellow-men. Someone has said: "Tell me what a man reads, and I will tell you what he is," and he would not miss it very often.

The selection of the year's reading matter for the farm home is a matter of much more importance than it may appear to be, and especially when there are young folks in the home. And the task is all the harder because of the great mass of current reading to be had at any price the subscriber is willing to pay. To our notion there are two or three points to be kept constantly in mind when making this selection:

First, we would resolutely reject sensational stuff, whether dailies, weeklies, magazines or farm papers. Why pay a publisher who is after your dollar only to misinform you, stir up your prejudices, give you wrong impressions and poison the minds of your children?

Second, we would reject all papers and magazines which play up scandals and which carry sex-problem stories. Fortunately, the number of these is decreasing, but there are still far too many. They spread corroding thoughts which are as destructive to the moral fiber as disease germs are to the physical tissue.

Third, we would scan the advertisements, and refuse to subscribe for papers which carry any advertisements of a questionable nature. It is silly to pay a publisher for introducing to you some scalawag who will swindle you.

Fourth, we would subscribe for only such periodicals as are clean, wholesome, and reflect a sane and hopeful view of life; that act as a mental stimulant as well as impart information worth while.

The farm house which receives one good daily, to give in brief form the principal events of the state, nation and world; the local weekly, to give community news; one or more magazines, not the purely fiction sort, but which bring a careful digest of important happenings interpreted with more care than is possible for the daily, and one or more farm papers, is well supplied with current reading matter. When to these are added some standard books of fiction, history, biography, and science, selected with care and having in mind the tastes of the different members of the family, there will be no lack of mental food at hand for the long winter evenings.

We suggest that the character of the farm paper should be scanned as closely as the character of the dailies and the magazines. There are all sorts of farm papers, and, unfortunately, some of them just as intemperately sensational as some of the dailies. During the next few years the right sort of an agricultural paper will have greater opportunities to render real service to its readers than ever before, and the wrong sort will have greater opportunities to do harm. The economic problems of the farmer will become more and more preplexing as the war continues, and he would do well to keep clear of that class of farm papers that are edited solely from the business office, and that are circulated for a few cents or for nothing; and especially of those papers which pander to shallow thinkers and pose as friends of the farmer by suggesting sensational political action. All such are simply grinding their own axes at the farmer's expense.—Wallace's Farmer.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

AROUND THE CORNER.

Around the corner I have a friend,
In this great city that has no end;
Yet days go by and weeks rush on,
And before I know it a year is gone,
And I never see my old friend's face;
For Life is a swift and terrible race.
He knows I like him just as well
As in the days when I rang his bell
And he rang mine. We were younger then;
And now we are busy, tired men—
Tired with playing a foolish game;
Tired with trying to make a name.
"To-morrow," I say, "I will call on Jim,
Just to show that I'm thinking of him."
But to-morrow comes—and to-morrow goes;
And the distance between us grows and grows.
Around the corner! — yet miles away . . .
"Here's a telegram, sir." . . .
"Jim died to-day!"
And that's what we get, and deserve in the end,
Around the corner, a vanished friend.

Charles Hanson Towne.

"An honest reputation is within the reach of all men; they obtain it by social virtues and by doing their duty. This kind of reputation, it is true, is neither brilliant nor startling, but it is often the most useful for happiness."—Duclos.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars weighing about 100 pounds each, sired by Richards Pathfinder 1st Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please.

ERIK W. OLSON

Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS

Provo Utah

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

Wellington Utah

FOR SALE

Purebred Holstein-Friesian Bull

Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndike 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

FOR SALE AT THE KESKO FARM

15 Registered HEREFORD BULLS, and 20 Registered HEREFORD HEIFERS bred or open.

A HAMPSHIRE DOWN RAM lamb.

Also Registered ANGORA GOATS of both Sex.

I will take your Liberty Bond as part pay on the above.

Also some nice MULES.

I can furnish you with grade steers and heifers of any breed if you will let me know what you want.

JAMES G. OLSEN

Ephraim Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

200 Tons Corn Silage

30 TONS OF ALFALFA, 30 LOADS OF STRAW

All in first class shape, must be fed on the place, help for feeding can be obtained, shelter or shed room provided.

Three Miles North of Pleasant Grove.

A. P. WARNICK, Pleasant Grove, Utah.

EDISON'S *NEW* DIAMOND

AMBEROLA

MADE IN THE "WIZARD'S" LABORATORY, FOR USE IN YOUR HOME. *Will you try it.*

Model 50, Edison Diamond Amberola

SEE the coupon at the bottom of the page? That little slip of paper sent to an Edison dealer, with your name and address on it, will bring to your home Edison's latest model Diamond Amberola, the wonderful phonograph with the GENUINE DIAMOND reproducer point, no loose needles or any thing like that to bother with.

NO one has to learn to play the Amperola. It is as simple to operate as A, B, C. It will give you any kind of music you like, from "rag" to grand opera. And be sure to bear in mind that it is a GENUINE EDISON INVENTION, made in the great Laboratories of Thomas A. Edison at Orange, N. J. Every part is either designed by Edison himself or one of his most trusted, high-priced assistants, but the design of every part, down to the tiniest screw, is O.K'd by Edison himself before it can become a part of the Amberola.

Just as much as if he knew you personally, Edison wants you to have one of his marvelous New Diamond Amberolas in your home. In this way you may know that it is all that is claimed for it. This will be done on an

ABSOLUTELY FREE TRIAL

No strings to this offer. No red-tape. First you will want to get full particulars about the free trial and especially a copy of

"A MASTER PRODUCT OF A MASTER MIND"

The Beautiful Amberola Booklet, Illustrated in Natural Colors

When you receive this booklet, select from it the model Amberola you prefer, also any twelve records from the Blue Amberol Record Catalog. Blue Amberol Records are almost unwearable and unbreakable. As soon as he can pack and ship them, the dealer will send the Amberola and records. When they arrive make believe they are yours, then you will realize what wonderful times you could have for years to come if they actually belonged to you. No need for either young folks or old folks to go out for entertainment, no more dull evenings.

Unless you are already the owner of a New Edison Diamond Amberola, there is no reason in the world why you should not take advantage of this offer. You will at least have three days of delightful music in your home, and the dealer will consider his time and money well spent, because he knows that, once you hear it, you will have nothing but praise for the Amberola. The sooner you send the coupon, the better chance you will have of getting the model Amberola and the records you prefer.

SOME AMBEROLA MUSIC

The records listed below will give you a good idea of the kind of music you can have with the Amberola. Look over the list. We are sure you will find many of your favorites.

SACRED

Flee as a Bird
Hark! Hark! My Soul
Is My Name Written There
I Surrender All
I Will Sing of My Redeemer
Looking This Way
Lord, I'm Coming Home
O Come, All Ye Faithful
The Palms
Softly and Tenderly

NEGRO MELODIES

Dinah
Kentucky Babe
My Little Cotton Dolly
Ma Pickaninny Babe
Old Folks at Home

VOCAL QUARTETS

Call to Arms
Lorena
Old Black Joe
Owl in the Old Oak Tree
Perfect Day
Quartet from Rigoletto
When the Corn is Waving

ORCHESTRA

Blue Danube Waltz
Somewhere a Voice is Calling
Teddy Bears' Picnic
Whispering Flowers

RECITATIONS

An Old Sweetheart of Mine
Finch's The Blue and the Gray
Lasca
Out to Old Aunt Mary's
Sheridan's Ride

BANDS

Gladiator March
Laughing Love
Night of Gladness Waltz
Old Comrades' March
Rienzi Overture
Skaters' Waltz
Spirit of Independence March
Tambour der Garde Overture

VOCAL DUETS

Somewhere a Voice is Calling
Sympathy—The Firefly
Home to our Mountains—Il Trovatore
Miserere—Il Trovatore
When I'm Gone You'll Soon Forget
Whispering Hope

VICTOR HERBERT ORCHESTRA

Dream Melody—Intermezzo—Naughty Marietta
Red Mill Selections
Ruy Blas Overture

TALKING AND SINGING

Aunt Dinah's Golden Wedding
Funny Doings at Sleepy Hollow
My Uncle's Farm
Turkey in the Straw Sketch

INSTRUMENTAL SOLOS

Jocelyn-Berceuse (Violoncello)
A Dream (Cornet)
Humoreske (Violin)
Mediation—Thais (Violin)
Mocking Bird, Fantasia (Xylophone)
Nightingale (Piccolo)
The Rosary (Cornet)

INSTRUMENTAL TRIOS

Love and Devotion
Love's Old Sweet Song
Titl's Serenade,
Sweetest Story Ever Told

VOCAL MEDLEYS

Favorite Airs from The Beggar Student
Famous Songs in Irish Plays
Favorite Airs from Patience
Songs of Other Days
Songs We Used to Sing in Dixie Land

BELLS

Dancing on the House Top
First Heart Throbs
Light as a Feather
Little Flatterer

PROUDFIT SPORTING GOODS COMPANY, OGDEN, UTAH.

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ALBION—E. M. Snodgrass
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FILER—F. E. Drake
HAILEY—J. J. Tracy
IDAHO FALLS—Alma Marker
IDAHO FALLS—Geo. M. Scott
KIMBERLEY—Stowes Pharmacy
MALAD—B. B. Davis
MT. HOME—F. J. Pilliner
MONTPELIER—Thor C. Nielsen
NAMPA—Tom Poole
POCATELLO—H. H. Whittlesey
PRESTON—Foss Bros.
ST. ANTHONY—Ashcraft Jewelry Co.
SODA SPRINGS—C. A. Piar
TWIN FALLS—Colwell & Spargur
UTAH
BINGHAM CANYON—M. L. James
BRIGHAM CITY—Hansen Furniture Co.
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FAIRVIEW—Chas. Peacock
LOGAN—Harris Music Co.
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MONROE—Monroe Drug Co.
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PAYSON—C. E. Smith
SALT LAKE CITY—Keith O'Brien Co.
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GRAND JUNCTION—H. W. Vorbeck
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KEMMERER—Kemmer Hdw. and Furniture Co.
ROCK SPRINGS—Henry Chipp.
AFTON—Burton Mercantile Co.
NEVADA
ELKO—Dupont Pharmacy
ELY—Ira J. McKnight

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Please send me the Amberola Book and particulars about your FREE TRIAL

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV No. 25 LEHI AND SALT LAKE CITY, UTAH. JANUARY 19, 1918

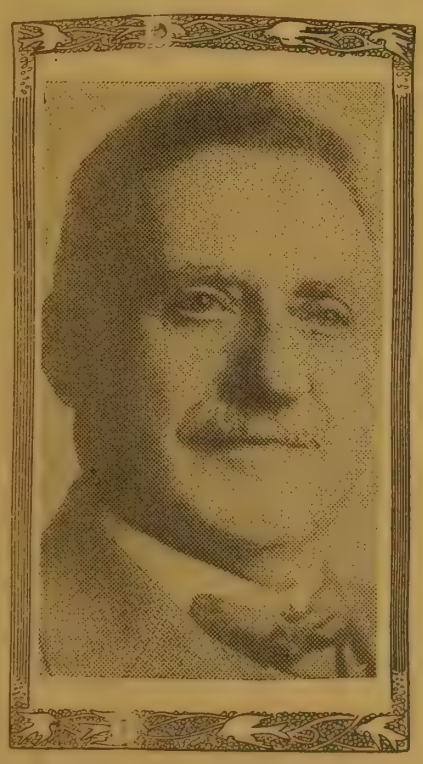
A Message to The Farmers of Utah

From The Governor of Our State

Simon Bamberger

I AM very grateful to the Utah Farmer for this opportunity to express to the farmers of Utah personally and in behalf of the State of Utah my appreciation of the wonderful service they performed for the state and nation in their response to the appeal of the state and nation for increased crop production during the past year.

After a long, hard winter, with prospects not the brightest for a successful harvest season, the farmers of Utah were asked to do their utmost to increase the cultivated area of the state and to increase the yield per acre. When the people of the United States went to the war with the imperial government of Germany the patriotic duty of the liberty-loving American farmer was clear. The brave soldiers were to fight for freedom on the battle-field, but it was the farmers in the wheatfields on whom the armies of freedom depended in order that they might wage a victorious struggle. Throughout the United States the farmers responded enthusiastically, but nowhere was the response so wonderful as in Utah.



SIMON BAMBERGER
Governor of Utah.

The President of the United States appealed to the farmer to aid in the battle for liberty. Your governor transmitted this appeal to the farmers of Utah. The Utah farmer heard the appeal, raised a flag on his farm and went to work. New ground was broken. New crops were planted and a wonderful harvest was reaped. No state in the union showed such an increase in cultivated area, or such an increase in the average yield per acre.

That was the record of the farmer for 1917 in crop production. Not alone in the production of foodstuffs did the Utah farmer take the lead. He helped materially in swelling the wonderful contribution that Utah made to the Red Cross and he magnificiently oversubscribed two big issues of Liberty Loan bonds. The patriotism of the Utah farmer is not passive. Farmer boys from Utah have already reached the battlefields in Europe and others will follow soon. They may be depended upon to find the shortest road to Berlin and peace.

The record of Utah for 1917 is so good that we will find it difficult to surpass it in 1918, but surpass it we must for there is only one place for Utah and that is in front ranks.

There are indication thus early in the season that augur well for the success of the Utah farmer during the coming season. The long mild fall gave the farmer the opportunity to harvest all of his late crops and to do more fall plowing than has ever been done heretofore in the history of Utah. Until a few days ago the worry of the farmer was whether or not sufficient moisture would be stored in the hills during the winter to provide water for next season's crops. The million-dollar snow storms of the past few days have relieved the farmer of that concern.

The farmers of Utah in my judgment should now make their plans for the spring planting. They should arrange to increase the area under cultivation to the absolute limit and they should plant crops that will produce the greatest amount of foodstuffs for the armies of the democracies of the world. Each farmer has many problems—problems of which many of us have little understanding. Now is the time to work out, theoretically at least, these problems. Arrangements should now be made for seed, for farm implements and for the handling of a mass of other agricultural detail. Above all each farmer should now resolve to raise a little more foodstuffs, a little more livestock, and add a little more to the production of the nation than he did last year.

The nation expects Utah to do her duty. Utah expects each citizen to do his duty. The duty of the farmer of Utah to the state and nation is probably a little more important than that of any other citizen. I am firmly convinced that the farmer will not fail the state and nation in this crisis.

Beet Culture; Its Relation to Soil and Rotation

A. C. Maxson.

In spite of the fact that a large acreage of sugar beets has been grown in northern Colorado for the past 15 or 16 years, the realtion of this crop to the fertility of the soil seems to be little understood or appreciated. It is a well known fact that those countries where sugar beets have been grown for any number of years produce larger yields of all other crops than we do. It would be assuming too much to attribute all this difference to the growing of beets, however, the farmers of those countries consider the sugar beet a necessary crop because of the direct and indirect benefit derived from its cultivation.

With the exception of alfalfa, the sugar beet is the most important crop we have when conisdered in the light of its relation to soil fertility. Unlike alfalfa, beets do not add any element of plant food to the soil, however, the statement that they are much harder on the soil than other crops is incorrect.

As compared with a crop of 50 bushels of wheat per acre, the average crop of sugar beets removes less nitrogen and phosphorous and about 1½ times as much potash from the soil. If the beet tops and the by-products of the sugar factory are fed to stock and the manure thus produced applied to the fields, beets are not as hard on the soil as wheat.

In considering the benefits derived from the growing of sugar beets we must give due credit to the deep plowing required, the thorough cultivation and the deep rooting habit of the crop, but what I want especially to emphasize is that the beet crop produces large quantities of cheap feed which can be used in the production of manure with which to enrich our fields.

I am fully aware that if the farmer is to derive any benefit from this manure that it must be produced on the farm. With this end in view the management of the Longmont factory has worked out a system of pulp distribution, the main object of which is to induce farmers and others to feed on the farms and not in the feed lots.

While the large feeder may oppose a system of this kind, the factory people should do all in their power to have the manure, produced by the feeding of the pulp and other by-products of the sugar factory, produced on the farms.

The allotment of pulp this year is 5 tons per acre of beets. This gives a farmer growing 20 acres, 100 tons or about enough roughage to finish 20 head of steers. Figuring the average feeding period as 100 days, this number of steers should produce not far from 60 tons of manure, enough to cover 10 acres at the rate of 6 tons to the acre. This amount can be greatly increased by using straw in the feed lot.

No other farm product is as variable in composition and value as manure. It varies with the kind of animal, the age and condition of the animal, the feed fed, the kind and amount of litter it contains and the manner in which it is preserved.

Any valuation placed upon manure must necessarily be an approximation only. What seems to be a conservative estimate is given in a bulletin of the N. Y. Cornell Station. The author bases his figures on the value of the plant food in the manure of well fed animals given enough bedding to keep them reasonably clean. It is stated that a ton of sheep manure is worth $3.30; a ton of hog manure $3.29; a ton of horse manure $2.21; a ton of calf manure $2.18; a ton of cow manure, $2.02. Using the same value used in this bulletin for the nitrogen, phosphorous and potash in our manure and the per cents of these elements which Prof. Headden of the Agricultural College found in cattle manure collected about Fort Collins and assuming that there are 10,000 head on the farms about Longmont, the manure produced would be worth $69,000.00.

A valuation of manure based upon the plant food it contains is apt to be misleading as it does not take into account the physical effect upon the soil, nor the effect upon the number and activity of the soil bacteria. It appears that with us these are of more importance than the plant food added to the soil. Our experiment field at Longmont shows that the increased yield of sugar beets due to manure is 2.75 tons per acre greater than that resulting from an application of commercial nitrogen and phosphorous in quantities similar to the amounts of these elements in the manure. It must also be borne in mind that the effects of the manure are only partially felt the first season but are extended over several years.

While a great deal may be expected from the manure in the way of increased yields, still its full value is not realized unless used in conjunction with systematic rotation.

The practice of rotating crops is one of the fundamental principals of agriculture and when properly planned, results in greater yields and the conservation of soil fertility.

In order to understand the relation of any crop to crop rotation we must be familiar with the principles underlying this practice and to which all rotation should conform. Briefly stated, they are:

(1) All rotations should include a money crop which should be the principal crop each year.

(2) Crops should be rotated so as to keep the soil in the best mechanical condition.

(3) In arid countries rotations should be arranged to make the most economical use of water.

(4) A cultivated crop should be included in all rotations.

(5) An even distribution of labor should be secured by rotation.

(6) Deep and shallow rooting crops should alternate.

(7) Some leguminous crops should be grown.

(8) Farm manure should be used where it will do the most good.

(9) Humus producing and humus consuming crops should alternate.

(10) All rotations should include some crop which produces feed for livestock.

The sugar beet fits into rotations better than most crops.

In it we have a money crop, if properly handled.

The deep plowing and thorough cultivation essential to best results very materially improve the mechanical condition of the soil.

The growing of sugar beets extends the irrigation period over the greater part of the growing season, thus relieving the heavy draft upon the early water which would result from exclusive grain growing.

In the sugar beet we have a cultivated crop well adapted to our heavy soils where the potato is not considered a good crop.

The planting and harvesting of sugar beets come at times of the year when other crops are either planted or harvested, thus equalizing the labor on the farm.

As compared with the grains and potatoes, the sugar beet is a comparatively deep rooting crop and should alternate with them.

Sugar beets respond freely to manure. In fact, stubble ground manured produced the highest priced crop on our rotation field as an average of six years.

I have already shown that beets produce large quantities of cheap feed for live stock which can very profitably be converted into manure with which to enrich our fields.

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More Wheat For Utah

By George Stewart, Assistant Professor of Agronomy, Utah Agricultural College.

Great Britain and France are bending every effort to a vigorous prosecution of the war. Therefore whatever added strength the Allies get, they must get from the United States. Since it takes a long time to train armies, America cannot take any great part in waging the actual battles before mid-summer, perhaps not before the spring of 1919. She can, however, be of great help otherwise. Soon our new merchant ships should begin to count against the submarine. Important, however, as is shipbuilding and the sending of soldiers to Europe, it is none the less vital to supply with food the armies now fighting. In fact, it may be more important, for poorly-nourished men cannot long endure the strain of trench warfare.

Now it so nappens that the greatest food want in France today is wheat. This we must largely supply. What is so important because it is both a convenient and a nutritious ration. It is convenient because it is so easily handled both before and after grinding. It does not spoil so readily as corn when stored in large quantities, as in ship loads for example. Moreover, bread made from wheat is highly nutritious and is more delicious to Englishmen and Frenchmen than other breads. This is rather important, for men thrive best only on that which they like.

A Short Wheat Crop

How comes it that Britain and France are more dependent on us than in times of peace? First, the 1917 wheat crops that usually supply these countries—those of India, Egypt, Argentina, and Australia—were abnormally poor. Secondly, America is now a member of the Allies. Thirdly, the enormous Russian wheat crop cannot reach France or England because the Central Empires control all Russian outlets by sea as well as by land. Fourthly and finally, France and Britain have turned such a large part of their resources into emergency industries, such as munition manufacturing, that their own food production has been sadly disturbed.

America Must Feed the Allies

Manifestly, then, the United States must furnish all this extra wheat. Since our 1917 crop was only slightly better than normal, it is necessary to economize. This we are already doing. We must also increase our production. Utah has been requested to increase her 1918 crop by one million bushels. Just what this means is clear when it is known that in the ordinary year Utah produces between six and seven millions of bushels. An extra million of bushels then means an increase of about one-sixth or one-seventh.

This increase, if increase is to be made at all, will be made largely by increased planting. The fertility of the land cannot be markedly increased in a single season. Besides, the seed used this year, if there be any difference at all, is poorer than seed of ordinary years. The reason for this is that the unusually high price of the winter of 1916-17 caused farmers to sell out more completely than usual. This left good seed scarce in these localities where no special lot is saved for seed.

Increase Wheat Acreage.

There remains then only increased acreage as a method of markedly increasing wheat production. In Utah this is peculiarly difficult, because two-thirds of the crop is winter grain There was, however, considerable extra acreage planted last fall. Not only can nothing now be done to increase this acreage of fall-planted wheat, but very little can be done to increase acre yields. Of course extra protection against fire, animals, and migratory pests, such as birds and grasshoppers, will conserve the crop. This, however, can in no way be interpreted as a means of increasing the production—it merely prevents waste. How then may an increase be brought about?

At the disposal of Utah farmers are two methods of increasing production of spring wheat. These are by planting acres not hitherto sown to spring wheat, and by taking added care with seed and seedbed, thereby encouraging greater acre yields. Small grains might be made otherwise, but the two ways already named are by all odds the greatest opportunities.

Additional spring wheat areas may be secured by using land that is not ordinarily cropped and by sowing to wheat acres that ordinarily grown other crops. This, however, is not so simple as it seems at first. Most spring grain is irrigated in Utah, but it has been long advocated that wheat should pass to unirrigated lands.

Spring Wheat on Dry Land

The natural query at this point is whether or not spring grain may be grown on the dry-farm. Although winter grain out yields that planted in spring on the dry land, spring grain may be grown profitably. This will of course be on areas that for some reason were not fall-planted. There is always considerable land left over because of delayed plowing or other unavoidable mishaps. Last spring part of such areas were spring planted to Sonora, Marquis, or Kubanka

(Continued on page 14)

December Weather In Utah

Thomas A. Blair, Observer, Weather Bureau.

Salt Lake City, Utah,
January 14, 1918.

The mild weather which characterized last November in this state continued even more markedly throughout December, which was the warmest December since state wide records began, the nearest approach to it being in 1906, when the average temperature was 33.3 degrees, as compared with 36.4 degrees this year. This month's average was only slightly less than the normal for March. The departures were generally greatest in the northern half of the state, and at several points they exceeded 13 degrees. In general the first thirteen days of the month were cooler than the remainder, the lowest temperatures occuring most frequently on the 11th, and the highest on the 19th. The only station reporting temperatures below zero was Black's Fork in Summit county at an elevation of 8775 feet.

Precipitation was every where light, and there was practically none in the area drained by the Colorado river and its tributaries. The greater part of the moisture fell as rain, and there was no lasting snow cover except in the mountain districts. The snowfall was the lightest that has fallen in December since 1900.

Owing to the mildness of the weather, the ground remained unfrozen, and plowing continued throughout the month with some seeding of wheat. Where the moisture was sufficient winter grain continued growing and was in good condition, but in much of the state the ground remained too dry for germination or growth. In some sections buds of fruit and other trees and shrubs were developing and grass starting. Livestock were much favored by the warm weather and maintained a good condition with practically no feeding. The mountain stock ranges remained open to considerable elevations, and desert ranges were good, but the lack of snow kept stock from ranging far from permanent watering places.

Previous Warm Decembers.

Averages for the state extend only to 1891, but a comparison of the records at Salt Lake City, which go back to 1874, indicates that there have been eight Decembers since that date with an average temperature of 4 degrees or more above normal, namely, 1875, 1886, 1888, 1889, 1890, 1893, 1896, and 1906. Of these only 1890 and 1896 were also dry months. In 1890, November was also warm and dry, and the following January and February were dry and of about average temperature, and March was cool and wet. The warm and dry December of 1896 was preceded by a cool and wet November, and followed by an average January, and a cool and wet February and March. In 1906, while December was warm with about normal precipitation, November was cool and wet, and the remainder of the winter was remarkably warm and wet, February 1907 being the warmest of record and one of the three wettest. On the whole the winter of 1906-07 is the warmest that has been recorded, averaging for the five months, November to March, inclusive, 4 degrees above the normal. It was also a wet winter, with about three inches more than the normal precipitation.

Going back to the earlier years, December 1889 was the most remarkable, being the wettest December ever recorded as well as the warmest previous to 1917. The remainder of that winter was also wet but it was colder than the average winter. The previous December that of 1888, was also warm and wet but was followed by one of the coldest and driest Januarys ever recorded here.

Of the remaining winters with warm Decembers that of 1875-76 was remarkably wet, with an excess of precipitation of more than seven inches, the greatest amounts falling in November and March; that of 1886-87 was marked by one of the coldest Novembers but the remainder of the winter was warm with about average precipitation, and that of 1893-94 averaged cooler than usual, and had the usual amount of precipitation. Thus, of the eight winters in which December was warm, three were warm and wet, two were warm and dry, two were cold and dry, and one was cold and wet. It is evident that a warm December fursishes no basis from which to anticipate what the remainder of the winter will be like, it may be either warm or cold, wet or dry.

Effect on Crops.

Following the warm and wet winter of 1906-07 there was a remarkably good wheat crop in the state,with an average of 28.8 bushels per acre, but the winter of 1889-90 was also warm and wet and the crop was below the average, yielding only 17.5 bushels per acre for the state, the same yield being produced the next year following a cold and dry winter. After the warm Decembers of 1893 and 1896, for the first of which the winter as a whole was cold and dry, and for the latter cold and wet, the yield of wheat was practically normal. Statistics for other crops are not available, but it is clear that no forecast of the favorableness or unfavorableness of the coming season can be made from a study of the December weather alone.

Hints On Economical Meat Production

John T. Caine III, Director of Extension Division, Utah Agricultural College.
Address Delivered at American National Livestock Association.

The World War has brought about great changes in the livestock business, just as it has in many others. Some of these changes such as the increase in prices for livestock products work out the benefit of the industry. From all sides during the last year entreaties and commands have come to increase meat production. We were told and are told now, it must be done. The stockmen have responded and by this shown their loyalty. Now, however, this call for increased meat production can not be so easily met for new conditions and new laws have to be considered. Labor is sure to be short and the new homestead law is sure to materially decrease the range for the next few years. If as is the case at present the range is practically all taken and most of it put to beneficial use, then the cutting down of the grazing area must cut down the production of meat. If we can not get more range and so more feed, then in order to produce more meat new methods must be introduced into the livestock business. Some methods of more economically producing meat are well understood by many stockmen who are putting them in practice, but they form a small proportion so there is room for much work along these lines

The problem before the stockmen is methods that will enable him to produce more meat from a given area of range, or a given amount of feed. The discussion will naturally fall then into the following subdivisions. Improvement of livestock, improvement of range and better methods of feeding, improvement in methods of management.

In contemplating increased production of meat good stock is of prime importance. The scrub has gone forever and in its place only a specialized meat producing animal of the early maturing sorts, that are economical in their use of food, can be raised. It takes good blood for us

(Continued on page 7)

DAIRYING

COST OF PRODUCING DAIRY PRODUCTS

By W. H. Underwood.

The farm cost of producing farm products cannot be figured out as accurately as the factory cost of factory products. There are so many varying conditions and so many factors that cannot be computed that, while the cost of producing milk or butterfat can be fairly closely estimated, there is always a factor of uncertainty or estimate about it that cannot be eliminated.

The cost of producing milk or butterfat, from the standpoint of cost of feed, can be fairly accurately obtained. But the food of production is only one factor. The labor of production must be estimated. Besides, we give the cow credit only for the butterfat or milk she produces and estimate that the skimmilk and the calf and the manure she produces will pay for the cost of labor, interest on investment, depreciation, etc. Now, in my judgment, in some instances these products will more than pay the cost of labor, in fact, much more, and in other instances it might be a questionable estimate.

Some people do not get much value out of their skimmilk because they do not feed it in connection with other proper feeds. This by-product is an unbalanced ration and if not balanced with the right kind of food, much of its value is lost. Then, too, if fed to well-bred animals it is easy to understand that one can get a greater value out of it than when fed to unthrifty, scrub animals.

It is the same with the calf. If it is well bred and well born and properly fed and cared for, it is worth much more than if it is only a scrub, poorly fed and indifferently cared for. Here, again, the food cost of butterfat or milk does not always show the correct cost.

With the manure the same conclusions must be drawn. The value of the manure depends, in part, on the ration fed. Well fed and liberally fed animals product manure superior in plant food to those that are underfed or improperly fed. We can't get something out of nothing. Then, how is this manure handled? There is a chance for a large part of its value (its plant value) to be absolutely wasted by careless handling. And, again, if it is carefully preserved, on what crops it is applied and how much is used at one application? There is a chance for great waste or loss, for it may be as much of an unbalanced food to the plant as skimmilk is to the calf. If it is unbalanced then it should be balanced by adding the plant food nutrient that is lacking.

The three above named by-products of dairying may, therefore, be so handled that they do not pay for the cost of labor, or they may be so handled to much more than pay the cost, consequently, the food cost of butterfat or milk may or may not represent the entire cost.

The cost of butterfat or of milk as determined by the usual method of keeping a dairy record is, in a sense, not the real farm cost. It is the cost where the food is charged to the cow at market price. And this market price may or may not be farm cost of the food. It always should be greater than the farm cost, else the farm profits are not what they should be; but in some cases, at least, the farm cost of grain or hay is greater than the market price, and in these cases the determined cost of butterfat or milk, by the record, is less than the actual cost. If these foodstuffs are grown for less than the market price, then the determined price, as shown by the record, will be greater than the farm cost.

For instance, suppose one grows some oats on his farm that costs more than the market price. They should be charged to the cows at market price. It would not be fair to the cows for him to charge them at the farm cost price and when he charges them at the market price the cost of butterfat or milk will not be the actual cost of him that year. And so it is with corn silage and hay. One year the cost of crops placed in the silo or in the barn is more per ton than another year and this affects the cost of dairy products produced on the farm.

The cost per unit of different dairy foods produced on the farm varies on different farms. One farmer is a better farmer than his neighbor. He perhaps has a greater advantage in having a better farm. The land has been kept up in crop producing power or was originally more fertile. One farmer has greater executive ability than another. We find this everywhere in all kinds of business. Or one man has a greater working capital which enables him to do things on time and in the best way. It takes working capital to take advantage of farming opportunities just as well as it does to take advantage of other business opportunities.

There are a great many factors to consider in the cost of farm products and it is easy to understand that the cost of these products varies with the season, the land, methods of farming, etc., and an accurate estimate of the cost of farm products can be arrived at only by considering a wide and varied number of instances for an extended number of years.

If the cost of the products is confined to one farm there can be no degree of accuracy from one year or two years. We can tell what it cost to produce butterfat last year or the year before in our herd where the market price of the food products is charged to the cows and the cows are credited with the butterfat produced at the market price. This cost will not be the same in any one year because the cows do not always produce alike and other conditions are not alike.

Businessmen in other callings often criticize the farmer because he cannot tell the cost of farm products. Some say that if other business was run as slack so far as knowing the cost of production is concerned it would go to the dogs and it probably would. But the case is entirely different. The cost of production in farm products varies with almost every season. Men in other vocations who scold and find fault with the farmer because he does not keep accurate accounts and does not know the actual cost of production would find if they got actually up against the actual proposition that they would not know any more about the problem when they got through than the farmer does.

Another important factor that anyone can readily appreciate is that the care of the cows will materially affect the yield of milk and hence the cost of butterfat or milk. A real cow man in charge of a herd will increase the production materially even without increasing the cost of feed. A cow is different kind of a machine than the manufacturer has to deal with, a different element of human nature must be possessed by the operator to get the best results. A cow is a machine possessed with intelligence and a mind of her own which must be catered to in a right way if good results are to be obtained. The businessman and many agricultural educators seem to ignore such facts about farming and think we can figure cost results as accurately in farming as they can in their lines of business where this important element of living machines does not enter at all. I repeat, it cannot be done. But after the uncertainties of the question are all considered it is true that the farmer who can estimate the most accurately the cost of production is the man best capable of making a success. In fact he is the man who is making the success today.

Looking Forward into 1918

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COLD COWS CAN'T PRODUCE EFFICIENTLY

M. H. Fohrman.

A high producing dairy animal is a delicate and well balanced piece of machinery, and consequently she can not continue normal production if she is exposed to severe winter weather. It is therefore essential that the discomforts incident to cold weather be eliminated if possible. The comfortable cow will repay in milk the necessary labor for her protection. Dairymen as a rule are more careful with their cows than the average farmer who merely produces the milk for family use.

Cows frequently refuse to drink the water in an icy trough. A cow must be thirsty, indeed, before she will fill herself with freezing water. It is necessary, in view of the fact that milk contains about 87 per cent water, to warm the drinking water for dairy cows if highest possible production is to be maintained. Unless the cow drinks a sufficient quantity of water her milk production will diminish, and she will not drink enough unless it is warm. Suitable shelter from cold rains and raw winds is another comfort which the cow will repay in milk.

A sufficient quantity of nourishing feed is, of course, a prime requisite if cows are expected to continue to produce milk after freezing weather has killed pastures. Corn stover and oat straw will hardly supply sufficient nutrients to maintain average production.

Sleet and freezing rains cause insecure footing, and care should be used in turning cows out of the barn. Ice at the doorway should be covered with cinders to prevent slipping. Do not hurry the animals and cause undue crowding. A slip and fall on the ice can readily result in injury to or loss of a valuable cow.

These things have been said often, but they bear repetition when cold weather comes with accompanying discomforts. While they apply more specifically to the dairymen, it is well for all farmers to heed these suggestions and endeavor to keep all cows in milk to help increase the food supply for this winter.

Crossing a heavy milk producer of one breed and a high butter-fat producer of another in an attempt to combine the two characters in the offspring is like trying to produce milk custard by grafting milkweed on eggplant.—Reclamation Record.

YOUR JUDGMENT as to the number of sows which you can breed is final. Uncle Sam asks and expects all of us to think carefully, to try earnestly and to do our best. He is behind us.

AGE LIMIT OF COWS

W. H. Underwood.

In the life of the dairy cow as in that of every other living thing there are three natural periods. These are indicated by the terms growth, maturity and decline. Productiveness does not begin until the first period is well advanced. This state is largely preparatory. Toward its close the productive powers of the cow are rapidly developed and she becomes a source of income. During the period of maturity the cow is at her best. For a few years from the time it is reached she ought to yield a large profit for her owner. At the close of this period a downward movement begins. This is slight at first, but it will go on until it comes to an end with the total failure of the productive functions during the life of the animal or their destruction with its death.

For a while, perhaps for some years after the period of decline begins, a cow may much more than pay her way, but if she lives she will eventually reach the age limit of profitable production. It is well to dispose of her a good while before this point is reached, for, though she is not yet a source of expense, she is taking room and care and is using feed that would be much more profitably used by a younger animal.

But to determine just the best time at which to dispose of an aged cow is not always an easy matter. The natural basis for judgment on this point is the number of years she has lived. And this is an item that should be considered even though she appears to have failed but very little. Yet when taken by itself this test is not decisive and it may be very misleading, for a considerable extent the term age has only a relative meaning. As far as usefulness is concerned some cows are as old at eight years as others are at 16. Consequently each individual must be judged by herself.

There is a good deal to be said in favor of keeping a good cow considerably beyond the close of her period of maturity. If the dairy business is to be continued cows must be kept. If those which have passed the time of their best possible performance are gotten rid of others must be obtained to take their places. In this exchange there will be more or less risk. Judging from the past the owner of an old cow can tell what she is likely to do in the future. If he buys a young cow he cannot be nearly as sure what returns she will make. If she is in a healthy condition and is well developed and from high producing dairy stock there are strong possibilities that she will do well in the production of milk and butterfat and calves. And yet there is some wisdom in the remark of an old dairyman who said that he would rather have a good cow than a good cow's calf. There can be no question as to the merits of a cow that has been thoroughly tested and has proven to be good, but there will be some uncertainty regarding what kind of a cow her calf will become.

On the theory that "a bird in the hand is worth two in the bush" it would not seem best to turn off a good cow as soon as the least waning of her productive powers is discovered. On the other hand, she should not be kept too long. Just when she should be disposed of will depend largely on her vigor, the condition of her teeth and digestion and on whether she has been highly fed or has recently had a serious illness.

And even though the cow appears to be strong and in good condition, if she is kept after she has passed her prime, she will need more careful attention and more liberal feeding than she required in her earlier years. Yet good feeding and extra care or anything else will not restore the degree of vigor and capacity that she has lost. The cost that can be accomplished is to somewhat retard the natural progress of her decline. While she may for some time pay well for all that is done for her she will be exposed to the perils which inevitably come with advancing age.

METHODS OF TREATING AND PREVENTING CALF SCOURS

Dr. F. B. Hadley.

The commonest disease of calves is scours. Whether of the common form or the form known as "white" scours, the disease annually causes a tremendous loss to the farmer both among the dairy and the beef producers. It is important in these abnormal times of a world's shortage in both dairy products and meats that it should be avoided as far as possible. With this end in view I herewith present a brief and practical description of the disease in its two forms, their causes, and methods of treating and preventing them.

Common Scours of Calves.

The causes of simple diarrhea or scours can frequently be traced to errors in feeding either the nursing cow or the calf or both. Unsound ensilage, brewer's grains, beet pulp, and similar feeds may so alter the cow's milk that it will cause diarrhea in the calves. Other frequent causes are retention of the afterbirth and dirty teats. If the milk is fed from a pail or bucket which has not been properly cleaned and scalded, scours often occurs. Frothy, sour, tainted, and very cold milk may act in a similar manner. To long intervals between feeds, irregular nursing, and exposure to damp or cold are occasional causes.

The chief symptoms is a profuse watery bowel discharge with a very sour odor. If this is not stopped the calf becomes very weak and lies down most of the time. It belches gas and often has colicky pains.

Treatment consists of a physic of one to two ounces of castor oil, mixed with half a pint of milk, to cleanse the bowels. This is to be followed in a few hours with a heaping teaspoonful dose of a mixture of salol, one part; subnitrate of bismuth, two parts, and bicarbonate of soda, two parts. This dose is to be repeated every four hours until the diarrhea ceases. The powder may be given in a little fresh milk or dry upon the tongue. Reduce the feed one-half or two-thirds until the diarrhea ceases.

To prevent common scours: Feed regularly; have the temperature of the milk about the same as milk freshly drawn; see that the feeding pails are clean; provide dry, light, warm quarters; give calves subject to scours a half pint of lime water in their milk each night and morning for a week.

White Scours of Calves.

The most rapidly fatal disease of calves is white scours. It occurs only in newborn calves, animals over one week old rarely getting it. More cases appear in the spring and fall than at other times. Several cases occur in rapid succession, so that it is often impossible to raise a calf in infected premises.

Germs are the cause of the scourge. They produce poisons that are very irritating and induce a persistent diarrhea. The new born calf becomes dull and weak, has sunken eyes, cold ears, tucked-up flanks, rapid breathing, and ceases to suck. The bowel discharges are profuse, fluid, yellowish-white and of offensive odor. Death occurs within a few days in about 90 per cent of the cases not given treatment.

Treatment must be given early to be effective. It consists of the injection under the skin or into a vein of a specially prepared white scours serum, which can be obtained by any qualified veterinarian direct from the maunfacturers. This is fairly successful as a preventive but is not so reliable as a curative remedy. Medicinal treatment is usually worse than useless, as it rarely prevents death and actually encourages the further spread of the disease.

To prevent white scours: Remove the cow to a clean, dry box stall when she is about the calve; wash the cow's tail and undder with a 3 per cent coal-tar solution, for it is usually during the sucking of a contaminated udder that the calf takes in the germs; disinfect the calf's navel with tincture of iodine, and the stall with the coal-tar solution; inject the white scours serum as soon as the calf is dropped, if the disease is known to exist in the stable.

COST OF KEEPING COWS

While many farmers have kept records that has been much difficulty in ascertaining the cost of keeping dairy cows and the corresponding cost of producing butterfat. The difficulties are not only in the cost of producing feeds and of maintaining shelter for the cows, but also in charging for pasture and in the labor cost of handling the products. There are so many factors entering into the production and marketing of dairy products that it requires considerable time and attention to details. There are, it is believed, very few who are able to tell what a pound of butterfat or a pound of butter costs on their farms.

But it is worth our while to know what it costs to keep cows and what they produce under such conditions as are found on the farm. If we do not know what the various cows produce and what it costs to feed them how are we to know whether or not they are profitable?

According to C. L. Peck in his book, "Profitable Farming," the average cost of producing milk is as follows:

Hay, 2 tons	$16.00
Pasture	6.00
Grain, 600 pounds	6.00
Labor cost	10.00
Cost of cow per year	$38.00

Average milk production 3000 pounds
Average butter production 150 pounds

Cost per hundred pounds milk	$1.08
Cost per pound of butter	.24

By crediting the skimmed milk this will reduce the cost of the butter to about 22 cents a pound.

It will be seen from these estimates that the cost of the feed is rather low. It must also be remembered that the records and estimates on feed were made some time ago when both labor and feeds were cheaper than now. But the relation of higher priced labor and dairy products would not be far wrong under present conditions.

The same author referred to thinks that the following would be a fair estimate under favorable conditions, with good cows:

Feed cost of the cow per year:

4 tons silage	$ 4.00
500 pounds hay	6.00
1 ton of ground feed	20.00
Pasture	6.00
1200 pounds of straw	3.00
Feed cost	$39.00
Labor cost, including butter-making	10.00
Total expense	$49.00

Under reasonable conditions the cow should produce 600 pounds of milk or 300 pounds of butter. With the estimated cost of keeping the cow this would make a hundred pounds of milk cost 81.6 cents; butter 16½ cents a pound. Giving the cow credit for the skimmed milk at 10 cents a hundred, this would reduce the cost of butter about two cents or make the cost about 14 1-3 cents.

Remember that the hay has been sold to the cow at $8 a ton; pasture at $6; grain at $20 a ton. This transaction should be considered the same as if these products were sold off the farm, hence no labor charge should be made for the production of the feed. Such items as incidentals, taxes, interest, repairs, etc., should be met in the income from calves sold and manure saved. The value of the manure from one cow is worth from $12 to $20 a year.

The last estimate does not consider the fact that feed costs more now than a few years ago. But when we consider the fact that dairy products bring better prices, the relation of cost would be about the same now as when this estimate was made. It is at least a suggestion as to how you can ascertain the cost of feeding your cows and tell whether or not they are "boarders" or profit makers. If you have any "boarders" it would be well for you and your farm that they are checked up and sold.

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LOVERS

He met her at the garden gate;
The sun was sinking low;
There she did nightly for him wait
As you who read will know.

He drew her closely to him
And carressing her he said,
"I love you dearly little one"
And fondly stroked her head.

He put his arms around her neck.
She slightly drew away,
But joy and love were in her breast
On the bright New Year's Day.

Of thoughts that came into her heart,
She did not speak one half;
For he was just a farmer boy,
And she a Jersey calf.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Do not over look the advantage of keeping a few poultry on the farm.

Plan your garden now and buy the seeds you will need for planting it.

If you do not like ice water on a cold day, how can you expect the livestock to enjoy it. If the water is to cold they will not use enough for their own good.

It is alright to do some experimenting on any farm. Do not, however, put to much dependence in novelties offered by seed men or others. They may be alright, but let your big planting be of known varieties and use only the best seed you can grow or obtain.

Many new silos will be built this year. The success of those who are using them is converting their neighbors to the fact that they should build one. We must have cheaper feed and the silo is one way to get it.

LIVESTOCK CONVENTION.

This week at Salt Lake City there are being held, The American National Livestock Association, The National Wool Growers Convention and the Utah State Sheep Men gatherings.

We plan to give our readers a general review of these meetings in our next issue. The livestock industry is now one of the most important in the nation and when the leaders of such a big industry get together something of importance is sure to take place.

MORE WHEAT FOR UTAH

Our government is asking for more wheat. The need seems to be urgent. We must not judge the condition in other parts of the world by the local supply of wheat.

Wheat can be grown on land where many other crops would fail. Every acre of land should be put to use. Each farmer should know enough about his soil to plan well what he will plant this year. Remember it is wheat, sugar and meats that the government are asking for.

PROPER SHELTER SAVES FEED

In the production of milk a cow must first consume enough feed for her own use, to keep her alive, to keep her warm, before she will produce milk. At this time of the year proper shelter decreases the fuel, feed, cost, and results in increased milk production.

The same rule will hold good with beef production. An animal must consume enough food to keep alive and warm before it will "put on flesh."

Providing proper shelter is a profitable investment.

ARE YOU KEEPING A RECORD

The profits you make during the year can only be actually obtained by keeping records. The cost of growing wheat, sugar beets or any other crop can not be obtained by guess work, you must keep records if you want to know the cost.

A book can be obtained through the County Agent for only a few cents that will help you in keeping farm records. They are so simple and yet so helpful that every farmer should secure one.

This is the time of the year to start and this year more than any other is when you should keep a record of your costs.

PUT AWAY SOME ICE

It will cost but a very little to put away some ice now for next summer use.

Ice may be packed away with mill shavings, saw dust, chaff or straw. Pack it solid with no air space. Good drainage under and around the ice house is necessary.

When the hot days of summer come again, the values of a supply of ice in every home is known best to those who have used it. Now is the time to put away a good supply of ice.

If you want a bulletin on the subject send to Washington D. C. for it.

USE MORE POTATOES

It now seems as if we are going to have a big surplus of potatoes. Transportation is such that all of the necessary foods can not be moved.

Use more potatoes in the home. This is one way to help and it will save other food by so doing. On another page we offer a few suggestions as to how potatoes can be prepared for table use.

The government men are doing all they possibly can to help the potato market. There is, however, a big surplus and just what the spring market will be when we are able to ship no one seems to know.

To help the government save food and help consume what now seems to be a big surplus we should use more potatoes.

READ THE ADVERTISEMENTS

It costs money to advertise in the Utah Farmer and no successful man is going to spend money unless he gets returns. He prepares his advertisements with that thought in mind that he will get returns. To get returns his advertisement must be news, information to the one he is trying to reach. Modern advertisements are of that kind and our readers can profitably spend the time to go through this paper and read the advertisements. If they ask you to send for a catalog or other information, do so because of the help it will be to you. The booklets and catalogs are usually prepared by experts and are well worth the asking for them.

We are just as careful about the advertisements that appear in our paper as the copy that runs in our columns for this reason you can safely deal with the people who advertise in our paper. When you buy from a dealer or send for a catalog always mention the Utah Farmer.

ORDER YOUR IMPLEMENTS NOW

A representative of one of the largest manufacturing farm machinery concerns in the United States said his company has enough orders now to keep their plants working full time for a year. There is not a great change for the better in the implement situation.

The harvest is over and the farmer knows the machinery needs of his farm. The right thing to do is make a careful survey of your needs both as to repairs, extras and new machinery and order what you will actually need.

When orders are placed the manufacturer will be better able to take care of his customers. Our government only allows them enough steel to fill orders.

Go over all your machinery and repair every tool or implement possible, order what will be necessary for next years use. If you wait until time of using it you may not be able to get it.

NEED OF BETTER SEED

So many people engaged in farming do not pay enough attention to the quality of seed they use. During the time of high prices for all kind of seeds it will be natural for them to pay even less attention to the kind of seed they sow.

Often wheat is planted that is a little dirty, not well screened and has more or less other seed mixed in it such as weeds. When seed of this kind is planted how can you expect any thing else except a low grade of grain.

Possibly that same man will be very careful about the breed and quality of his livestock, and will neglect to exercise care in the selection of his seeds.

Experiments have shown time and time again that it pays to use only the best seed, keeping varieties pure, clean and healthy.

Sow only the best kind of seed you are able to get. Right now is the time to clean and prepare it for spring planting. If you have not already secured what you will need, it is important that you do it, not waiting until spring.

WHAT WILL YOU PLANT?

Much was done last fall to prepare the land for this springs planting. The one important question that every farmer should consider and decide well—what will I plant for 1918.

There are many things to be considered in arranging your crops. The importance of wise and judicious farm practice so that the best results will be obtained, must be carefully considered.

The question of what you will plant is not only an individual and family problem this year but your planting concerns the State and the Nation.

We are at war, and food is so important that many say, food will win the war. Wheat, sweets and meats are what the nation is asking for. It is not only our privilege but a duty we owe our country to plant what is needed.

The cash returns should not be the only consideration. If the young men of our nation are willing to give their lives the least we can do is to help produce the kind of food they need. In deciding the kind of crops you will plant this year remember the nation as well as your individual needs.

WHEN WORK IS EASIER

Day after day and year after year we gain in general efficiency. Farm work next year will be easier and we can do it cheaper if we have made use of our opportunity to learn.

Nothing is gained by over-work. Those who do more than their physical strength can stand today are less able to do a normal day's work tomorrow. The safest way is to do as much as can be done without injury to one's strength and then the next day's task need not be slighted, but may be improved.

It is a duty we owe to ourselves and our families to conserve our strength as farm laborers. Nothing is gained by doing with the hands what implements or machines can do cheaper and better. Human strength is dearer than animal power or machine power.

The skillful farm hand soon learns how to save labor by taking advantage of his work. Skill and a better way can be learned by any one who tries and is willing to profit by mistakes. The man that does general farm work no better next year than he did this year has not learned and is not turning his experience into account. Surely we can do work better the second time than we did the first or accomplish more doing the same work this year than five years ago.

HINTS ON ECONOMICAL MEAT PRODUCTION

(Continued from page 3)

to be able to get animal to big weights at young ages. There is no such thing as a scrub becoming a baby beef for the scrub has not the power to lay on flesh in a hurry and so must be kept longer. The experience of the last few years has convinced most everyone of the value of the pure bred and so this does not need much arguing. A number of states including Utah now have laws prohibiting the turning upon the public ranges of any bull except a pure bred of beef type. This law shows a great step forward in the appreciation of good livestock. In this connection it might be well to remind the breeders, that in war times breed squables, and trouble sover fancy point, fads and fancy pedigrees, should be put in the background and made to take second place to the main job in hand; that of producing meat. In the selection of your stock therefore, pay a little more attention to the thickfleshed, husky, early maturing kind and let the slow feeding slow maturing ones go, no matter how fancy the pedigrees. We are in this business to produce pounds of meat and paid on that basis, not according to breed fads or fancy blood lines. Good sires were never needed more than at a time when we are trying to make one balde of grass do more than ever before.

The range problem is being worked out by the U. S. Forest Service and I feel that the problem is in good hands. Methods of improving the range by rotation and defered grazing, etc., will do much to produce meat more economically. The so called "Bedding out" system of running sheep has been found to produce more meat from a given area of range and other improved methods can be expected.

In connection with improved ranges is the winter feeding problem. Careful feeding should be practiced so as to keep stock always on the increase for this has been found to be the cheapest feeding practice. Allowing stock to loose weight during the winter is an expensive method and should be avoided. It is easy for an animal to lose weight but mighty hard to get the weight back on the animal. It would pay on most of our ranges to provide feed even if it were needed only one year out of three. Silos are going to do much to help solve this feed problem and should be carefully investigated by range men.

It is some of the methods of management that are most important at this time. It has been found that young animals make cheaper gains than the older ones and so one method of improving our management will be to turn off animals at younger ages. Growth is faster and gains cheaper and more economical while animals are young. Dozens of experiments and practical tests have shown that all of our meat producing animals soon reach an age, when even under favorable conditions the cost of gains is higher than the selling price.

As all know the 4 and 5 year old steer has gone from our farms and ranges along with the yearling porker and the old wether. Soon more changes will come and the 3 year old steer and perhaps the 2 year old will go the way of the 4 year old and be seen no more. When as experiments at New Mexico show a ton of hay fed to calves will produce near 250 pounds of meat and when fed to 3 year old steers will produce just 100 pounds of meat it is time for us to think of this problem. Is there a place for an old steer on your range when he will eat more grass and make fewer pounds of meat than a young steer? The agitation against the eating of lamb last year was caused by people not understanding this point for had they known the truth in the matter the eating of lamb would have been encouraged, due to the fact that it is the most economical meat we can get from the sheep. A 70 to 75 pound fat lamb from the range or a 80 or 90 pound lamb from the feed lot, has made the most economical use of the feed given and if held longer this is done at a waste of labor and feed. As far as possible then animals that will reach big weights at young ages should be maintained on ranges and farms. Each month as animals grow older, the amount of feed needed to make a pound of meat increases so we should push them a little faster and get them to market before they "eat their heads off."

The reducing of the marketing age of your stock will allow the running of more females on the same range or farm. A cow will eat but little more than a three year old steer, but during the summer months the steer gains say 200 pounds worth about $15.00 while the old cow brings in a calf worth from $30.00 to $40.00. This side of the management problem should be carefully looked after by the stock men. The following problem based on some of the above points suggest a scheme of producing more meat on a given area of range.

We will take as an example a range that will support near 360 head of cattle. A 70% calf crop has been figured for this is about the average of the range country.

Range With Capacity of 360 Head.

Marketing cattle as
3 year olds.

119 cows.
81 yearlings.
79 two-year olds.
77 three-year olds.
77 head to market each year weighing 1,140 lbs. or 87,780 lbs. beef.
77 head at 70.00 or $5,390.00.

2 years olds.

151 cows.
103 yearlings.
101 two year olds.
101 head to market weighing 940 lbs. or 94,940 lbs. beef.
101 head at $60.00 or $6,060.00.

Yearlings.

210 cows.
145 yearlings.
145 head to market weight 700 lbs. or 101,500 lbs. of beef.
145 head at $47.00 or $6,815.00.

Calves.

360 cows.
252 calves.
251 head to market weighting 400 lbs. or 100,000 lbs. beef.
252 head at $33.00 or $8,316.00.

From this you see that it will pay to keep more breeding cows and sell stock at younger ages.

Another factor might be mentioned and that is that with the disappearance of the older steers coupled with more attention to winter care the calf crop could be materially increased. An increase of 5% in the calf crop over our western section would mean millions of pounds of meat and millions of dollars to the stock grower.

To produce meat more economically the following points should be remembered. Use only good stock bred along meat production lines. Take care of range and feed stock liberally when needed. Market stock at younger ages and keep more females. Take more care to see that you get a large percentage of increase.

The only method of making the great amount of grass, weeds and brouse into human food is through livestock. Any methods you can practice to increase the amount of human food is your contribution to the emergency and so is your patriotic duty. We must bring the war to a successful conclusion and a liberal meat supply will be a big fatcor in relieving a grave situation.

MR. HOOVER REPLIES

It would have been little short of the marvelous had Mr. Hoover, the food administrator, escaped criticism from those whose private interests have been unfavorably affected by his policy. High as he stands in the esteem of the people of the United States, the fact that representatives of any of the food trusts, combines, or monopolies had found it in their hearts to praise his methods would have created widespread surprise and, perhaps, caused no little suspicion. The attack upon him by Claus Spreckles, president of the Federal Refining Company, was nothing more than the public expected, and its only effect was to establish Mr. Hoover still more firmly in the confidence of the people.

Mr. Spreckels has complained and charged before a Senate committee of investigation, of which Senator Reed is chairman, that Mr. Hoover mismanaged the sugar situation, and Mr. Hoover has thus far been denied an opportunity of replying to this complaint and allegation before the committee. Consumers of sugar, however, who have been able to purchase the commodity, although in small quantities only, at a fairly reasonable standard price thus far during the period of the shortage, when in ordinary circumstances price would have been run up to the point of extortion by those in control of the market, have not needed the Hoover statement that has just come through the White House to convince them that there has neither been mismanagemnt on the part of the Food Administration.

But the facts presented in this statement are, nevertheless, of interest and value, and they have the merit, also, of being simple and clear. Prior to the outbreak of the war the Allies produced much of the sugar they consumed, either at home or in their colonies, and made up by imports from Germany any deficit they found. In those times they took only 300,000 tons annually from the Western Hemisphre. Since its Food Administration was created, in August last, the United States has exported to

(Continued on page 14)

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SERVICE SCHOOL ANNOUNCEMENT

For the benefit of those who are contemplating the purchase of a tractor, either now or in the future, and for the benefit of the owners of Avery Tractors, we are going to hold a Service school to educate operators in the care and operation of Avery Tractors. This school will be held in Salt Lake City beginning February 5, 1918, and will continue during the balance of that week. Expert tractor operators and Service engineers will be in attendance and will give courses in the care and adjustments of magnetos, carburetors and all parts pertaining to tractors.

This free course will be invaluable to all parties in the Intermountain district who are interested in tractors, and we extend an invitation to all seeking such inforamtion to attend.

There will be no charge whatever, and the only requirement is that you enroll as soon as possible, or arrange to send one of your employees. Address or call on.

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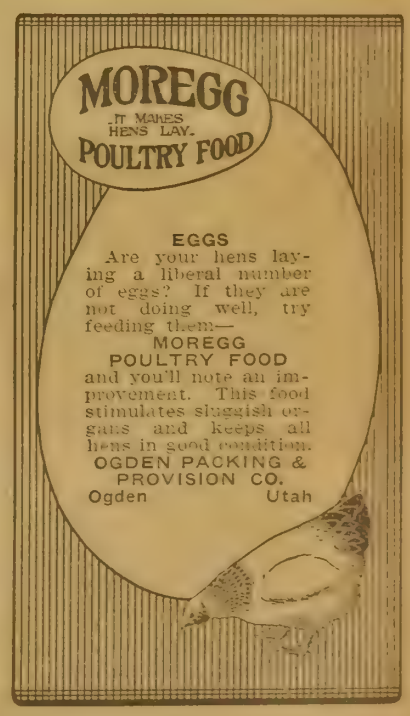

HOME

START THE DAY RIGHT WITH A GOOD BREAKFAST

FRUIT CEREAL MILK
These make a meal—
NOURISHING EASY TO COOK
GOOD CHEAP
of foods the Government asks us to eat.

Use Fruit.

Fruit helps to keep your body in good health and to prevent constipation.

Use fresh fruit when possible.

Use prunes, dried apples, dried apricots. Soak them in water over night and cook them long enough to make them tender.

Use dates or raisins. These are good added to the cereal ten minutes before taking it from the stove. Then you will not need sugar.

Use ripe bananas with dark skins. Bananas with greenish-yellow skins are hard to digest unless cooked.

Use Cereals

Corn-meal mush, oatmeal, rice, hominy (grits).

These are much cheaper than the "ready-to-eat" breakfast foods. A "ready-to-eat" breakfast food may cost 15 cents for a big package, but if the package contains only one-quarter pound—60 cents a pound for cereal! This is eight or ten times as expensive as corn meal at 6 or 7 cents a pound. Look for the weights printed on the package and get the most for your money.

Corn-meal mush and oatmeal are good only when well cooked. Many people use too little salt and don't cook them long enough.

To cook corn-meal mush for five people use 1½ cups corn meal, 2 teaspoons salt (level), 5 or 6 cups water. Bring salted water to a boil. Stir in the corn meal slowly. Don't let it lump. Cook it at least 30 minutes. It is better when cooked for three hours, or overnight. Use a double boiler on the back of the stove, or a fireless cooker.

For oatmeal use 2½ cups rolled oats, 2½ teaspoons salt, 5 or 6 cups water. Bring the water to a boil. Stir the rolled oats slowly into the boiling water and cook one hour, or overnight.

Eat the cereal with milk or sirup or butter or butter substitutes. You don't need bread besides.

A large amount of corn meal or oatmeal may be cooked at one time. The unused part placed in a greased bowl may be kept for a few days in a cool place. Do you know how good sliced and fried oatmeal is?

Instead of breakfast food you can take bread—preferably one of the war breads. Corn bread and milk is delicious.

Use Milk

Milk is an excellent food. A quart of whole milk gives as much nourishment as one pound of lean meat.

Children especially need it to make them grow strong and keep well. It is good for grown people, too. Give each child at least a glass for breakfast. Drink it hot or cold, or use it on the cereal, or make it into cocoa. Even at a high price milk is a cheap food for children.

RAISED CAKE

One cup sponge, ½ cup melted butter, 2-3 cup sour milk, 1 teaspoonful soda, 1 cup raisins, 1 egg, flour to make a loaf.

Dissolve the soda in the sour milk, and add it with the melted butter to the sponge. Put in the raisins and the lightly beaten egg and stir in enough flour so that the dough will be stiff enough to make a loaf, handling it lightly. Bake in a moderate oven.

To use left-over ham. Chop lean and fat meat together until about the size of peas. Then add some tart, pitted cherries and serve in a dish lined with lettuce leaves, or with a border of cabbage sliced thin. Add any kind of dressing that the family likes.

Plain cold slaw may be dressed up a little with caraway seeds and slices of hard-boiled eggs. Slice the cabbage on a cutter and season with salt, pepper, sugar and a little vinegar. Sprinkle a few caraway seeds through the cabbage and garnish with slices of egg. It is attractive served in a dish lined with lettuce leaves. Beets are good served in the same way after they have been cooked.

USE POP CORN—THREE WAYS

There is one good American food of which we have an abundance and we can use as much of it as we like—corn. Use all kinds and in many ways. Pop corn is one of the kinds everyone likes. It is a good food just simply popped, and can also be made into such a wholesome, inexpensive sweet that it should be widely used. Here is the way to pop it and several ways to use it.

Shell the corn if it is on the cob and pop the dried corn in a covered iron frying-pan or a regular popper, shaking vigorously. If a wire popper is used, do not pop the corn directly over the flame or it will scorch. Shake it quite high over the flames, or better over coals or on the top of the stove. Take just enough corn to cover the bottom of the popper. A cup of pop corn makes about three quarts when popped.

Pop corn is good, of course, seasoned with salt. A common way of serving is to mix with a very little melted butter and then sprinkle with salt. But have you ever tried it as a breakfast food eaten with milk or cream? It makes a good cereal.

To make a sweet of pop corn boil together 1 cup of corn sirup and 1 tablespoon of vinegar until a few drops harden in water and pour it over the freshly popped corn while it is hot. As soon as it is cool enough to handle, grease the hands and form into balls. This amount of sirup covers 3 quarts of pop corn.

Chocolate pop corn is delicious. Cook 1 cup of corn sirup for five minutes. Add 2 ounces of chocolate (two squares), and stir until melted. Cook slowly until a soft ball is formed in water. Beat until thick. Have the popped corn in a greased dish. Pour the sirup over it and form into balls when cool enough to handle. This amount covers 1½ quarts of pop corn.

Farmers' Bulletin 553 tells how to grow pop corn. Why not have a few rows of pop corn in your garden next spring?

TO REMOVE BRUISES FROM FURNITURE

Wet the bruised spot in warm water. Soak a piece of brown paper of several thicknesses in warm water, and lay over the place. Then apply a warm flatiron until moisture is gone. Repeat the process if needful, and the bruise will disappear.

PARIS CANDY SHOPS CLOSED

Paris despatches of January 2 state that as a part of a drastic program for further conserving sugar and other supplies in France, the Minister of Provisions has decreed that all confectioners' and pastry cooks' shops are to be closed and restrictions are to be placed on restaurants. The measures will be put into effect as soon as the Senate passes the bill empowering the minister to enforce his orders by inflicting penalties for violation. The bill has already passed the Chamber of Deputies.

TOO MUCH SALT

When cooking if too much salt is used, place a wet cloth over the top of the vessel and the steam will force the salt into the wet cloth.

SASH CURTAIN HINT

When hanging sash curtains—and can't secure the rods—try taking a piece of domestic tape desired length and two inches wide, fold it three times to make a tape. Stitch it on the edge and work a button hole in each end. Drive a shingle nail in the side of the window casing and slip one end of the tape over it. Put a nail through the other hole and stretch taut and nail to the other casing. When the curtains need laundering sew the ends of the tape together and send to the wash in the curtain.—G.

TO FROST A BATHROOM WINDOW

Make a very strong solution of Epsom salts and vinegar. Apply it with a brush, and afterward go over it with some white varnish.

YOUR FAVORITE JELLIES OFTEN FAIL TO JELL

When this happens, stand the mold in a basin of water containing a handful of salt and soda. A mild freezing mixture is the result. Even on the hottest days your jelly will be firm and cool quickly.

SMOOTH ICING

In making chocolate icing if cocoa is used instead of the chocolate in cakes, the icing will be smoother and of a much better flavor. Use two tablespoonfuls to each cup of sugar.

HAM AND ——

is rarely served in the trenches but the boys must have bacon, lard and sausage. Let's grow our share. We will be paid with both dollars and victory.

SIZE AND ANCIENT ARMIES

Ancient Thebes, it is said, could send 10,000 fighting men out of each of its hundred gates.

Ninus, the Assyrian king in the 22nd century B. C. led against the Bactrians 1,700,000 soldiers on foot and 200,000 mounted.

The old historians credit Xerxes with land and sea forces counting up to 2,641,000 with enough attaches, hang-on women, sutlers, etc., to make a host of more than 5,000,000.

Artaxerxes had at one time before the battle of Cunaxa an army nearly a million and a quarter strong.

Darius of Persia brought more than a million soldiers to Arabia.

Tamerlane is said to have met Bajazet's 1,400,000 with a force of 1,600,000.

Teran, king of Ethiopia, had a million soldiers to call to his standards.

Compared with the extended battle line of today in Europe the array of forces at ancient Canna was but a skirmish formation.

There were 86,000 Romans and allies against 50,000 Cartheginians.

Hannibal is reported as having destroyed 300,000 men during his campaign in Italy. Just before his time that country could send a million men to the field.—N. Y. World.

TO REMOVE PAINT OR VARNISH FROM GLASS

Paint or varnish, on windows, that has dried and will not rub off, can easily be removed by washing well with wood alcohol. Also, it will remove paint from wood work.—J. C. R.

While we are talking about substitutions, let's replace the prairie dogs and ground squirrels with livestock.

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POTATO DINNER DISHES

Some Suggestions for Utilizing a Food That Is Now Both Cheap and Plentiful.

Are you eating your share of the country's bumper potato crop? Now that the tubers are once more plentiful and cheap they may well be given a prominent place on the dinner table.

The U. S. Department of Agriculture makes the following suggestions in regard to the use of potatoes at dinner:

Potatoes at Dinner.

Potatoes may be freely used at dinner, the variety which we all like being secured by varying the ways in which the potatoes are served. Then, too, one should not overlook the fact that, since both of them are foods which are very palatable sources of starch, by eating more potatoes one can diminish the bread eaten and thus help to save wheat, which is such an important matter at the present time.

Many think that potatoes are at their best when prepared in the simplest ways—that is, baked or boiled—but even so some variety is possible, for they may be baked in their jackets, or with the skins rubbed or scraped off, or pared and baked in the pan with meat, the juice they absorb improving their flavor. The skins may be easily rubbed off new potatoes, and almost as easily from old potatoes, provided they are first dropped for 10 minutes in boiling water.

Potatoes may be boiled or steamed in the jackets, peeled entirely, or with only a ring peeled around the center. The boiled potatoes may be served as they are, or mashed or diced. Such simple changes as these help to give variety.

Minted Potatoes.

Boiled potatoes are at their best when mealy, so, after boiling, the water should be poured off, a little salt sprinkled over the potatoes, and the kettle not quite covered, and placed on the back of the stove, so that they may "dry out." If you wish a novelty, in boiling new potatoes add a few mint leaves to the water in which they are cooked. In baking potatoes one should always remember that, to be at their best, they should be served as soon as they are done. If one can not serve them at once, the skin on one side should be slashed in order to allow the steam to escape, and the potatoes kept hot.

Fried potatoes are also favorites and the ways in which they can be either fried in deep fat or pan fried are numerous and are well known. Fried potatoes seasoned with onion are a common dinner dish, and one should remember that green peppers can be used with the onions or in place of them.

Potatoes with Sauce or Cheese

Potatoes baked with white sauce and cheese, scalloped potatoes, and similar dishes can be used in place of macaroni and spaghetti, and potato dumplings can be used in place of wheat dumplings. Cooked in combination with other foods, in a meat pie, for instance, potatoes may be depended upon as the principal dinner dish. There are also a number of dishes, such as potato pudding, which can be used at dinner in place of sweets made of wheat flour.

Tested Potato Recipes.

Of the many possible recipes, the following are suggested as more or less typical:

Potato Soup.

3 potatoes, medium size, 4 cups skim milk, 1 small onion, 4 tablespoonfuls butter or other fat, 2 tablespoons flour, 1½ teaspoons salt, ¼ teaspoon celery salt, or 1 stalk of celery cut in inch pieces, ⅛ teaspoon chopped parsley. A little cayenne pepper or paprika.

Boil the potatoes and when soft rub them through a sieve. Slice the onion and scald this and the celery with the milk. Take out the onion and celery and add the milk slowly to the potatoes. Melt 2 tablespoons butter or fat, into which mix the dry ingredients, and stir into the boiling soup. Boil one minute; strain, add the remainder of the butter, or fat, and sprinkle with the parsley when ready to serve. The parsley improves the looks and adds a little to the flavor, but may be omitted if this is more convenient.

Stuffed Potatoes.

A nice way to secure variety is to cut a slice from the top of each baked potato and scrape out the inside. Mash, season with salt, pepper, chopped parsley or chopped celery leaf, or onion juice (if liked), and butter, or savory fat, and heat in a little hot milk; add 2 well-beaten whites of eggs. Refill the skins, sprinkle with grated cheese or bread crumbs, and bake in a hot oven about 6 minutes.

Creamed Potatoes.

There are several different ways in which creamed potatoes may be prepared. (1) Freshly boiled or cold boiled potatoes may be cut into small cubes and served heated in cream sauce. (2) Wash, pare, and cut potatoes into small cubes. Put into frying pan with a few slices of onion cut up very fine, and parboil 10 minutes. Pour off water. Add one tablespoon butter, drippings, or other fat, seasoning of salt and pepper, and milk enough to cover. Cook for 15 or 20 minutes, or until the potatoes are well done and the sauce thick and creamy. It is necessary to stir the potatoes frequently to prevent sticking. The starch in the potatoes thickens the sauce. Creamed potatoes are particularly good to serve with fish or chicken.

Hashed Brown Potatoes.

Cut cold boiled potatoes into small pieces (2 cupfuls), season with salt and pepper, cook three minutes in one-third cup bacon drippings, stirring constantly. Let stand a few seconds to brown underneath; fold like an omelet, and serve on a hot platter.

These are very good with broiled or fried fish or meat.

Meat and Potato Pie with Potato Crust

Boil meat, cut into small pieces. Mix with potatoes separately boiled and cut up, and put into a baking dish. Make a crust by mixing smoothly mashed potatoes to which a tablespoonful of shortening has been added, with enough flour and water to make them roll out easily. A pie made of a pound of meat will require five or six small boiled potatoes, a cupful of mashed potatoes, and 8 or 10 tablespoonfuls of flour, and should be baked about 20 minutes in a hot oven. Salt, pepper, and other seasoning, as onion and carrot, may be added to taste. A teaspoonful of baking powder makes the crust lighter.

Potato Pudding.

½ pound mashed potatoes (5 small potatoes), 4 tablespoonfuls butter or good cooking fat, 2 eggs, ½ cup milk, ¼ teaspoonful salt, ½ lemon (juice and rind), 1 tablespoonful sugar, ½ cup raisins or raisins and nut meats.

Boil potatoes, mash, and add butter, eggs, milk, lemon juice, grated peel, and sugar. Beat all the ingredients together and bake in a buttered dish for three-quarters of an hour or longer.

BREAKFAST MARMALADES
(Sugarless)

As a butter saver, Americans might adopt the English custom of serving marmalade with toast or hot bread for breakfast. Let the fruits supply the sugar to be used in making these marmalades. Their virtue lies in the tartness of the fruit and the fact that they contain only what nature put in the fruits.

Apple-Raisin Marmalades.

To one cup ground seeded raisins add one cup chopped apples and one cup water. Cook until thickened. A little orange and lemon juice and grated rind may be added if liked.

Cooked dried fruit, as apricots, pears, peaches, or prunes may be used in combination with the ground raisins in any proportion desired, and three fruits combined as apricots, apples and raisins.

Catsup added to the marmalades makes a simple fruit relish to serve with cold meat.

Date-Prune Jam.

Wash one pound prunes, soak over night; cook in same water and remove stones. Remove stones from one pound dates and cut in small pieces. Cook with prunes until mixture is thick. Add small amount of lemon juice.

Prune-Apricot Butter.

Wash one pound prunes and one-half pound apricots; soak over night; stew until very soft in same water; rub through colander; return to sauce pan and cook slowly until thick like apple butter, being careful that it does not burn. Do not add sugar.

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HERE'S A GOOD RECIPE

Chocolate rice pudding: Scald two cupfuls of milk, and add one-fourth cupful of rice and one-third teaspoonful of salt, and cook until rice is soft; then add one tablespoonful of butter, one-third cupful of sugar, one square melted unsweetened chocolate, ½ half teaspoonful vanilla, one-half cupful of raisins, seeded and cut in pieces. Cut and fold in the whites of two eggs, beaten until stiff, and one-half cupful of heavy cream, beaten until stiff. Turn into a buttered baking dish and bake in a moderate oven twenty minutes.—Woman's Home Companion.

SUBSTITUTE FOR HOT-WATER BAG

Get some fine sand, and dry it well. Heat it on the stove, and put it in a flannel bag about eight inches square. Sew the opening, and cover with cloth. This will prevent the sand from sifting out, and enable you to heat the bag quickly by placing it in the oven of the stove. The sand holds the heat a long time, and the bag can be tucked to the back without hurting the invalid.

There are two values in every purchase: What it saves and what it costs.—Exchange.

POULTRY

GRADING EGGS.

Where eggs are handled in large quantities there are certain grades by which they are sorted and either retained for market purposes or rejected as useless. A brief description of these grades and the characteristics by which they are detected is given below.

Fresh egg.—An egg to be accepted as a first, or fresh egg, must be newly laid, clean, of normal size, showing a very small air cell, and must have a strong, smooth shell, of even color and free from cracks. With the exception of the air cell, which is only visible through the aid of the candle, these are the points by which eggs are graded in the early spring, at which time they are quite uniform in quality, thereby making candling unnecessary.

Checks.—This term applies to eggs which are cracked but not leaking.

Leakers.—As indicated by the name, this term applies to eggs which have lost a part of their contents.

Seconds.—The term "seconds" applies to eggs which have deteriorated to a sufficient extent as to be rejected as firsts. They are, however, of a high enough quality to be used for human consumption. The several classes of eggs which go to make up this grade may be defined as follows:

Heated egg: One in which the embryo has proceeded to a point corresponding to about eighteen to twenty four hours of normal incubation. In the infertile egg this condition can be recognized by the increased color of the yolk; when held before the candle it will appear heavy and slightly darker than in the fertile egg.

Shrunken egg: This class of seconds can be easily distinguished by the size of the air cell. It may occupy from one-fifth to one-third of the space inside the shell. The holding of eggs for a sufficient length of time to allow a portion of the contents to evaporate is the main cause of this condition.

Small egg: Any egg that will detract from the appearance of normal eggs on account of its small size will come under this class, although it may be a new-laid egg.

Dirty egg: Fresh eggs which have been soiled with earth, droppings, or egg contents, or badly stained by coming in contact with wet straw, hay, etc., are classed as seconds.

Watery egg: Those in which the inner membrane of the air cell is ruptured, allowing the air to escape into the contents of the egg, and thereby giving a watery or frothy appearance.

Presence of foreign matter in eggs. The small dark streak across the yolk is a clot of blood. This condition is found in many fresh-laid eggs. Often eggs are laid which show small clots about the size of a pea. These are sometimes termed "liver" or "meat" spots.

Badly misshapen eggs: Eggs which are extremely long or very flat, or in which part of the shell's surface is raised in the form of a ring; in other instances a number of hard wart-like growths appear on the outside of the shell.

Spots.—Eggs in which bacteria or mold growth has developed locally and caused the formation of a lumpy adhesion on the inside of the shell. There are three well-recognized classes of mold spots, namely, white, brown, and black. In cases where an infertile egg has been subjected to natural heat for a sufficient period of time, the yolk will often settle and become fixed to the membrane. This condition might be termed a "plain spot."

Blood rings.—Eggs in which the embryo has developed to a sufficient extent so that it is quickly recognized when held before the candle. It has been found that it requires between twenty-four and thirty-six hours of incubation under a sitting hen to produce this condition.

Rots.—Eggs which are absolutely unfit for food. The different classes of rots may be defined as follows:

Black rot: This is the easiest class of rot to recognize and consequently the best known. When the egg is held before the candle, the contents have a blackish appearance, and in most cases the air cell is very prominent. The formation of hydrogen-sulphid gas in the egg causes the content sto blacken and gives rise to the characteristic rotten egg smell, and sometimes causes the egg to explode.

White rot: These eggs have a characteristic sour smell. The contents become watery, the yolk and white mixed, and the whole egg offensive to both the sight and the smell. It is also known as the "mixed rot."

Spot rot: In this case the foreign growth has not contaminated the entire egg, but has remained near the point of entrance. Such eggs are readily picked out with the candle, and when broken show small lumps around the inside of the shell.

THE START—MAKE IT WITH PUREBREDS

Surplus Stock and Eggs Then Will Bring Better Prices—General-Purpose Breeds for Both Meat and Eggs.

You want to start a backyard hennery or improve the one you have—you have gone that far in your determination to help the meat and egg supply—how shall you begin? What kind of fowls shall you keep, how many and how shall you procure them? These are your next considerations. Here are the suggestions of specialists of the United States Department of Agriculture on these points. They will help the beginner especially, but should also help the town householder to make his flock more serviceable. First, the kind of breed.

This will depend somewhat on whether you desire eggs, meat, or both eggs and meat. Householders usually desire not only eggs for the table and for cooking, but also an occasional chicken to eat. If this is your desire one of the general-purpose breeds, such as Plymouth Rock, Wyandotte, Rhode Island Red or Orpington, is preferable to the smaller egg breeds, such as the Leghorns. Not only do the mature fowls of these breeds, because of their larger size, make better table fowls than the Leghorns, but the young chickens for the same reason make better friers and roasters. Chickens of the egg breeds are suitable only for smaller broilers. Hens of the general purpose breeds also are more "broody," making good sitters and mothers, which is a decided advantage when it is desired to hatch and raise chickens. Hens of the egg breeds seldom become broody and are in any event rather unreliable sitters and mothers.

Lighter Breeds for Eggs.

If, however, the desire for eggs outweighs that for an occasional table fowl the lighter egg breeds undoubtedly will be more practicable because they lay as many eggs and eat less feed, with the result that they produce the egg more cheaply. It is by all means advisable to keep some pure breed of variety. If this is done sales at a profitable figure often can be made of breeding stock which it is intended to market or of eggs for hatching.

The size of the flock which can be most efficiently kept will depend, first of all, upon the space available and, secondly, upon the amount of table scraps or waste which is available for feed. It is a mistake to try to overstock the available space. Better results will be obtained from a few hens in a small yard than from a larger number. The backyard poultry flock rarely will consist of more than 20 to 25 hens and in many cases of not more than 8 or 10, or occasionally of only 3 or 4. For a flock of 20 to 25 hens a space of not less than 25 feet by 30 feet should be available for a yard. If less space is available the size of the flock should be reduced, allowing, on the average, 20 to 30 square feet for each fowl. A few hens sometimes may be kept successfull with a smaller yard allowance the this, but if the space is available

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yard of the size indicated should be used.

Ordinarily, the best way for the city poultry keeper to start a flock is to buy pullets in the fall when they are cheaper. Unless there is a scarcity in the community now, however, there is likely to be little trouble in securing a few hens at this time, although prices probably will be higher. Pullets obtained at this time will give better returns if eggs are desired, while if the intention is to raise chicks older laying hens may be used, or day-old chicks can be purchased and a start made in that way.

How to Buy Hens

When pullets or hens are to be purchased it is well, if possible, to go to some farmer or poultryman who is known to the prospective buyer. If there is no opportunity to go into the country for pullets, they often can be selected from among the live poultry shipped into the city to be marketed. The advice of someone who knows poultry should be sought in making such a purchase to make sure that pullets or young hens are obtained and that the stock is healthy. Often the local poultry associations are glad to help the prospective poultry keeper to get stock by putting him in communication with some of its members having stock for sale. Sometimes the local board of trade or chamber of commerce is glad to help in bringing together the prospective purchaser and the poultry raiser.

In a later article suggestions as to how an inexpensive poultry house may be built or converted from an unused shed will be given.

———o———

Imposing upon the trusting credulity of the poor barnyard hen, the Poultry Department of the Utah Agricultural College has inaugurated a series of experiments in egg production aimed to see how far egg production can be increased during the winter months by artificial lighting. The plan of the experiment is as follows: Four chicken houses, two of the shed roof type and two of the semi-monitor style were selected and one of each type wired for electric lights. Using the two unwired houses as checkhouses, pullets, and one, two, three, four, and five year hens were placed in each coop. The following set of instructions issued by Professor Alder ,who outlined the experiment, to those immediately in charge, shows how the work is conducted.

Turn lights on at 5:30 A. M. and scatter a little grain on the straw to coax hens off the perches.

8:00 A. M. Turn lights off, test, and water.

10:00 A. M. Feed alfalfa leaves that have soaked over night in warm water. Give all they will eat.

1:30 P. M. Feed sprouted oats.

3:00 P. M. Feed grain in litter all hens will eat for the evening with a little left over for morning.

4:30 P. M. Feed grain in litter all hens will eat for the evening with a little left over for morning.

4:30 P. M. Replenish alfalfa supply and turn on lights.

8:00 P. M. Turn lights off, gradually dimming light until all hens are on perch before turning them entirely off.

Keep hoppers full of dry mash all the time. Be careful about waste. Keep a careful record of the amount of the feed given in each pen.

Feed unlighted pens the same feed and at the same time as nearly as possible.

Already good results are appearing, says Professor Alder. While it is too early to attempt any statement of results, an appreciable increase in the number of eggs laid has been noticed. The lengthening of the day has had as much if not more effect on the old hens than on the pullets. In commenting on the experiment, Professor Alder said, "Several problems present themselves in the matter of a lengthening of the day by artificial lighting. Enough additional eggs must be produced to pay for the electricity used in lighting the coops and for the increase in feed which will undoubtedly occur. Just how much more feed will be eaten will be determined by keeping a careful record of all materials fed. We will also determine whether or not the speeding up of egg production will decrease the laying lift of the hen and her vitality as a breeder. None of our breeding stock is being used in these experiments, but we will hatch from these chickens in order to determine whether or not their value as breeders has been diminished by the experiment. The resulting chicks will also be closely watched."

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LIVE STOCK

A WORD ABOUT THE BROOD SOW

By Russel Dunn, Iowa Experiment Station.

The successful raising of a crop of pigs requires that much forethought and attention be devoted to various phases of brood sow management.

Selection and Breeding

The brood sow, if a gilt, should be as growthy as possible, medium to good in condition, but not fat. It is well that the gilt make a reasonable gain during the breeding season. If the sow is mature and has been carried along on good pasture during the summer, with only enough grain to keep her from losing excessively in weight, an increased grain ration and the addition of a fifth to a third of a pound of meat meal tankage will be of benefit at breeding time. The sow which is gaining is more liable to conceive with less services and produce a larger litter than a sow which is barely holding her own or losing weight.

Winter Care

Dry, well-bedded sleeping quarters are in order. Exercise is to be encouraged. Lice must be controlled. Water and feed in sufficient amounts to keep the sow gaining during the entire pregnancy period must be provided.

The sleeping quarters must be dry, well bedded and as free from draughts as possible.

The sows can be made to exercise by feeding some distance from the sleeping quarters or by allowing them to work manure piles. Care should be taken that they do not sleep there, especially if they are allowed to work over the manure from horse stables.

Lice are easily managed through the crude oil method.

The Best Feeds.

The combination of corn and tankage probably comes as near the ideal brood sow ration, from the standpoint of the health and strength of the sow and the new-born litter, as any. Corn should make up the greatest part of the grain ration, as it is one of the best and cheapest feeds when results are considered. The young sow needs a greater proportionate amount of protein supplement than does the mature sow, but from 0.2 to 0.4 pound of meat meal tankage should cover the range.

Buttermilk or skim milk most efficiently takes the place of tanage, giving splendid results if three pounds to eight pounds are allowed.

Ground alfalfa, alfalfa leaves, or a good grade of alfalfa hay can be used to a good advantage along with corn in place of meat meal tankage or skim milk. It is essential, however, that the pregnant sow eat from one to one and one-half pounds of the alfalfa per day if good strong litters are wanted. In case the alfalfa is not eaten from the racks to this extent, some substitutes should be provided, or else methods of alfalfa feeding adopted to insure this minimum consumption of hay.

Such feeds as wheat middlings, linseed oilmeal, may sometimes be used to advantage, but as a rule the other feeds would be preferred.

Treat the well selected brood sow kindly and intelligently, and she will respond in full measure with a fine litter of pigs at weaning time.

WINTER CARE OF BROOD SOWS

The sows that will farrow in March and up to the middle of April have already been bred. If these sows produce good strong, vigorous litters and get these pigs through successfully to weaning time they must be properly cared for from now until the day of farrowing. One of the biggest hindrances to the sows' farrowing good strong, vigorous litters is lack of exercise. During the cold and snowy weather hogs like to lie around the sleeping quarters and be comfortable. That, however, is just what they should not do all the time.

The proper exercise for a brood sow is that which she will take voluntarily and not through force. They should get their corn ration by hustling for it in the stalk fields and not by getting it fed around the sleeping quarters on feeding floors or in troughs. Feed them ear corn during the winter months and scatter it out in the stalk fields. The manure spreader is a good implement to use in scattering this corn. Don't be afraid it will be wasted, for it won't. You can readily regulate the amount fed so that it will be picked up clean, and you will find next spring that there is not a bit of the corn lying around to go to waste.

Protein feeds in the form of shorts, tankage, oil meal, or alfalfa hay should be supplied. Self-feeders can be used for these feeds, and it is quite successful to grind the alfalfa hay. Sows will eat a larger percentage of alfalfa hay fed in the ground form than when fed in racks unground. This alfalfa is generally cheaper on the corn-belt farms than any of the other protein feeds and is a good balance to the corn ration.

By following a few of these simple methods the sows will be brought to farrowing time capable of producing good strong pigs. Every hog grower knows that if he is going to have pigs that do their best from the start they must necessarily be strong and vigorous at farrowing time. The proper care of the brood sow is not difficult and should be carefully looked after by every hog grower.

MAY PIGS

Sows bred at this time of the year and for the next thirty days will farrow in May. In many parts this is an ideal time for market hogs to be farrowed. Generally the grass is good, there is plenty of sunshine in warm weather and the pigs get an excellent start, something very essential to a good outcome. By the time the pig is weaned new grains that have been raised this year will have been harvested. Barley, rye and oats all make splendid feed for growing pigs. They can be carried along with these feeds, plus pasture, until the new crop of corn becomes available, and in looking at the matter from many viewpoints May pigs are among the most profitable that can be raised. Every hog grower knows that hogs that have been properly grown during the summer time put on flesh rapidly when they have access to new corn.

In this connection it is advised that hog growers who can get the seed plant a small patch of ninety-day corn. This is good feed in August, and if the field is large enough will carry the pigs along until the main crop is ready for feeding.

If the hog grower has not permanent pastures of alfalfa, clover or other grasses he can make temporary pasture by the heavy seeding of rye, oats, barley or wheat. These various grains can be sown in rich soils, very often in the hog lots, at the rate of anywhere from two or three to five or six bushels per acre. Dwarf Essex rape can be grown quite successfully and makes mighty good hog pasture. If you have not increased your number of hogs this year why not try breeding a few sows for May farrowing?

ABOUT THE FARM

Dr. W. E. Carroll, Utah Agricultural College.

How much are you paying for your bran and shorts? If you are receiving the full benefit of the Government's recent ruling on prices for these feeds, you should be buying them for approximately forty cents less on the dollar than formerly. According to this ruling, bran must not be sold for more than thirty eight per cent of the price of wheat to the millers and shorts at not more than two dollars a ton more than bran. This should bring the price of bran down to about twenty dollars a ton, instead of the thirty to forty dollars that has been charged, with shorts two dollars more. It is your own fault if you don't receive this reduction.

Give the best of care to cows that will calve soon. Keep them in good condition with plenty of feed and careful handling. At the time of calving give the cow the best treatment and be sure if the weather is cold, to prevent the calf from chilling.

In general, the ranges are not in the best of condition right now. The wise stockman will put his cattle in good condition throughout the winter and not turn them on the range thin and poor. There will be little profit for the man who turns thin cattle on the range this spring.

There is still time to breed sows for a late farrow. If you have a sow to breed, patriotism as well as profit demand that you get returns from her. The need for pork and lard has never been so great as now and this need will increase as spring comes. The best of care should be given to the sows now about ready to farrow. With pork so necessary to our government, it is little less than crime to let pigs die through lack of care.

Feed is much more plentiful this winter than last. This does not mean that we should waste it, however. Good racks and troughs soon save their cost in the feed saved. They are a necessary investment.

THE NATIVE COW

She had a place in the world one time,
did the common native cow;
She had a place in the world one time,
but she hasn't got it now.
When the land was new and farms
were few and our grandsires
broke the sod
That had lain untilled since first it
was made by the mighty hand of
God.

She filled her place in the world one
time with dignity, grace and
ease;
She furnished milk for the children's
food and butter and sometimes
cheese.
No grain was fed, but she got instead
some hay and cornstalks dry;
She roughed it then with the rest of
them in the days that now are by.

She had no pedigree written out or
name that couldn't be said;
Her color was anything under the
sun, brindle, dun red;
We think of her with the things that
were when all of our land was
new.
And we've filled her place with
Holsteins grand and Jerseys and
Guernseys, too.
For times have changed since the far-
off days of the common, native
cow;
She did what the world required of
her, but she couldn't do now;
For our needs have grown as time has
flown, and the end is not in sight;
And the cry goes on for better cows
than the past has brought to
light.

—Prof. Frandsen.

"It is cheaper to keep the cow warm with a good barn than to keep her warm with high-priced feeds."

UNCLE SAM
Needs more Pork
Needs more Fat
Needs your Help
Breed more sows
for
PORK —— PROFIT

Keep the pigs growing. It is the pig's business to develop a good frame, to grow bone, muscle, and vital organs, and to lay on fat. Plenty of pasture, some grain, exercise, and good sanitary quarters are all necessary if the pig is to be thrifty and profitable.

THE CARE AND FEEDING OF HORSES

Hints For Beginners

Issued by the Boston Work-horse Relief Association.

1. Remember that the horse is an extremely timid animal, and must be handled very gently, though firmly. Always speak to the horse when approaching him; take hold of his headstall carefully, pat him on the neck, and draw his head slowly toward you. In tying him, be sure that the rope is not so long that he can get his leg or foot over it, as painful wounds are often caused in that way.

2. In entering a stall do not put your hand on the animal, as that might cause a vicious or stupid horse to kick, especially if you are a stranger to him; but tell him to "get over," and then step in quickly on the left of the horse.

3. In leading a horse take a firm grip of his headstall or bridle with your right hand, hold the end of the halter rope in your left hand, and keep beside him, not in front of him. If he rears or pulls back, you can let go of the headstall and hold him by the rope,—not trying to struggle with him, keeping your face turned from the animal, but stepping toward him as he goes backward. He must move slowly in going backward, and will soon tire of it.

4. Do not mount a horse equipped only with a halter; and do not attempt to ride a strange horse unless he is bridled, and there is some one with you to hold him, and lead him about at first. You may be willing to take

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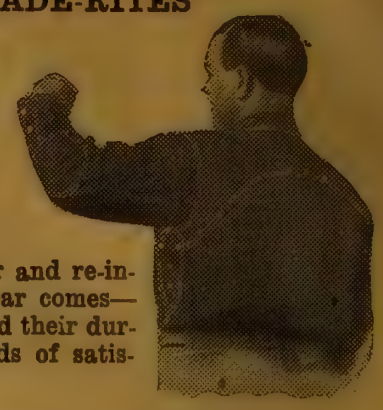

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Ogden, Utah.

a chance yourself; but a horse never forgets anything, and if he bolts or throws his rider once, he may do the same thing again at a critical moment. The Prince Imperial lost his life because his horse would not stand to be mounted.

5. The stomach of the horse is extremely small, and therefore he should be watered at least three or four times a day, and, if possible, should receive both hay and grain three times a day. The less work he does the more important it is to give him hay often, because a hungry, idle horse is apt to take up some bad habit such as biting, kicking, cribbing, or weaving.

6. If the horse gnaws his manger or stall it is certain that he needs salt, unless he is very hungry. Keep a lump of salt always before him if possible.

7. Horses should be watered first and fed afterward; and, if possible, watered again an hour or two after eating their grain.

8. Never water or grain a horse that is much heated;—to do that is likely to "founder" and so ruin him.

9. Never give grain to a tired horse; let him rest for an hour or two first. Otnerwise, he is very likely to have indigestion and colic. More horses die from colic than from anything else.

10. Bring your horse into the stable or camp cool and breathing easily, if possible. Notning is worse for a horse than a chill after being heated. But if for any reason it is necessary to halt or encamp when your horse is sweating,—then blanket him and walk him about, or put him in a sheltered spot and rub him,—according to circumstances. A horse is cold when his ears are cold. Get in the habit of feeling his ears.

11. Use the currycomb very lightly, if at all. It is apt to hurt the skin of the horse. A stiff brush is better, —and much more efficacious if the horse's coat is long. The head and legs should never be touched with the currycomb. You can clean your horse with a wisp of hay or straw vigorously used,—or even with your bare hands. At least an hour a day of hard work should be devoted to cleaning a horse. This helps the circulation removes dead skin and dirt, and makes the horse feel right and look right. Look out for frosted bits in winter.

12. Avoid sore backs and shoulders by keeping the inside of your saddle or harness perfectly clean, and by sponging or cleaning off the saddle or harness marks. The dandruff in the horse's hair is very salt, and when this dandruff dries on the horse or on his equipment, it irritates the skin.

13. On reaching camp or stable, do not remove the saddle, unless you can at once clean and dry the hair underneath. If that cannot be done immediately, loosen the girth and leave the saddle and blanket on until the hair is dry underneath.

14. In order to avoid scratches, rub your horse's legs dry when he comes in wet or muddy. This is hard work, but it can be done. In winter, when the roads are muddy, or there is snow on the ground, put a little vaseline or grease on his pasterns and heels to shed the moisture.

PARASITICAL POPULATION

"Do you think it's right to support a large population in idleness?" asked the man of reckless ideas.

"Sometimes it's got to be done," replied Farmer Corntossel. "I have a whole barnyard full of chickens that haven't laid an egg all winter."

AN INFERENCE

An old hen was pecking at some stray carpet tacks in the yard.

"Now, what do you suppose that hen is eating those tacks for? said Henry.

"Perhaps," responded his little sister, "she is going to lay a carpet."

Don't allow the farm wagon to stand out of doors with the belief that a new bed for it is cheaper than shelter. Replacing the original bed weakens the average wagon.

Using Barnyard Manure

The thrifty farmer will be impressed with the importance of saving and using manure this year. Fertile soil now means more to us than ever before.

We in America do not conserve and apply farm manure in such a manner as to the full benefits of this means of plant food. European and Asiatic farmers value manure highly and hence make better use of it than we do. Lands that have been in cultivation for hundreds of years are still producing well because of the extensive use of manure.

While necessity has forced farmers in China and Japan to conserve fertility and manure land yet the fact remains that their soil yields more, and greater population is permitted because of such practice. Our necessity is not so great as theirs, but unless we begin to make use of such economical means of fertility the time may come when we will wish we had. It is not wise to wait till the struggle for existence forces us to resort to strenuous ways of meeting starvation. On the contrary, we should make use of our opportunities to prevent such coercion.

By barnyard manure we mean usually the manure that accumulates in the barnyard. Generally the term is restricted to mean the excreta from cattle, but it may include the droppings from other animals as well. Stable manure is applied to the droppings that accumulate in stables where horses are fed, meaning horse manure. To designate other specific kinds we usually say sheep manure, hog manure, poultry manure, etc.

To estimate the value of the manure from such larger animals as cattle, horses, sheep and hogs we should consider (1) the dung; (2) the urine; (3) the litter or bedding.

It will be understood that the dung of the larger animals consist of the undigested portions of the food, ground more or less according to the nature of the animal, moistened and mixed with the digestive fluids of the animal's stomach, and to some degree mixed with waste tissues of the alimentary canal. When the undigested portions of the feed found in the manure consist largely of woody fibrous tissues of the food it is in a much better mechanical condition to furnish fertilizer than the feed that furnished these materials, because it has been ground fine, moistened and mixed with juices of the stomach and hence soon decays. In a general way it may be said that the dung contains about one-third of the total nitrogen in the manure, one-fifth of the total potash, and nearly all of the total phosphoric acid. But the dung must undergo decomposition before it is available for plant food while the urine is already soluble and ready for use.

The liquid part of manure, the urine, is composed largely of water, but contains a number of compounds produced as changes in the body, such as the wornout tissues. Urine usually contains, according to authorities on this subject, about two-thirds of the total nitrogen in the manure, four-fifths of the potash and a little of the phosphoric acid. It will thus be seen that it is the richest part of the manure and should be carefully saved.

As to the relative amounts of dung and urine voided by animals. Brooks of the Massachusetts station says that for the cow, the total weight of urine under normal conditions is about twice the weight of the dung. For the horse and the sheep, there is much less difference; the two are usually of substantially equal weight, although the dung not infrequently weighs more than the urine. For the hog the variations are so great that it is difficult to make a general statement, but the urine is relatively very abundant.

From what has already been said relative to the value of the urine it will be seen that litter for bedding is of much importance in the value of manure. While the primary use of bedding is for the comfort and cleanliness of the animals it is a factor in saving and using barnyard manure. Bedding if of the right kind absorbs the liquids, that is, the urine; it also to some extent absorbs gases and dilutes the manure, making it easier to spread. The bedding also makes the manure richer in plant food which is quite and advantage in using.

There are various kinds of litter or bedding used, the most common being straw, leaves, peat, mass, sawdust, etc. All things being considered, the straw of grains is the best. In addition to the value of the straw as a bedding material it contains considerable plant food. A ton of ordinary straw contains about 16 pounds of nitrogen, 4 pounds of phosphoric acid, 26 pounds of potash and 9 pounds of lime. This amount of fertility with the humus value of the straw is considerable, well worth considering. An average ton of farm manure contains about 10 pounds of each nitrogen and potash. It will thus be seen that a ton of straw contains more pounds actual plant food than a ton of manure, but both together make better and richer manure than either one used alone. One thing that should not be forgotten is that hay and straw have value as feed while manure is a waste product without value except as a manure.

It should be remembered that the composition and value of barnyard manure depends very largely upon the feeds used. When hay, silage and other roughage is fed the manure will be low in nitrogen. If cotton seed meal, grain, shorts, rice bran, etc., feeds rich in protein, are fed the percentage in nitrogen and phosphoric acid in the manure will be higher.

The age of the animal has much to do with the richness of the manure. An old or mature animal voids manure richer in plant food than a younger animal that must use more of phosphate, lime, nitrogen, etc., in making bone, muscle, flesh, hide, hair, etc. An animal fattened for beef mutton or pork will produce richer manure than one kept for milk, wool, etc., generally speaking.

The value of the manure depends very largely upon the manner in which it is saved and applied. Thousands of dollars in profits are lost every year on the farm because the plant food in manure is allowed to go to waste. It is one thing to save the manure and quite another to save the plant food in it and use it for larger crops. More will be said on this subject. In the meanwhile we would like to hear from farmers, gardeners and orchardists as to how they save and use barnyard manure.

IDLE ACRES

Nearly every farm has some portion of it that is either not used at all or is used in such a way as to produce very little. On many farms there are patches of low ground which can not be tilled because they are too wet. Usually when drained these wet areas are the richest land on the farm.

Just at present, when the world is engaged in the most gigantic struggle in its history, the forces of democracy against those of autocracy, the product of these idle acres is needed. This is an excellent time to put them into use. Small patches of wet land can be drained at small expense. Between now and the opening up of spring work there is ample time to do this work. This year the farmer has been able to sell his products at a fair price and has the money with which to buy the tile. Every farmer, part of whose farm is unproductive because it needs drainage, should take advantage of the present opportunity to add to his cropping area by supplying the necessary drainage. These lands will produce more than average farm lands. Every product will help to win the war.

"Lost wealth may be replaced by industry, lost knowledge by study, lost health by temperance or medicine; but lost time is gone forever."—Samuel Smiles.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

EMPTY WAGONS

The tragedy of so many places is that so many farm wagons go to town empty and come back with a load, and so few go there loaded and come back empty.

Except in the busiest seasons most of our farm folks take Saturday afternoon off and go to town. Some go as a matter of habit; many go on some errand, usually to lay in supplies for the week. The wagons you meet going to town are empty; those you meet going back to the farm home have from a few parcels to a load.

In every community, however, there is usually one farmer—sometimes more—who seldom goes to town with an empty wagon. Regardless of the season he and his family have something at home marketable in the town. In the spring it may be fresh vegetables; in the summer, watermelons, peas and fruits; in the fall, syrup, peanuts, turnips, turkeys; in the winter, spare-ribs, back-bone and sausage; the year round, eggs, chickens, butter. Sometimes it's a load of corn, or other feed, he can spare from a surplus.

Of course such a wagon, when it goes back home, seldom carries a load of groceries, other than a little sugar and coffee and flour. It never carries back a load of feed. And of course on such a farm there is plenty to eat for man and beast, the family dresses well, and there are comforts and conveniences in the home. Needless to say, doubtless, that the family is happy and contented.

More of our farmers need to get the habit of taking something to town to sell. The townspeople want the products of the farm, and you can supply them without interfering with your ordinary operations. It is a habit that spells thrift and prosperity.

Let there be fewer empty wagons on the road to town.

"Obedience and resignation are our personal offerings upon the altar of duty."—Hosea Ballou.

MORE WHEAT FOR UTAH

(Continued from page 3)

wheat. Such reasonably good yields were obtained as to encourage added acres next spring. The dry-farm, then affords opportunity for a substantial, though not for a heavy increase.

Use Irrigated Farms

Whereas dry land affords but the one opportunity, irrigated farms, though in somewhat the same condition, present several avenues down which increased production may come. Low-yielding pasture lands, freshly drained areas, hitherto unused corners, and some land from which other crops have been shifted temporarily,—all of these may be planted to spring wheat and irrigated without materially interfering with sugar beets, alfalfa, potatoes, or grain other than wheat. Even had there been no emergency call for increased wheat production, old pastures should be plowed up, wet lands drained, and waste margins or corners cropped. If proper adjustment is made crops may be shifted without loss. For example, freshly broken grass or alfalfa sod are almost ideal places for corn, whereas they would be fatal to wheat on account of its lodging. Let corn be planted on the sod, and the corn acres planted to wheat. Just so far as this transfer of crops will not decrease the production of other crops, it may be parcticed—but not an inch farther. Because potatoes and sugar beets are probably more profitable than wheat, they should not be replaced to any appreciable extent by it. Besides, sugar beets seem to be as necessary as wheat, but that is another question—a question of how to avoid an impending sugar famine, either in France and England or in the United States.

Early Planting Essential

Extra wheat acres is one-half the problem; the other half is higher acre yields. Of first importance in this respect is early planting on a fine yet firm seedbed. This is not merely good; it is essential. The hot dry ripening season is not well adapted to the proper filling of the grain. A good seed bed supplements early planting by giving the wheat a good start and encouraging a full stand.

Clean Seed Important

Considerable gain may be obtained by using the cleanest, highyielding seed available. It will be profitable to screen or fan out weed seed, chaff, and badly shrunken kernels. Finally, treatment for smut is to be applied with even greater care than usual. The best method is to soak it for ten minutes in a solution of one pint of formalin in forty gallons of water. Then from seed time to harvest, extra vigilance must prevail, less weeds, insects, or cows break in and steal.

A Patriotic Duty

In conclusion, it is essential not to lose sight of the patriotic service. The price of wheat, high though it now is, may not be great enough in itself to justify increased wheat production. Labor is high and machinery expensive. At this time, however, it seems more important that food be sent to the armies now fighting than to send half-trained men to increase the number of hungry mouths in Europe. The sacrifice necessary to increased wheat production is not so trying as that of sending our youth. Life is more precious than labor, yet extra wheat seems equally if not more important just now than soldiers. Two armies well fed will probably be more efficient than three poorly nourished. Especially is this important now that it seems probable that Germany will control Russian fields next year.

Summary

Although most of the wheat is already planted, great gains may be made by planting spring grain. It is not necessary to do this at the expense of other crops. On both dry-farm and irrigated lands, considerable areas may be utilized that would otherwise be idle, or nearly so. Early planting of well-cleaned and thoroughly-treated seed offers the greatest returns. Should it so happen that even the considerable returns from wheat do not make it more profitable than other crops, patriotism demands that more wheat be grown. In the end, it may prove nearly as efficient to feed the present armies as to raise new ones.

MR. HOOVER REPLIES

(Continued from page 7)

the Allies 110,356 tons of refined sugar, and, in the same period, Cuba has shipped to Europe 246,133 tons of the raw product, which, under normal conditions, would have been shipped to the United States. These figures represent just the amount of the sugar shortage in the latter country. No more sugar has been exported or diverted from the United States than, with the rigid practice of economy, could be spared. There has been a sugar shortage, but there has been no sugar "famine" in the United States. The Food Administration is justified in claiming that it has handled the situation with the view of sustaining the morale of Great Britain and France, where the sugar ration has been extremely low. Even with the exportatons from the United States into those countries the supply has been reduced in England to 24 pounds a year for each person, and in France to 14 pounds, as against a consumption in the United States of 55 pounds.

The intimation that the Food Administration has favored the Allies unduly as the cost of consumers in the United States is a shamful preversion of the truth. The Hoover policy has been displeasing to great sugar interests evidently because it made it impossible for those in control of the commodity to extort from 25 to 30 cents a pound for sugar from the consumers. The householders of the United States are more than $200,000,000 in, while the sugar barons are more than $200,000,000 out, as a result of Hoover's "mismanagement."

The more of this kind of "mismanagement" these householders can get the better they will like it.—Christian Science Monitor.

VALUABLE BULLETIN FOR SUGAR BEET INDUSTRY ISSUED

A new bulletin giving the life history of the beet leafhopper, by Dr. E. D. Ball, former director of the Utah Experiment Station is now ready for distribution by the Station.

The title of the bulletin is "The Beet Leafhopper and the Curly Leaf Disease that it Transmits." The bulletin, which promises to be of considerable value to the beet growers in the west, records the results of extensive studies of this insect covering a period of years. The curly-leaf is a well-known and dreaded disease that sometimes occurs in the sugar beet fields of the west. While a few beets are usually to be founded affected with this disease every year, it is only periodically serious. In these seasons whole fields are destroyed and losses running into millions of dollars result.

Dr. Ball shows that the disease is transmitted to normal, healthy beets by an insect which he calls the beet leafhopper. The adult insect is "a tiny creamy or greenish-white insect * * * about one-eighth of an inch long and one-fourth as wide." It is rather triangular shaped at the head and tapers to a narrow blunt end at the tip of the folded wings. It is a strong flier and jumps readily for considerable distances.

The leafhopper suddenly appears in May or June in the beet fields of the middle or southern parts of Utah and gradually travels north, requiring about thirty days to reach the northern state line. Other states have similar dates. The adult lays eggs in the stems and larger veins of the leaves. The eggs hatch about fifteen days later into small leafhoppers which strongly resemble the adults, but they have no wings while young.

Late in the summer or in the fall of the year the young leafhoppers (which have since become fully grown) disappear. Whether they return to the beet fields the following spring seems to depend upon factors not clearly understood at present.

Severe infestations have been recorded in Utah in 1905 about thinning time in Sevier county and about six weeks later in Cache county. In 1906 a second outbreak occurred early in June and a third heavy infestation came in 1915 affecting all the plantings before May first. About thirty days later the disease appeared in Cache valley.

The curly-leaf disease appears a few days after the leafhopper feeds upon the plant. If the conditions are favorable for the disease one feeding by one insect may kill the plant. These favorable factors are: hot dry weather, young beets, sandy soil, clean cultivation, lack of moisture, and many leafhoppers. Usually the disease does not appear in cold, wet weather but shows its effects later when the hot, dry spells arrive. For greater resistance to the curly leaf then, Dr. Ball advises the growing of crops in districts where early planting is permissible; not to thin while the leafhoppers are first infesting the field; and sufficient irrigation to promote constant, vigorous growth of the plant without an opportunity to wilt. He finds that after the growth of the plants enables the leaves to shade the ground, the disease is rarely so serious as in the case of younger plants. An old plant will be even less affected.

This bulletin will be sent free upon application to the Experiment Station, Utah Agricultural College, Logan, Utah for bulletin 155.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

We are offering this week some excellent buys in the Cache valley right near the town, railroad station, schools and churches; one hundred sixty acres, 65 acres of irrigated land and 90 acres of pasture land; price $100 per acre for the irrigated land and $10 for the pasture; 10 per cent down and ten years on the balance.

In the same locality we have 80 acres for $110 per acre, 10 per cent down, ten years to pay. These farms are among the oldest in Cache valley and have been raising excellent crops for a good many years. The ground is level, easy to irrigate, lies immediately under the canal and sub-irrigates; no danger of any waterlogging, as there is a big natural drainage.

In the Bear River valley we are offering right near the town of Tremonton 60 acres, good seven-room house, outbuildings, orchard, all fenced, partly in alfalfa, the other part has been in sugar beets during the past year; on the main state highway; price $140 per acre, small payment down and terms on the balance.

We also have one farm containing 40 acres that is one of the oldest farms in the Bear River valley, right near the beet dump; partly in alfalfa; $130 per acre; one-fourth down and ten years on the balance, 6 per cent interest.

Right immediately adjoining the town of Tremonton we have three 40-acre tracts that we can sell for $120 per acre for one and the other two $140 per acre. This land lies within one-half mile of the city of Tremonton, has been farmed for the last twenty years, is under a high state of cultivation, full water right from the Bear River canal. If you want a farm adjoining one of the nicest towns in the state of Utah this will certainly appeal to you. Ten per cent down and ten years on the balance.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

The Chatham Fanning Mill

Cleans, Grades, and separates all kinds of field seed perfectly. Specially equipped to handle grain seeds. Hand or Power Drive, capacity 60 bushels per hour.

Sold By

Utah Implement-Vehicle Company

SALT LAKE CITY, UTAH.

Price and full information on application.

YOUR INCUBATOR

Should soon be in operation for best results. Take no chances, get the leading hot water machines, a Buckeye or Queen. "Do your bit" for "Uncle Sams" meat supply. Write TODAY for Big Free Seed and Poultry Supply Catalog.

PORTER-WALTON CO.

Salt Lake City

Save Grain For Human Food

Feed your livestock
COTTONSEED CAKE
AND
SOY BEAN CAKE
The best and cheapest food

Write us for prices

Globe Grain & Milling Co.
302 Kearns Building,
Salt Lake City, Utah.

BULLS FOR SALE

Two registered Holstein bulls of serviceable age. From dams producing 04¼ and 607½ lbs. butter in one year espectively. And are sired by our famous herd bull a half brother to Duchess Skylark Ormsby the World's Record cow ver all breeds. These bulls will be sold t farmers prices.

H. H. STIYER
Buhl Idaho

FOR SALE

5 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH
Buhl Idaho

200 Tons Corn Silage

30 TONS OF ALFALFA
30 LOADS OF STRAW

All in first class shape, must be fed on the place, help for feeding can be obtained, shelter or shed room provided.

Three Miles North of Pleasant Grove.

A. P. WARNICK,
Pleasant Grove, Utah.

THIS MAN MUST SELL HIS AUTO

Do You Want a Bargain?

The car is 1917 model seven-passenger Studebaker; 40 horse power, four cylinder. Few cars have as careful use and good care and attention as this one had and few cars are as completely equipped. It has five almost new tires (four are non-skids guaranteed 5,000 miles and used between 700 and 800 miles), bumper, extra rim, side mirror, spot light, chains, side curtains, top cover, jack, pump, regular and special sets of tools, extra spark plugs, extra tube, block and tackle and folding shovel for emergency—in fact fully equipped in every way—no extras to buy.

The man who owns it is compelled to sell and is willing to make a sacrifice. He travels over the State and will deliver it to your home, demonstrate it to your satisfaction and if desired teach you to drive it and take care of it.

A new car of the same make would cost (with similar equipment $1,300.00. The price this man is willing to accept under the conditions make this a genuine bargain.

Address Car Owner care of Utah Farmer, Lehi, Utah. adv.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending Dec. 15th.—Cattle—Receipts, 725; market, steady throughout week; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.50; fair to good, $6.00@7.00; canners, $4.00@5.00; feeder cows, $5.00@6.00; veal calves, $9.00@10.00.

Hogs—Receipts, 2,747; market, slightly lower; tops, $15.50; bulk of sales, $15.50.

Sheep—Receipts, 9,705; market, steady; lambs, $15.00@16.00; ewes, $9.00@10.00.

North Salt Lake, Jan 16.—Cattle—Receipts 154; market steady, strong demand for fat steers. Choice steers, $9.50@10.00; good steers, $8.00@9.00; fair steers, $6.75@7.75; choice cow and heavy heifers, $7.00@7.50; fair to good cows and heifers, 6.00@6.50; cutters, $4.75@5.50; canners, $4.00@4.50; bulls, $5.25@6.00.

Hogs—Receipts 117; market 25 cents lower, due to the fluctuation of eastern market. Choice fat hogs, 175 to 250 pounds, 15.25; mixed fat hogs, 160 pounds and up, $15.00@15.25.

Sheep—Receipts 1621; market weak demand poor. Choice grain fed lambs, $14.50@15.00; choice yearling wethers, $11.00@11.50; fat wethers, $10.50@11.00; fat ewes, $9.50@10.00.

Kansas City, Jan. 16.—Hogs—Market steady. Bulk, $15.95@16.15; heavy, $16.10@16.25; packers and butchers, $16.05@16.20; light, $15.95@$16.15; pigs, $12.00@15.00.

Cattle—Receipts 12,000; market steady. Prime fed steers, $12.00@14.00; dressed beef steers, $10.50@12.90; western steers, $8.50@11.50; cows, $6.50@11.00; heifers, $7.00@11.00; stockers and feeders, $7.00@11.50; bulls, $7.00@10.50; calves, $6.50@14.00.

Sheep—Receipts 40; market strong. Lambs, $16.25@17.00; yearlings, $12.50@14.05; wethers, $11.50@13.00; ewes, $9.75@12.25.

GARAGE, TOOL SHED AND WORKSHOP

By H. Colin Campbell.

Today the modern farm is a manufacturing plant. This is literally true because most of the farm processes are carried on by machine rather than by the old laborious hand methods of our fathers and grandfathers. The progressive modern business farmer makes machinery do for him everything possible for machinery to do, but in some cases the business farmer stops there. At the end of the last furrow of the year the plow is left exposed to the elements, awaiting the necessity for using it in the spring.

On nearly every farm today the investment in machinery represents a considerable sum. Binders, mowers, grain drills, cultivators, riding plows, tractors and automobiles are as common on the farm now as the cradle and scythe were fifty or more years ago. The latter were not very costly, so it did not make much difference if they were left hanging in a convenient tree crotch until again needed.

But not so with the riding plow, the binder, the grain drill, tractors and many other expensive pieces of modern equipment. The manufacturer has learned that many of his profits come from conservation. The longer he can make a tool or piece of machinery last, that much more money can go into reserve funds or into profits. Depreciation eats up the value of most property more rapidly than normal use. A deserted house goes to rack and ruin much more quickly than one that is continually occupied and normally receives the care that occupation means.

By keeping farm machinery in a good, dry shed and otherwise caring for it when not in use, its period of usefulness can be increased to three or four times the life of the same machines left exposed to the weather.

But a shed does not mean any old kind of a structure. In view of the increasing cost of most of the older building materials it does not pay to build other than for permanence, and since machinery is valuable it should be given all possible protection, which means protection against possible loss through fire. Permanence, if attained, means concrete construction, and concrete construction means fire-safeness.

The size and shape of the implement house should conform to the number and size of the implements to be housed. For this reason it is not possible to give a design that can be used for every individual requirement. If the implement house is built with one side open, this should face the south or east to admit the sun and keep out winter storms, which generally come from the north or the west.

But no implement house or machinery storage building should be built without considering all the needs of the modern farm, which generally means the care of the automobile. There should be a completely enclosed garage at one end of the structure, separated from the remainder by a concrete wall and closed on the front with fireproof doors, which may be made of sheet steel.

To give plenty of room for large implements, the house should be about sixteen feet deep. Columns or upright supports should be about twelve feet apart to take in the widest machines. The house should be built long and low, somewhat after the general lines of a wagon shed. Future additions may be made to one end, thus giving the advantages of a unit structure.

Either monolithic concrete, concrete block or plaster on steel frame and metal fabric may be used. Any of them will give fireproof construction, provided also a concrete roof is used.

The shed should be arranged so that a workshop is a feature of one corner or portion of it. Here a portable gasoline engine may be set up if desired, and with a line shaft overhead, with pulley and belt connection, a lathe or other small machines may be operated to do many repair jobs that would otherwise cost considerable money, both in cash and lost time. Open portions of the shed, if the whole structure is not enclosed, can be equipped with hanging canvas on rollers, so that rain and snow can be excluded during heavy storms.

The farmer who builds a structure of this kind certainly has acquired one more permanent asset, and if his farm needs call for any considerable quantity of machinery he can soon prove to himself that the cost of the improvement will be returned to him in full within a few years as a result of eliminating the rapid depreciation that comes from exposing machinery to possible loss by fire and to rapid deterioration from being left at the mercy of the elements.

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all get by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS
Breeders of Percheron Horses and Rambouillet Sheep.
W. S. HANSON, Prop.
Collinston Utah

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell dvertise them in the Utah Farmer. Address the Lehi Office.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

FOR SALE

Registered Hereford BULLS and HEIFERS $100 to $200 each.

20 Registered BERKSHIRE PIGS farrowed December ready for delivery at $15 each.

Registered ANGORA GOATS of both sex.

And a car of grade CALVES, Steers or Heifers.

Also some nice MULES.

My farm is located three miles north of Ephraim. But I will met you at Ephraim on an appointment, and you can inspect the stock before buying.

JAMES G. OLSEN
Ephraim Utah

FOR SALE

Purebred Holstein-Friesian Bull Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndike 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars weighing about 100 pounds each, sired by Richards Pathfinder 1st Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please.

ERIK W. OLSON
Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS
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$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

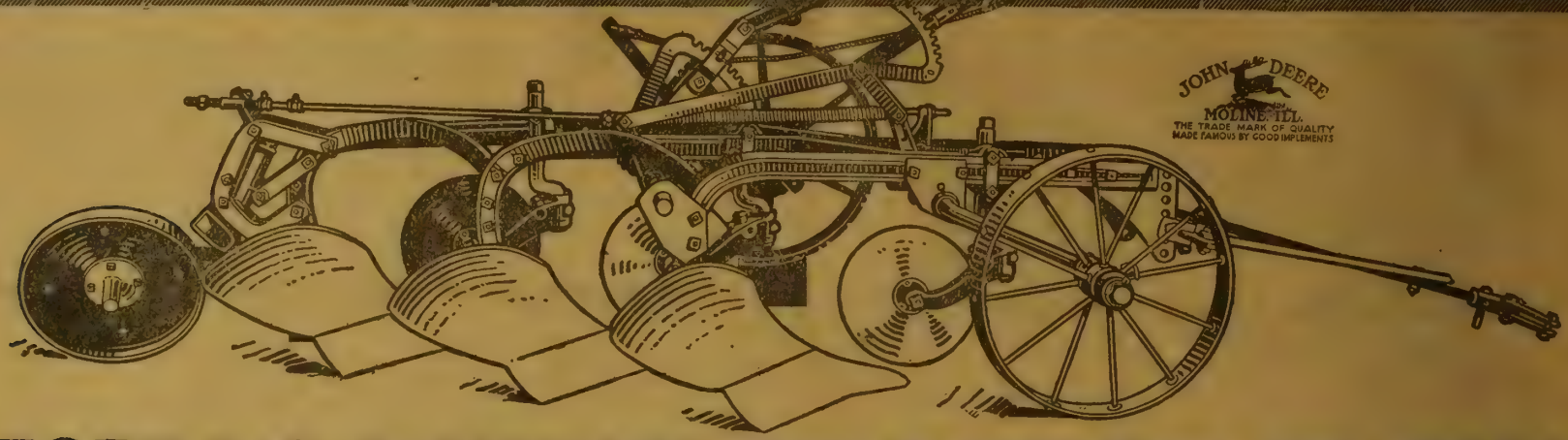
H. A. PINEGAR
Wellington Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

No Tractor Plowing Outfit Is Better Than Its *Plow*



JOHN DEERE TRACTOR PLOWS

IN the all-important work of making seed beds your tractor will furnish only power. Your plow will apply this power. The direct work of making the seed bed—the source of your profits—will depend upon the plow. You need, above everything else, the best tractor plow you can get. John Deere Tractor Plows, *for use with any standard tractor,* have a special attraction for you as you consider the importance of plow value to tractor power value.

Eighty years of the most successful experience in plow-making is behind John Deere Tractor Plows. A trademark, made famous by good implements—as an assurance of special quality—is on these plows. This means a lot to you.

John Deere Bottoms Insure Superior Seed Bed Making

In a particular way, John Deere Tractor Plows offer an attraction to you because of their superior bottoms. Bottom quality, you know, makes plow quality. The distinctive bottom quality that features John Deere Tractor Plows is secured by using only highest grade materials and extreme care and skill in adapting these materials.

You will find this superior bottom quality evident in the exceptional service that John Deere Tractor Plows give—in long life, in scouring, in pulverizing the soil, in covering trash, in turning the furrow-slice with the least possible resistance and in making uniformly deep, roomy, compact seed-beds.

Save Time, Labor and Upkeep with John Deere Tractor Plows

In addition to their direct advantages for better seed bed making, John Deere Tractor Plows co-operate fully with the tractor for rapid, fuel-saving work. You control them from the tractor seat. They require little or no watching. Their extra clearance and scouring qualities prevent clogging. Their bottoms lift high and level for turning. The location of the axles causes the bottoms to reach full depth quickly and stay in the ground. Their John Deere Quick Detachable Shares can be removed by unscrewing only one nut and can be replaced as easily. Their perfect balance and bottom qualities make them extremely light running. They have no chains or sprockets to cause trouble in the field. Every part is as strong as the best of material and the best of workmanship can make it. John Deere Tractor Plows are used successfully with any standard tractor. If your tractor is of the large type you will want the No. 6 plow, carrying three or four bottoms. If your tractor is of the smaller type you will want the No. 5 plow, carrying two or three bottoms.

Get These Books

Write today for our free booklet describing fully both the No. 5 and No. 6 John Deere Tractor Plows. It has a message on tractor plow value that you will find profitable to you. Ask also for our big free book "Better Farm Implements and How to Use Them." Its 156 pages describe a full line of labor saving implements—tells how to adjust and operate them. It is full of practical information that will help you. Put it in your library. Use it as a reference book. It will be worth dollars to you.

To get these books, indicate the implements in which you are interested and ask for package T. P.-142

John Deere, Moline, Illinois

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 26 LEHI AND SALT LAKE CITY, UTAH. JANUARY 26, 1918

The Farmers Responsibility During War

A Message from President of Utah Agricultural College

Dr. Elmer G. Peterson

THE farmers of Utah are approaching a period of trial. Throughout the world a spirit of unrest, bordering in places upon anarchy and in places representing the extreme of anarchy, is agitating the public. The temptation today is to lose step, to break pace. All credit to the strong calm men who, now of all times, run true. All honor to the farmers who see beyond the noise of the present to the quiet which will come tomorrow.

Today is a period of privilege; it is a period of heavy responsibility. Our acres are now God's acres given in trust in order that the needs of humanity may be satisfied. To feed the starving, to put new vigor into the fibre of the strong who are carrying the burdens of the world, to give, when we might withold,—these are the responsibilities of the farmers of Utah today. We are privileged, in the twinkling of an eye, to desist from the sordid business of money getting and to become partners with free humanity every where in the holiest war ever waged on earth.

DR. ELMER G. PETERSON
Utah Agricultural College.

We must produce sugar beets in abundance. Any community which allows any influence to interfere with a maximum production of beets is lending itself to unworthy ends. The spirit of co-operation which has made this state what it is will compose any seeming difficulties and will produce abundantly in this time of opportunity. In days of our luxury when the world was well supplied with food we farmed for gain, for profit. Today we farm to save life and relieve suffering. Blind indeed must we be if we do not see that each extra ton of beets means life and health for the starving of France, England, Belguim, Armenia, Poland, and Russia. Never before, and it may never again be so true was the farmer of Utah faced by such a sacred opportunity. **If a child were dying at his gate the call could not be more direct or more compelling.**

We must produce wheat and meats. Wheat is the staff of life and the only cereal from which our allies are accustomed to make bread. We must enlarge our wheat acreage. We have had a most fortunate fall with the result that more fall plowing has been done than ever before in Utah. We are blessed with abundant hay for our needs and much to ship out to those in sore need. Meat we must produce in larger quantities. Yet we are decreasing steadily in this direction. We cannot expect rapid increases in beef or mutton. Hogs and poultry we should emphasize this year because of their adaptability to rapid increase.

Sheep should be, in few or larger numbers to a few hundred depending upon the size and organization of the farm, upon thousands of our Utah farms. By such a method only can we prevent a great decrease in sheep in Utah because the ranges are being cut up by homestead entry and large flocks are consequently becoming less common. Vegetables and fruits we should raise in abundance and preserve for the days ahead.

Eat less meat, wheat bread and sugar, for the sake of health and patriotism. Wisdom will dictate a selection of marketable crops but aside from markets we should produce to our capacity. The days bring larger and larger returns to the intelligent farmer. We should profit by the times but we should not allow the question of profits to overbalance the scale against the high privilege of serving our suffering fellow beings.

HOW MUCH FOOD WILL AN ACRE GROW?

D. E. Robinson, U. A. C.

Farm Products Vary Widely In Their Food Producing Value.

What staple farm products will produce the greatest amount of human food from an acre? The Office of Farm Management of the United States Department of Agriculture has answered the question after a series of carefully planned experiments in which all the staple crops and animal products of the United States were included. In all cases, the amount of food produced from an acre was reduced to pounds of protein and to calories. The protein produced indicates the flesh-building value of the product, the calories, the energy producing value.

Eliminating from this study the products not normally produced in the inter-mountain region, the following significant results are to be noted:

An acre of corn produced 147 pounds of protein and 3,124,240 calories; and acre of potatoes, 66 pounds of protein and 1,908,000 calories; rye, 118.8 of protein and 1,807,200 calories; wheat, 110.4 and 1,788,000; oats, 89.4, and 1,254,400; and beans 157.9, and 1,123,080.

When the products of the acre were converted into dairy products it was found that, where milk was produced, 72.3 pounds of protein was produced and 711,750 calories. Cheese gave 56.7 of protein and 127,050 calories; butter fat 1 pound of protein and 355,173 calories. In the case of butter fat, the skim milk left would increase the protein production greatly.

When meat products were produced, it was found that with pork, 22.7 pounds of protein could be produced, and 672,945 calories; with mutton, 14.7 protein and 137,295 calories; with beef, 18.5 protein and 130,000 calories; with poultry, where meat and eggs were produced, the meat gave 12.7 pounds of protein and 68,970 calories and the eggs, 14.8 protein and 79,704 calories, or a total of 27.5 pounds of protein and 178,695 calories. Where only meat was produced, the result was 33 pounds of protein and 178,695 calories; with eggs only, 24.6 protein and 132,192 calories. This shows among other things, "that corn, on a given area, will produce more human food than any other crop commonly grown on American farms. This crop heads the list in units of energy produced per acre, and is ahead of all other crops except navy beans, and soy beans in tissue-building material.

It shows that the dairy cow is the most efficient of farm animals in the production of human food (milk) and that the hog is the most efficient in the conversion of grain into meat, producing five times as much per acre of crops as does any other animal.

SPRAYING MACHINERY SHOULD BE OVERHAULED

H. R. Hagan, U. A. C.

Now that winter has at last closed down, it is time for the farmer to go over his spraying machinery and weevil control apparatus to put it in good shape for early spring. Up to the present, the fine weather has made it possible for the farmer to get his land in shape for spring planting, and do much other outside work. Now, however, that outside work is largely stopped, the odd hours should be turned to putting the farm machinery in shape. Certainly the spraying apparatus should be thoroughly overhauled in readiness for the coddling moth and apple leaf roller. On farms where power pumps exist, it is highly important that the gasoline engine be put in good running order before the day for spraying arrives.

Now is a good time to construct wire brush drags for the alfalfa weevil so that valuable time later need not be taken for this purpose. The Department of Entomology of the Utah Agricultural College will be glad to furnish detailed instructions concerning the control of the weevil and, in fact any other distructive insects of this region.

MAINTENANCE FOR ADULT FOR YEAR FOUND

It costs $176.00 a year to maintain one adult for one year on the average American farm, according to investigations conducted by Mr. Tracy Abell, instructor in horticulture at the Utah Agricultural College. Mr. Abel has found that it costs to keep the average adult, $46 in labor, $28 for house rent, $22 for groceries, $21 for dairy products, $2 for pork, $12 for poultry and eggs, $13 for fuel, $10 for vegetables, $6 for fruit and $6 for beef. Another very interesting fact shown by Mr. Abell's investigation is that 57.3 per cent of the food consumed in a year by the average adult on the average American farm is in the form of animal products, either meat, milk, butter, cheese, poultry, or eggs. Groceries make 24.8 per cent of the total, vegetables 11.5 per cent and fruits 6.3 per cent.

These figures are necessarily based on pre-war statistics.

ABOUT THE FARM

Dr. W. E. Carrol, U. A. C.

Don't starve an animal through the winter, feed him through. Now that the snow has come particular care should be taken that the stock are kept in good condition. It is very easy to let the animals get in poor form. A little cheap feed will generally prevent this. Especially should the young animals be kept growing during the winter. This is particularly true about the colt. If you expect to make a good horse out of him, feed him well through the winter.

Between now and the opening of spring work is a good time to put the harnesses in proper condition. Clean and oil them carefully. This not only preserves them, but gives your outfit a much better appearance.

If you expect any sows to farrow during the cold weather, be sure that your pig pen is in good tight condition and clean. Keep a little bedding in the pen to keep the little pigs warm, but do not get so much in that they will become covered up and crushed by their mother.

The long winter evenings offer excellent opportunities to the farmer to read. Bulletins that were tucked away during the summer months because of the rush of work can well be brought out now and read carefully. The farm papers can be well digested. And it will not be out of place if the farmer read a little on present day politics, economics, history, or even a good novel.

WHEN PRICES ARE HIGH *and* LABOR IS SHORT

the farmer MUST save time and effort, not only in producing, but in hauling. The larger the load and the faster the trip to market, the greater the profit.

Good roads have always helped the farmer. Now they are indispensable. Farm labor is scarce. Wages are high. Every hour wasted on the highway cuts down output and eats a hole in profits.

What the farmer needs is not a patch of hard road here and there, but a connected system of hard roads putting him in easy reach of his markets. And to get the best prices he needs **roads that stay good 365 days a year.**

There is no reason why farming communities should not have perfect systems of permanent highways. It is entirely up to them. The roads can be built in two or three seasons. When the cost is spread over fifteen or twenty years the annual tax for both interest and principal is only a few cents per acre. In Vermilion County, Illinois, for example, a magnificent concrete system is being built and the annual tax is only about 8c per acre per year, for 20 years, which covers the interest and gradually pays off the debt.

The farmer should act now in getting road plans under way to further his own interests. Systems of permanent highways benefit everyone, but to the farmer they are *indispensable.*

PORTLAND CEMENT ASSOCIATION

Offices at

ATLANTA, CHICAGO, DALLAS, DENVER, INDIANAPOLIS, KANSAS CITY, MILWAUKEE, MINNEAPOLIS, NEW YORK, PARKERSBURG, PITTSBURGH, SALT LAKE CITY, SAN FRANCISCO, SEATTLE, WASHINGTON

CONCRETE FOR PERMANENCE

Water-Proof Your Harness

It's just as important to keep your harnesses tough and pliable with a good oil as it is to lubricate any of your farm machinery.

DUCK-BACK Harness Oil

Will add years of service to your harnesses, and keep up their good appearance. Don't be without a can. Order it from your dealer today.

Utah Oil Refining Co.

Refiners

Salt Lake City, Utah.

TWO DEPARTMENTS OF OUR BUSINESS WHICH ARE VALUABLE TO THE STOCKMAN AND RANCHER

FEED—SEED

COTTONSEED CAKE
CORN, BARLEY
OATS

ALFALFA
CLOVER, GRASS SEED
SEED GRAIN

Prepare now for your spring seeding, while the choicest stocks are available. Any quantity from a pound to a carload.

BAILEY & SONS CO.

61-63 E. SECOND SOUTH.

SALT LAKE CITY, UTAH.

"GREASE" THE BULLETS

Fat plus lye makes glycerine
Glycerine plus nitric and sulphuric acid makes nitroglycerine.
HOGS PLUS CORN MAKE FAT.

ESTABLISHED 1904

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

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Livestock Men Hold Annual Conventions

Address of President I. T. Pryor of the American National Livestock Association.

Soon after war was declared President Wilson made a strong appeal to farmers and stockmen to increase the production of food products. He urged congress to enact suitable legislation for stimulating such production, conserving foods and improving methods of distribution. After lengthy consideration, congress, on August 10, 1917, passed two bills. One was designed to stimulate production. It broadened the present duties and responsibilities of the department of agriculture in that respect. The other bill, known as the food administration bill, had as its prime function the control and regulation of the commercial distribution of foods, their conservation by consumers, and the elimination of waste.

U. S. Produces One-third.

The United States today produces one-third of the meat products of the civilized world, exclusive of China. Since the war commenced we have been exporting approximately 13 to 15 per cent of our production of hog products, and about 5 per cent of our beef products. Our exports of hog products have always constituted the largest percentage of meat experts; and they will likely continue in that proportion, at least so long as we raise the bulk of the world's corn crop.

The greatest need of our allies and their civilian population is hog products. For the purpose of increasing our production of hogs, the food administration established, until further notice, a minimum price on hogs. For next season's crop it is announced a ration based on the price of corn. That action was both timely and wise.

Another splendid act of the meat division of the food administration was to place all the meat packers under license, fixing their profits and exercising a supervision over their operations.

Industry Now Regulated.

They are now a regulated monopoly. This, I believe, will prove a long step in the right direction, provided our government will also see that fair and reasonable prices for livestock are paid by the monoply which it is regulating. Unless this is done, the producer will be worse off than before.

Farmers and stockmen are not lacking in patriotism; they loyally responded to the call for increased production. All that they ask is that the strong arm of our government protect them from the disasters which may now from abnormal production, or other causes over which they have no control. Such protection is imperative in order to insure that increased production which the government seeks. Consumers seem to be of the opinion that farmers and stockmen should raise all the food products needed, regardless of the price. The food administration can readily ascertain the average reasonable cost of producing the different kinds of livestock, and its plain duty is to exercise all the powers it possesses to see that such prices are paid as will cover the cost, with a reasonable profit.

Meat Situation Improved.

One of the first acts of the food administration was to inaugurate meatless days. This action was predicated upon the fear, supported by the statistics then obtainable, that this country might not have enough meat food products fully to supply the needs of our allies and for domestic consumption. The situation has materially changed since then. The number of cattle and sheep on feed and the prospects for the future seem to warrant the resumption of a more nearly normal dietary on beef, veal, mutton and lamb. The emergency as to those kinds of livestock has passed. This country has never exported any mutton or lamb, and comparatively few beef products in recent years, hog products representing more than three-fourths of the total of our meat exports at present. A greater domestic consumption of beef and mutton products would mean a larger surplus of pork products for our army and for the allies. This is what is needed. We have, therefore, asked the food administration to confine meatless days to pork products.

The agricultural and livestock industries of this country have arrived at a period in their history when organization and united action are imperative. The increased production of the farm and ranch is as important as the arming of our men in the field, if not more so.

Production and Patriotism.

The urgent need of the time is increased production of the necessities of life. The impression is gaining ground among the population of our cities, especially the manufacturing centers, that the farmers and ranchers are making exorbitant profits from the operation of the farms and ranches of this country. I fear that men high up in authority are lending a willing ear to this idea.

We are criticised as not being patriotic because, in such times as these, we want to produce livestock at a reasonable profit. In my opinion,

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Address by Joseph P. Cotton head of the Meat Division of the Food Administration.

Six months ago we cheered the war-cry that "the United States was in the war to the last man and the last dollar." And practically no one of us had any conception of what that phrase meant. The phrase represented an idea beyond our experience and our comprehension.

Since then the war map has changed. Russia has ceased to fight. The German offensive has approached Venice, there is a shortage of shipping; and, in the mobilization of our country for war, our transportation service has almost broken down. On top of all that comes a coal crisis. To the cattle growers and particularly the feeders, the first real hardship came in the prices of feed and the difficulties of labor, and now sharply in the market prices for high grade cattle and the shortage of feeds at any price.

Some of us think of these hardships as a result of mismanagement somewhere—some failure of government, some greed of a middleman, some profiteering by a retailer; and we want some government action taken which will clear it all up and leave the livestock industry alone while the armies in France fight it out. There never was a more fundamental misconception.

The existing hardships and the future sacrifices of the livestock industry are caused first and chiefly by the war, as definitely and certainly as if there were a Zeppelin overhead dropping bombs on Salt Lake City, or a Prussian army ravaging the corn belt. The sacrifices you are making are sacrifices to the Prussians.

The war cannot be won without hardships to this industry and every other, and it will be won just because you are willing, in the face of hardship, to tighten your belts and go forward in your work of provisioning the fighters and the workers on the other side, and the lesson is fortunate in that it binds the whole people together, makes them forget their private feuds and gives them that courage and the determination to win which will finally bring victory. You are just getting the first taste of what it means to fight a war to the last man and the last dollar.

I am not sent here to talk patriotism. There is not and never will be any question of the patriotism of the livestock industry represented here. I am sent here by the Food Administration to talk over with you the mobilization of your industry for war service. I bring no promise of miracles, no word of a soverign remedy to keep the industry for all hardship and sacrifice. We are here only to consider, simply and wisely and without illusion, how we can best organize first, that the war against the Prussian go on with full force, second, that the livestock industry be called on for no needless or foolish sacrifice. That is the real point. Sacrifices you must make. Let us make sure that the sacrifices you are called on to make help the country and the war. It is not a question of doing your share, for each man's share is all he can give, but you must not be asked for more than you have strength to do.

Let us briefly review the situation of livestock industry in the war. Speaking generally, the year ending last November was a profitable year for the industry. In the Fall we saw unexampled high prices to the producer and the consumer (a bad thing for the industry) and heavy purchases of feeder stock bought at the same high prices is competition with the packers. Since then soft corn and high prices in competition with the feeds have made many of your ventures in buying feeder stock unprofitable.

Some of these purchases of feeder stock were speculation and will show losses when the stock is marketed. We cannot consider any policy which has for its purpose saving from loss every purchase of feeder stock last Fall. That is impossible, but we must work out some policy that will avoid any loss that will cripple the feeding industry. The feeding industry and the livestock industry as a whole, must go on and keep up production and to do that, they must generally be able to work with confidence that they will get a fair profit.

Let us see what the Government policies in this situation have been and whether they are wise. First, there has been a great drive, headed by the Department of Agriculture, for increased production, particularly on hogs. There is no question about the wisdom of that—we were short of hogs in the Fall. The Food Administration aided by its corn ratio and by its policy in stabilizing the hog price and its policy in placing the minimum of $15.50 for hogs on the Chicago market.

That is a fair minimum. It has been held to this date.

I do not expect to change it in the immediate future, and we expect that we can hold it. And our expectation is at this time backed by buying orders for export sufficient, we think, to handle this winter's run of hogs, even if it be large. Our advice to the industry now is, CONSERVE YOUR

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Nine Dollars a Ton For Sugar Beets This Year

The beet growers are to receive nine dollars a ton for sugar beets this year. This was decided upon by the committee who were representing the farmers of the State and representatives of the sugar manufacturers.

For four days and nights these men have been together to discuss this important problem. At the call of President D. D. McKay each county sent a representative to the meeting after the cost of producing sugar beets had been discussed in the local bureaus and at a county meeting. Every sugar factory in the State was represented with the exception of one.

The price agreed upon at the conference was nine dollars a ton flat and if the government paid a higher price for sugar than the present one of $7.45 at seaboard points less 2 percent, the farmers were to receive one half of the advance over the present price.

Other things pertaining to the sugar beet business were discussed, such as the handling of the by-products like pulp and syrup. In all these discussions a splendid spirit of fairness was expressed by both the farmers and the sugar people.

The final acceptance of the price by the directors of the different companies will be made within a few days. The sugar companies representatives have recommended that their directors approve of the decision of the conference and they believe they will in view of war conditions.

The cost of growing beets and the cost of manufacturing sugar was carefully gone into in every detail.

D. D. McKay, president of the state farm bureau, at the conclusion of the deliberations, took occasion to highly compliment J. W. Jones of the United States department of agriculture and J. A. Brock of the U. S. food administration, for the excellent work done by them in connection with the settlement of the difficulties that had arisen

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DAIRYING

THE STERLING WORTH OF THE GOOD DAIRY COW

For the feed consumed, the dairy cow produces about four times the food value in milk that the steer or sheep do in meat, therefore in many European countries and even in the eastern states, when food production became critical, it is easy to see why meat animals gave place largely to the dairy cow as a source of animal food. This is of necessity coming to pass to quite an extent in the central states at the present time and is likely to remain.

There is no better way that the pasture of much of our rough and untillable land can be utilized than by keeping dairy cows. This, together with a large amount of rough feed found growing about the fences of grain fields, the scattering left in the field from small grain, fall pasture from clover seeding, and also the aftermath in the meadow, as well as a large amount of roughage and occasionally some unsalable grain, can be utilized best by feeding to livestock, and there is no better kind of livestock for this purpose than the dairy cow, because, as was said, she produces from this feed several times as much human food as does the steer or sheep. But this does not mean that any kind of milk production or all kinds of milk production are or will be profitable. Present conditions make imperative the elimination of all poor cows and heifers, but at the same time sound a warning against the slaughter of those which are productive, for the need of more good, efficient cows grows greater every day. Dairy farming now is up against the real test which haphazard dairying cannot withstand. There is but one wise way for dairymen to move at present and that is to weigh and test the milk of every cow in the herd often enough to determine her production, and then hang on to the good cows and their heifers and send the poor ones to the butcher.

In a little circular just published by the U. S. Department of Agriculture—"Wasters the Leaks in a Nation's Strength"—it is shown that if each family in the United States wasted one-half cup of milk per day it would mean over 228,000,000 gallons annually or the total product of 400,000 cows for a year, and if each family wasted one pat of butter, 1-64 lb.) per day it would make 114,000,000 pounds per year or the product of over one-half million cows.

Tremendous as these wastes are, which the Department of Agriculture has wisely called to the attention of the public, they are small indeed by the side of the waste from keeping the poorest one-third of the cows in the United States. These 7,000,000 poor cows that actually lack, under normal conditions, over $7 each of paying market price for their feed and care, consume the equivalent in feed of the producing capacity of the whole fertile state of Illinois and lack over $50,000,000 of paying for this and their keep. In contrast with this the best third not only pay for their feed and keep but make a clear profit of over $190,000,000 annually.

It is estimated that one-sixth of the milk produced by the cows in the United States is used for the food of babies and children. This would mean that the product of 3 2-3 million of cows goes for this important purpose alone in the United States.

The warring countries of Europe have suffered tremendously from the lack of dairy products. Our government hopes to profit by the experiences of our allies and guards against making the same mistakes, and certainly we should take every precaution to prevent such a catastrophe as a severe scarcity of dairy products. Sending our good dairy stock to the shambles must produce this condition not only during the war but necessarily for several years following, inasmuch as a good dairy herd is years in the making. This is more especially true when it is necessary to start with cows of medium or low production. It will certainly pay in the long run to keep all good cows and well bred heifers and feed and care for them well.

The only proper view to take of a question like this is the long view and from the long time standpoint; sacrificing good cows and heifers that have taken the hard and careful work of past generations to bring into being, must result in a great loss, not only to the individual dairyman and the dairy interests, but also to the country at large.

The good, efficient dairy cow is bound to endure and as we have comparatively few of this quality it is just as essential to a wise policy of conservation and the economical support of the nations that good cows and heifers be not sacrificed as it is that the producer be no longer kept or food thrown out of the back door. We need to save nothing in all agricultural production more than the good, high producing cow. There have long been good cows, great producers, and long lived, but their worth has been little realized or appreciated by their owners, because it has been concealed by the poor cows in the same herd.

If every dairy farmer is to do his part for the nation, he must realize clearly the real folly of keeping poor cows, and so prevent the great and sinful waste of profitless human toil.

It is nothing short of a calamity to continue keeping poor cows and raising their heifers in these times of high feed prices and short food supply, and it is an even greater calamity to sacrifice the good, high producing cows and their heifers, for never have we needed good cows so much as now.—Wilber J. Fraser, University of Illinois.

PERSISTENT MILKERS ARE MOST PROFITABLE

Persistent milkers—the kind that milk well for a whole year, not the type that yield abundantly at first and then soon drop down in production—are the winners in the long run. The steady cow is usually the most profitable one.

Some cows in dairy work have yielded considerably above the average at the first of their lactation periods, but within two or three months their yield would fall nearly a third and by the end of the period would be only a fourth of the original production. The average daily yield for the period was found to be more than seven pounds less than that of cows having a comparatively uniform record from month to month.

PARAFFIN A HELP

To drive nails into plaster or soft wood readily and without splitting the wood or cracking the plaster dip them in melted paraffin. Any kind of thick grease helps but the parffin is much better.

13 TO 1

Is the government schedule for the 1918 pig crop.

Are we going to get our share?

Looking Forward into 1918

While there is much in the way of uncertainty, one thing is sure—close association with a strong bank having a stable policy will be of benefit to you.

This bank has been giving dependable service to customers for nearly 59 years.

Take up with one of our officers now the advisability of bringing your account here.

Walker Brothers Bankers
SALT LAKE CITY

"This is for you, girls!

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed *to a trace* when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed *faster* when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight *tube* with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

Sharples Separator Co. - West Chester, Pa.

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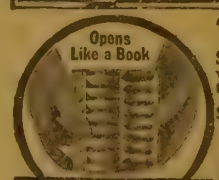

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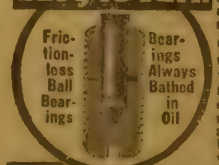

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up to our big 800 pound capacity machine shown here—all sold at similar low prices and on our liberal terms of **only $2 down and a year to pay.** Every machine guaranteed a lifetime against defects in material and workmanship.

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You can have 30 days' FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct-from-factory offer. Buy direct and save money. Write today.

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VALUE OF WINDBREAKS

L. H. Cobb.

When windbreaks and shelter belts are better understood they will become more popular. There is a tendency on the part of many to begrudge the trees the room they take, not realizing that no space on the farm will give more profit, especially if utilized to the full extent.

The house, the barns, and feedlots, and the orchard and garden should be protected by good windbreaks, and I believe the time will come when most farms will have a shelter belt surrounding them, or at least on the side of the prevailing winds. A row of walnut trees grown by giving the young trees good culture will produce trees that will stop the force of the winds and prevent soil blowing and provide snow covers for the winter. The windbreaks around the orchard and buildings should be more dense, and here evergreens will serve a good purpose.

There are several reasons why the orchard is benefited by the windbreak. It prevents the evaporation of moisture from the soil and from the limbs of the trees; it avoids the breaking of overloaded limbs, and prevents fruit being blown off the trees to so great an extent; it permits better fertilization of the blooms, for the petals are not blown away so soon, and the fertilizing elements destroyed before bees can fly to pollenize the blooms. I have seen weeks when the wind blew so hard that bees could hardly fly most of the time, and distant orchards were not visited. On dry winters many trees are injured by the moisture being taken from the branches by the dry winds. This is one of the insidious injuries that we do not expect or recognize, but it is very common, nevertheless.

Houses protected by a windbreak will not be so cold or take so much fuel to keep them warm as will houses exposed to the full force of northwest winds. I suppose everyone has noticed how much more fuel it took to keep a house warm when the wind blew hard around it than when it was still. Of course a windbreak will not be the same as when no wind is blowing, but there will be a wonderful difference in the effect where the house is protected from what it would be if unprotected. A dense windbreak will throw the current upward and it will pass over the house and not come down again for some distance, so the protection is for the whole yard. This is true of the barns and feedlots also. A windberak will keep the animals much warmer. It will give them a chance to get outside in the air without suffering, for it is the wind that makes the cold so unbearable to stock. Where fuel is required to overcome the extra cold in the house feed is needed in the barn. There is not the slightest doubt that a good dense windbreak will save a goodly sum in fuel and feed every year, and the growing timber is increasing in value each season. No farm would suffer for wood or posts if a good shelter belt surrounded the farm and heavy windbreaks of mixed evergreens and deciduous trees protected the orchards and buildings.

Deciduous trees are taller and will break the force of the wind and direct the current higher and carry it further than the evergreens, but the evergreens will form a closer mass at the base and be more effectual in stopping the wind entirely than will the deciduous trees. This is the reason I would advise the planting of a row of Norway spruce or Scotch pine on the outside and then two or three rows of maples, or other desirable forest trees inside. Select the trees that will give the best service in addition to the protection from wind. It may be that a thickly planted catalpa grove would be more profitable for you than any other tree to be planted inside the evergreen belt. I have seen some fine catalpas grown when set three or four feet and allowed to grow up as they pleased and only be thinned out as they were dwarfed or killed by the stronger—nature's plan of growing forest. Other trees grow well in the same manner, for I saw a large piece of bottom land covered with native growth that had all kinds of trees growing so close togther tuat they stretched upward as slender and straight as telephone poles. Such a grove would supply fuel right along without any sacrifice to the grove itself, and do it for years.

While only a local effect will be realized when but few shelterbelts and windbreaks are grown in a country a very decided general effect would be realized if a majority of the farmers would plant. The winds would decrease in velocity, evaporation from the fields would be lessened, for the trees would give off much moisture that more slowly moving air. Soil moisture would be conserved to a greater extent, and climatic changes would result. Forests in their place are of great value to a country.

TERMS USED IN MEASURING WATER

The volume of water flowing in a stream, called the "run-off" or "discharge," is expressed in various terms, which, however, may be divided into two groups—those representing rate of flow and those representing actual quantity of water. The rate of flow is generally expressed as "second feet" and abbreviation for cubic feet per second, the unit used for measuring flowing water, as "gallons per minute," the unit used in connection with pumping and city water supply; as "miner's inch," the unit used by miners and irrigators for measuring water that passes through an oifice one inch square under a head that varies locally; and as second feet per square mile," the unit used to represent the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

The actual quantity of water is expressed by the terms "run-off in "inches," "acre-feet" and "million gallons." "Runoff in inches" expresses the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface; it is used for comparing the run-off with rainfall. "Acre-foot" which is used commonly in connection with storage for irrigation, is the quantity of water required to cover an acre to the depth of one-foot—that is, 43,560 cubic feet.

In the territory of Hawaii the unit most commonly used in measuring the flow of water is "million gallons." This unit is used not only to indicate a rate of flow ("million gallons per day") but an actual quantity of water stored in a reservoir. —United States geological survey, department of the interior.

One rat will eat or spoil 4 bushels of grain a year. It costs $2 or $3 a year to feed a rat on your place.

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We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
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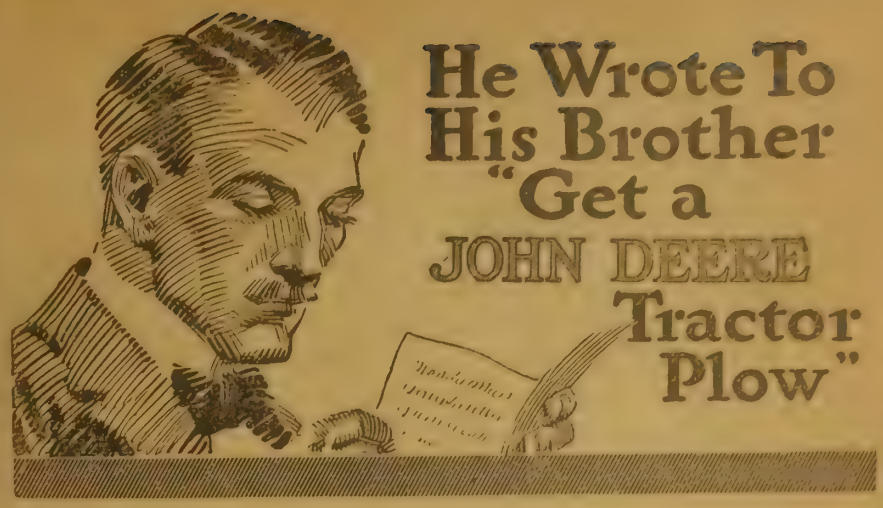
Check or money order must accompany order.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.



"You ask me what I think about your buying a tractor.

"Judging by my own experience, I'll say that you have done the right thing. But I want to give you some good advice that a neighbor gave me when I decided on tractor farming. 'Remember,' he said, 'that the tractor only pulls. It's the plow that makes the seed-bed.'

"You ought to get the best plow you can buy to use with your tractor. That's just as important as buying the tractor itself.

"I bought a John Deere plow when I bought my tractor and I am mighty well pleased with the work it does. It is unusually strong and light running. It saves fuel, and fuel costs a good deal these days. It doesn't have any chains and sprockets to cause trouble. It is so easily operated and dependable that I can keep my attention on the tractor while plowing. And best of all, it leaves a perfect job of plowing behind it. The best advice I can give you in connection with your tractor is 'Get a John Deere Plow.'"

And that is the best advice anyone can give to a man who intends to buy, or already owns, a tractor—get a

JOHN DEERE TRACTOR PLOW

Successfully Used With Any Standard Tractor

Makes a Good Tractor Pay

A John Deere Tractor Plow repeats its first great value to you year after year. It continues to make better seed beds. Its use means repeated plow profits for you instead of repeated plow investments by you. Its seed bed-making service makes a good tractor pay.

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A John Deere Tractor Plow in your fields saves time, labor, fuel and plow up-keep. You operate it from the tractor seat. It requires little or no attention as you drive down the field. Its extra-quality bottoms scour perfectly. Its extra clearance prevents clogging. In turning at the end of the field, a slight pull on the trip rope causes the powerful power lift to raise the bottoms high and level.

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You can use a John Deere Tractor Plow successfully with any standard tractor. If your tractor is small, get the No. 5, carrying two to three bottoms. If your tractor is of the larger type, get the No. 6, carrying three or four bottoms. Insist on a No. 5 or No. 6—see them at your John Deere dealer's.

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Write today for our free booklet describing both the No. 5 and No. 6 John Deere Tractor Plows. It has a message on tractor plow value that you will find profitable reading. Ask also for our big free book, "Better Farm Implements and How to Use Them." Its 156 pages describe a *full line* of labor-saving implements—tells how to adjust and operate many of them. It is full of practical information that will help you. Use it as a reference book. Worth dollars.

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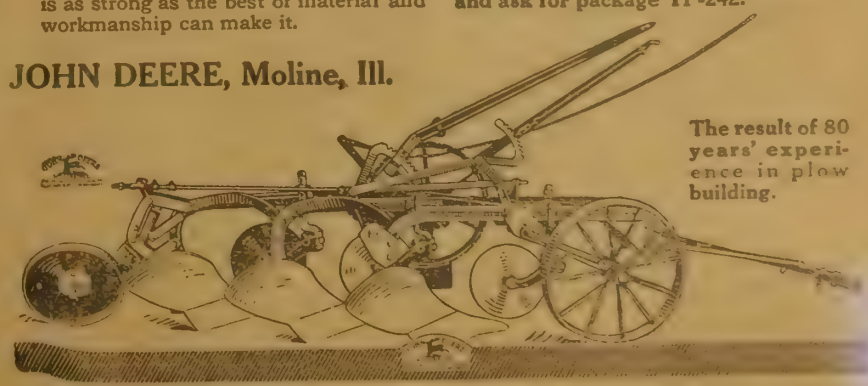

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Use more potatoes and save the wheat for our allies. They are now pleading for us to send them more wheat.

Lack of farm labor this year will make machinery a positive necessity. Will you want any—now is the time to order what you will need.

Your old machinery can be made a good asset just now. Clean it up and make all necessary repairs. You can make and save money this way.

Store some ice for use during the summer. This is one way you can conserve food. Good clean ice is a very nice thing to have when the days are long and hot.

Don't forget to keep the pig pens, chicken coops and the barn clean. After you have given them a good cleaning out sprinkle some lime freely, it will help to dry them up and disinfect.

The biggest thing today before the American people is to win the war. Business is not and should not be "as usual." Every loyal citizen is adapting his work, his farm practice to help win the war.

Buy your garden seeds early. Reports indicate a shortage of seed of some of the leading vegetable crops. Plan now your garden and field crops and secure the best seeds as soon as possible.

Are we eating less potatoes this year because the price is so much lower. When potatoes sold at three or four dollars a bushel last spring every one seemed to want them. Now they are cheap, dealers claim that people are not eating so many. Why?

We are asked to increase the poultry on the farm. How about your breeding stock—now is the time to select or buy them, you can have a better choice. Order your incubators now. Put the ones you have in the best of working order. In other words, plan now to increase the poultry products.

BREED MORE SOWS

Increased production of hogs is one of the needs of our government. It is not too late to breed sows for spring farrow. May is a good month for pigs to come. The mild weather and the early alfalfa pastures all make for rapid growth. Every one who has sows or gilts that can be bred, should do so now. A profitable selling price is assured the grower. There is such a need for more hogs that every affort should be made to increase the output next season. Put every available sow to work it means profit to you and a help to the nation.

THE FARMERS RESPONSIBILITY

On the front page of this issue, President E. G. Peterson of the Agricultural College sends a message to the farmers of our State, telling them of their responsibility during the war.

The Utah Farmer is pleased to carry such a message to the farmers. After you have read it, think about it and read it again. Never before has the farmer been called to such responsibilities.

Thus far we have answered every call that our government has made of us. Dr. Peterson speaks for the government, his responsibility is increased production.

The farmers of Utah will answer his strong appeal, with an increase of wheat, meats and sugar beets.

HAVE YOU POTATOES FOR SALE?

If you have any potatoes to sell we suggest you spend a little time and get posted as to market conditions. Do not let some fellow put one over you and influence you to sell at too low a price. It is just as important, however, that you do not hold out to long and then have to sell at reduced prices.

The thing to do is get posted. The government is sending out daily market reports ,your county agent should be receiving them. There is a large surplus of potatoes and at present a fair demand. Unless some thought and planning is given to the marketing of our potatoes, farmers are not a going to secure what they should for them.

MANY SILOS FOR 1918.

Last year we built a great many silos, one small community built 27 of them. Every owner of a silo is a booster. They help to save the hay and reduce the cost of feeding. Silage helps to make a balanced ration. Better results are obtained from feeding the right kind of a ration to dairy and beef cattle.

Already plans are being made to build a number of silos this year, judging from the inquires and interest being shown.

We need more livestock on our farms and when cheap feed can be secured with a silo there are no reasons why we should not increase the number.

LIVESTOCK WILL HELP WIN THE WAR

If the sentiment expressed by the livestock men at their conventions is carried out, and we believe it will, there will be an increased production this year. There were many expressions of loyality by these men and they will do all in their power to help win the war.

We are printing this week some of the talks given at Salt Lake City. More will be given next week.

Our government is making a strong plea for more wheat, meats and sugar and they are going to have the support and help of the livestock men for the increase of meats they are asking for.

PLANTING WEED SEEDS

When you think about it, it seems rather a poor policy to plant weed seeds. Yet some farmers continue the practice of weed seeding year after year. There are few farms but what have plenty of weeds growing about the place without sowing any more.

Knowing as we do that so many weeds are on the farm there are still some farmers who plant weed seeds. Nearly all small grain fields have a certain amount of weeds growing in them and the seeds are threshed with the grain and will be planted again unless they are taken out by some method.

Clean and reclean your seed. Now is the time to do it before the rush of spring work begins. It will pay every farmer to take the time necessary to clean all his seeds from weed seeds. We want increased production this is one way to get it.

SUGAR BEET PRICE FOR 1918

In answer to the call of President D. D. McKay of the State Farm Bureau, representatives from the different counties met at Logan to discuss with the sugar manufacturers the price of sugar beets for 1918. For four days and nights they debated this important question. The costs of grower and manufacturer was considered. The sugar factory just starting and their ability to compete with the older organizations were all taken into consideration.

When we think of these men taking four days and nights to decide the question, we ought to feel that they have not acted in haste but have wisely decided and every farmer should accept of their work and feel that all things being considered they did what was fair to all concerned. Our government is pleading for more sugar the need is urgent. Now that the price has been decided every one should grow all the sugar beets possible consistance with good farm practice.

NAME YOUR FARM AND ADVERTISE

Farmers produce something to sell, it may be livestock, grains or other things. How well your products are known will help make the demand for them. Advertise what you produce, let your neighbors know what you have to sell.

One way to do this advertising is to name your farm then go to their local publishers and have some attractive letterheads printed. These letterheads should contain the name of the farm and its owner and any other fact that it is desired to advertise, such as the kind of livestock, poultry, seed or grains raised. When you produce more than local demand will buy, then you should use your farm paper.

Many farmers have something to sell and they do not know where to place it and at the same time there are others who are wanting to know where they can buy just such a product.

Today we received an inquiry from a man who wants to buy 500 pullets, we did not know where to send him to buy them, there are, no doubt, many places where they could be purchased.

Production is one thing; selling at a profit is another. No other one thing will help you find a good market like advertising.

FOOD WILL WIN THE WAR

Food is really more essential than guns and ammunitions. This is why we are asked to produce more food products.

What could an army do if they were weak from hunger in putting up an efficient fight? They might have all kind of implements of war and well equipped to use them, but lack of food would prevent a successful effort.

Not only must our soldiers have plenty of food but the ones at home must be well nourished. Upon the farmers rest an equal responsibility with the soldiers in this great war.

The Food Administration realize this, they are not asking us to go hungry but they ask as Mr. Hoover says:

"Go back to the simple life, be contented with simple food, simple pleasures, simple clothes. Work hard, pray hard, play hard. Work, eat, recreate and sleep. Do it all courageously. We have a victory to win."

If food is going to help win the war then we have an important thing to do this year. Better preparation of the seed bed, better seed are just as important to increased production as planting more acres.

Of course we are going to work harder, but then we are not doing as much as our young men who are working hard and willing to give their lives.

More food we must have to win the war.

RESOLUTION PASSED BY JOINT CONFERENCE OF FARMERS AT IDAHO FALLS.

During last week at Idaho Falls a number of farmer's organization have been holding meetings and conventions at one of these meetings the following resolution was passed:

Whereas, the United States Government is calling for increased sugar production, as a war necessity, and

Whereas, the state of Idaho now has seven beet sugar factories, fully equipped, which last season operated at only 55 per cent of their maximum capacity, yielding enough sugar to feed 1,200,000 soldiers for an entire year, and

Whereas, there is sufficient land tributary to these factories that is suitable for growing profitable yields of sugar beets, and there is sufficient farm equipment, and also a disposition on the part of the farmers to respond to the call for increased beet tonnage, not merely for the direct value of the beet crop, but also as a means of farther developing and sustaining the livestock industry through the larger and more profitable use of tops and crowns, beet pulp and molasses,—thus substantially responding to the call for increased meat production, and we also recognize the value of the crop as an important factor in maintaining soil fertility, and we hereby assure the United States Food Administration that Idaho is prepared and willing to increase the beet acreage of their state, to the extent of furnishing full sugar rations for an entire year, and for each succeeding year during the war, for all United States soldiers, even if the number be increased to a total of 2,000,000 men, and

Whereas, the price of sugar to the consumer has advanced less, relatively, than has the price of other important food products, therefore

Be it resolved that we ask the assistance of the Government in providing labor from various sources for the increased production and also that the price of sugar be raised sufficient to permit the beet sugar factories to pay a higher price for beets commensurate with the increased expenditure for labor and supplies, with the understanding that the increased price of sugar shall be used to stimulate increased beet tonnage, which means increased sugar, by applying the said increase to the price paid to the grower for beets, and .

Be it further resolved that with these special helps, we hereby pledge our assistance through the County Farm Bureaus to assist in subscribing the increased acreage.

Hallowell, Jones & Donald

Wool Merchants

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201-202 McIntrye Bldg.,
Telephone Wasatch 2267.
Salt Lake City, Utah.
J. R. EDGEHEILL, Agt.
F. A. MASON, Agent.
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Cut over lands, well grassed, good running water for sheep ranches. Low introductory prices, lease—option terms. Write

THE UPPER PENINSULA DEVELOPMENT BUREAU
Con. Nat'l. Bank Bldg., Salt Lake City

IRON-AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman M'f'g Co., Box 83 B, Grenloch, N. J.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

REGARDING THE "RUNTS"

It is unfortunate perhaps that with runty pigs that you do not have an abundance of milk, whole, skim or buttermilk—the latter two being preferred because of economical reasons. However, in the absence of this milk tankage of the 60 per cent protein grade is one of the best substitutes that I know. This combined with wheat middlings will be a great help in pulling these runty pigs out of the rut. This suggestion based upon experience may be valuable. Put these pigs on a nice green pasture, preferably alfalfa, but clover is practically as good, and give them in separate self-feeders these feeds: shelled corn, tankage of the 60 per cent protein grade, wheat middlings and rock salt.

These pigs will eat largely of corn but they will balance their ration quite well with the tankage and middlings along with the grass, and in a short time you should begin to see improvement in them. If it is at all possible for you to give them a little milk this will be fine even tho it is in limited quantities. This can be given to them separately in a trough once a day either morning or evening.

Of course, if you do not have either the alfalfa or clover pasture then rape is quite good, or nice fresh, succulent, green bluegrass will be a good substitute. If you have some cabbage that is in excess of that necessary for household use, a few heads of these thrown over daily will be of much value.

The oats had best be discarded from the ration inasmuch as they are too fibrous and "hully" and runty pigs should not be compelled to eat them. Of course, if you could grind these oats and sift the hulls out, then of course, the meats could be given the pigs with good results, otherwise not.

After a time when the pigs get nicely started you can take the middlings away from them and just let them have corn and tankage and salt, and then as they approach a heavy weight of a couple of hundred pounds then you could take the tankage away from them about 30 days before market, finishing on corn alone.

USE MILK, BUT SAVE IT

How can the consumer help the milk supply? By judicious use, good care, and by utilizing it in all its forms. That half cup of milk which was poured into the sink today because it was allowed to sour—it would have made a substantial amount of cottage cheese or could have been used in cooking.

In many households quite a little milk is wasted—left uncovered in glasses—regarded useless because the cream has been skimmed off, allowed to sour—poured down the sink or thrown away. Half a cup of milk—whole, skimmed or sour—seemingly a trifling matter, hardly worth the trouble to keep or use.

But if every one of the twenty million homes should waste on the average one-half cup daily, it would mean 2,500,000 quarts daily for the country—912,500,000 quarts a year—the total product of more than 400,000 cows. It takes a lot of grass and grain to make that much milk and an army of people to produce and deliver it. Maybe this estimate is too high. Suppose that one-half cup is wasted in only one out of 100 homes. The waste which this would make is still intolerable when milk is so nutritious, when skim milk can be used in making such wholesome soups and cereal dishes, when sour milk can be used in bread making or for cottage cheese.

Food for our Allies is ammunition for the first line of defense.

Are You Doing Your Bit?

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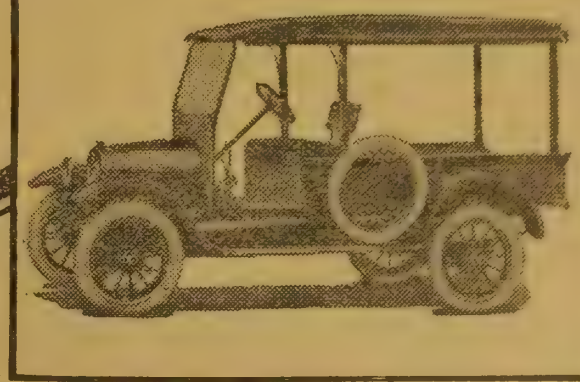
PLACE YOUR SEED ORDER EARLY

Vogeler Seed Company

SALT LAKE CITY, UTAH.



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That is why DEPENDABILITY is emphasized in the Buick Light Delivery Truck. To secure this dependability, the same high standards of scientific workmanship and rigidly tested materials that enter into the construction of Buick passenger cars are also found in this Buick truck.

The Buick valve-in-head motor insures ample power for every emergency and low gasoline consumption.

Stockmen and farmers throughout the west have found this light truck peculiarly adapted to their needs, and a big economizer of time and money.

Rated capacity is 1000 pounds. Price $895 delivered in Salt Lake.

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HOME

A WHOLE DINNER IN ONE DISH

The youngsters will like it.
Father will like it.
You will like it.

Your pocketbook will surely like it.
Your bodies can't help liking it.
"Uncle Sam" is bound to like it.

Everybody Will Like the One-dish Dinner. Why?

A dish hot and savory—good for work or play—that is why the father and the children will like it.

Easy to cook and serve—that is one reason why you will like it. Only one dish to cook, few plates to wash, steps saved.

Good, nourishing food—you can feel sure that you are feeding your family right if you give them this dinner. It contains all their bodies need to help them work and grow strong.

This dinner helps you do your part for our country. You can save wheat and meat to ship abroad. Our soldiers and Allies need them more than we do.

Fish Chowder

Rabbit, fowl, or any meat may be used instead of the fish, or tomatoes instead of milk. Carrots may be omitted.

1½ pounds fish (fresh, salt, or canned), 9 potatoes, peeled and cut in small pieces, 1 onion, sliced, 2 cups carrots cut in pieces, ¼ pound salt pork, 3 cups milk, pepper, 3 tablespoons flour.

Cut pork in small pieces and fry the chopped onion for five minutes. Put pork, onions, carrots, and potatoes in kettle and cover with boiling water. Cook until vegetables are tender. Mix three tablespoons of flour with one-half cup of the cold milk and stir in the liquid in the pot to thicken. Add the rest of the milk and the fish which has been removed from the bone and cut in small pieces. Cook until the fish is tender, about 10 minutes. Serve hot. You can omit salt pork and use a tablespoon of other fat.

Dried Peas With Rice and Tomatoes.

1½ cups rice, 2 cups dried peas, 6 onions, 1 tablespoon salt, ¼ teaspoon pepper, 2 cups tomato (fresh or canned).

Soak peas over night in two quarts of water. Cook until tender in water in which they soaked. Add rice, onions, tomato, and seasonings and cook 20 minutes.

Potted Hominy and Beef

Hominy is excellent to use as part of a one-dish dinner, if you have a fire in your stove so that you can cook it for a long time, or use a fireless cooker. Heat 1½ quarts of water to boiling; add 1 teaspoon of salt and 2 cups of hominy which has been soaked overnight. Cook in a double boiler for four hours or in the fireless cooker overnight. This makes 5 cups. This recipe may be increased and enough cooked in different ways for several meals. Hominy is excellent combined with dried, canned, or fresh fish, or meat and vegetable left-overs may be used. Here is one combination

5 cups cooked hominy, 4 potatoes, 2 cups carrots, 1 teaspoon salt, ¼ pound dried beef, 2 cups milk, 2 tablespoons fat, 2 tablespoons flour.

Melt the fat, stir in the flour, add the cold milk, and mix well. Cook until it thickens. Cut the potatoes and carrots in dice, mix all the materials in a baking dish, and bake for one hour.

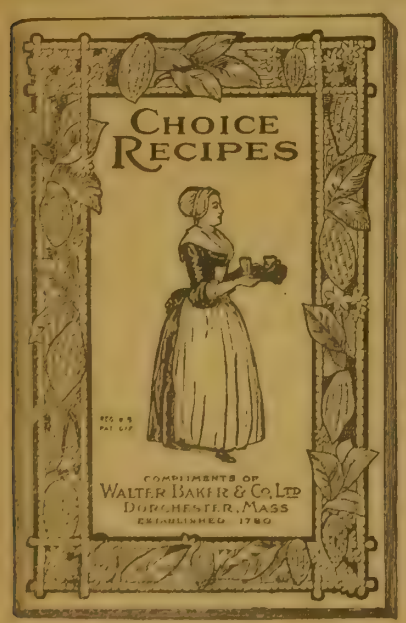
These dishes supply all five kinds of food. Each is enough for the whole dinner for a family of five. Eat them with bread and with fruit or jam for dessert. Then you will have all the five kinds of food your body needs. These five kinds are shown below.

The Five Food Groups.

1. Vegetables or fruits.
2. Milk, or cheese, or eggs, or fish, or meat, or beans.
3. Cereal: Corn, rice, oats, rye, or wheat.
4. Sirup or sugar.
5. Fat: Such as drippings, oleomargarine, oil, butter.

Choose something from each of these five groups every day.

SENT FREE



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and receive a copy of this little booklet, containing more than 150 recipes for the use of

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in the preparation of delicious drinks, dainty dishes and home-made candy.

EAT CEREALS TO REDUCE FOOD COSTS

The most practical means of reducing table expenses without decreasing the wholesomeness and adequacy of the diet lies in increased use of cereal foods, especially boiled grains, mushes and breads made of corn meal and cereals other than wheat.

Cereals contain most of the important food elements which the body needs and yet are comparatively inexpensive. They are primarily a source of starch, needed by the body to yield energy. They furnish also considerable quantities of protein, one of the most impotrant and usually one of the most expensive food elements, needed to build the body and keep it in repair. In addition, cereals furnish mineral matter, fats, fibre and, especially if part of the bran is left in, little-known substances which regulate body activities.

Cereals, therefore, may be used as the relatively inexpensixe basis for meals. It then becomes necessary only to eat with them comparatively small quantities of higher-priced foods to make up a proper balance among the needed elements.

Cereals Interchangeable

When animal foods or other nitrogenous foods, fruits, and vegetables also used in the diet, the various grains may be interchanged freely as availability, cost, of preference dictates. The starch of all the cereals is practically the same. Protein, fat, and mineral matter vary somewhat in the different kinds, but so slightly that the difference need not be considered in the odinary mixed diet. In such a diet, therefore, corn or oatmeal for example, may be satisfactorily substiuted for wheat when the latte is scarce, without detracting from the wholesomeness of the meals.

Forms of Cereal Food.

The most common form in which cereal food is consumed is bread. The food value of bread, however, comes from the cereal of which it is made, and it makes little difference whether we get our cereal ration in baked or boiled form. If cereals are to be made a more important feature of the diet, mushes and boiled grains, as well as baked doughs, should be eaten in greater quantity. Practically any of the cereals may be used in making some type of bread. Wheat has been most used because its gluten makes possible the raising of the dough with yeast. Flours and meals of the other grains, however, may be made into baking-powder breads and many of them can be substituted for some of the wheat flour in making yeast breads.

Breakfast foods should be chosen carefully if economy is desired, since the form in which the food is purchased largely determines the cost. Meals from which mushes may be made may be obtained for a few cents a pound, while specially prepared grains may cost up to 48 cents or even more per pound. Bulk breakfast cereals, such as oatmeal, commonly may be purchased at lower prices than the same kinds put up in cartons.

One way to lessen the cost of breakfast foods is to buy whole grains from a feed store and grind them coarsely in a coffee or other hand mill. The cracked grains, when salted properly, boiled thoroughly, and served with butter or sugar and cream or milk, make wholesome and palatable foods. These home-ground grains, used alone or with flour, also may be used satisfactorily in bread making. Boiled grains, such as rice, barley, corn meal, or hominy, may be used in the same way, or any of these may be combined into dishes with cheese, eggs or meat, which add both flavor and nitrogenous food elements.

We Must "Follow-Up"

The story of the Gallipoli withdrawal is a tale of inadequate support. Like Salamanders clinging to the red-hot bars of a fiery furnace, the boys of Australia and New Zealand clung to the slopes of Anzac. Desperately, heroically they clung. No troops under any circumstances ever displayed greater soldierly qualities or upheld more sacredly the best traditions of England's Army. But they had to withdraw because the "follow-up" was not there.

To some of us it has been given to march with the columns of troops that go to France. And to others it is given to wave Godspeed. But he who marches and he who stays is equally a citizen of the world's mightiest republic and equally responsible for its success in this greatest of undertakings.

Then let us at home turn from our flag waving and consider how necessary we are, how useful we must be. Those who go to fight cannot hope to win by naked bravery and we cannot hope to win unless every individual at home does *all* he can. We must have no Gallipoli.

The Bell System is only one of the myriad great and small industries which are co-operating that nothing be left undone to keep a constant, efficient stream of men, guns, ammunition, food, clothing and comforts flowing to the front.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

FOOD CONDITIONS THE WORLD OVER

Australian Wheat Prospects

Due chiefly to a shortage of labor at seeding time, the new wheat crop in South Australia is estimated at 26,000,000 bushels as compared with last year's crop of 43,000,000 bushels. Harvesting of the new crop has already commenced.

Official reports received by the United States Food Administration show 120,000,000 bushels of Australia's old wheat still in reserve but much is liable to damage from improper storage nor can it be marketed in Europe because of insufficient ships and the great distance. This condition prevailing in one of the worlds most important wheat-growing countries increases the responsibility of the United States for producing a large wheat crop this year.

THE POTATO SITUATION

"And how will you have your potatoes?"

Daily the question is asked by thousands of waiters in restaurants and cafes all over the country. Daily it is a question that is decided in the kitchens of American homes. The preferences are not important—so long as there are no calls for "German fried!" —but this fact is of vast concern, from a standpoint of war-winning efficiency; that the question isn't asked and isn't answered often enough. In other words we are not eating enough potatoes. We must increase our potato consumption, and eat less bread, thereby releasing more wheat for our armies and the armies of the allies.

In its final terms the potato situation is this: We now have on hand a great many more potatoes than we have ever had before. If we do not eat these potatoes during the winter and spring, before the new crop comes in, a considerable part of the supply will be wasted. If we do eat the potatoes now on hand we will add to the food supplies of the men who are fighting in France for our freedom.

To waste this big food supply of potatoes would be worse than a blunder. It would be a crime. But in Berlin it would be a huge joke. With an evil chuckle the all highest would say: "Ha! I won't have to defeat the Americans! They will defeat themselves! They know they can't win the war without enormous food supplies—and yet, after producing the greatest potato crop in their history they let it waste, they put it to no war use, they allow it to glut the market and thus discourage the producer from planting another such crop!' Oh! how delighted the Kaiser would be!

And the way to prevent him having that laugh at your expense—a laugh that might mean the end of your freedom and the death of your country—is for you to eat more potatoes and less bread; for you to market the potatoes you are holding in storage, to sell them gradually, during the winter and spring to get them moving; and, finally, for you to plant at least as many potatoes this year as you did last year.

Unwise and Unpatriotic.

It will be very unwise, and in effect it will be unpatriotic, no matter how innocent the intention may be, for either of the three factors—consumer, middleman, farmer—to fail in the performance of his part of this potato program—eat, sell, plant. If the consumer doesn't eat more potatoes, the middleman can't sell. If the middleman is hoarding and won't sell, the consumer can't increase his potato ration. And if the present potato surplus is not consumed this winter and spring the farmer will be reluctant to maintain a large potato acreage next year.

"And why is that so extraordinarily important?" some one may ask. For this reason—in the fall of 1918 we'll be in this war right up to our necks. Some things we're theorizing about now will be stern, everyday realities then. Every pound of food will count, and count much. If the farmer hasn't planted potatoes in the spring of 1918 we won't have potatoes in the fall of 1918. And without potatoes next winter quite a few of us may be hungry—because we must send wheat and nonperishables to the fighters first, and the civilians, for whom the soldiers are fighting, can eat what is left.

It is easy enough to say to the farmer "plant plenty of potatoes this year." But the way to be sure that he will do that is to eat, before time for planting another crop, the potatoes he has already produced—and to eat less bread the while. The way to be sure of a potato supply next winter is to loose the potatoes held in shortage now.

The Biggest Crop.

We produced last year the largest potato crop America has ever known, 442,536,000 bushels, according to the latest figures of the Bureau of Crop Estimates of the United States Department of Agriculture. The 1916 crop was only 286,953,000 bushels, while the average production from 1911 to 1915 was, in round numbers, 363,000,000 bushels. Thus, we have on hand this winter 155,583,000 bushels more than in 1916 and 78,536,000 bushels more than the average for the preceding years since 1910. We can't well send this potato surplus to Europe, but by eating it at home we can send other forms of food to the front. It should be remembered, in that connection, that America's consumption of potatoes has been below the average per capita consumption of other nations. It has been estimated by some authorities that we could very readily double our potato diet and be within the bounds of a healthful and desirable ration adjustment.

We should profit by the experience of the winter of 1914-15, which affords the nearest parallel to the present potato situation. Much of the 1914 crop was held in storage that winter, it moved into consumption slowly, and the result was that in the spring of 1915, as the new crop began to come in, the holders rushed to the market, glutted it, hammered down prices—and potatoes sold for 25 or 30 cents per barrel to starch factories. We must guard against a repetition of that experience next spring—and the only certain insurance against it is to cease hoarding potatoes, to market the present supply gradually through the winter, and to increase our potato consumption. Because of car shortage and transportation limitations each section should market as near to the point of production as possible.

The Food Administration has no power to fix potato prices, but it has and will exercise, if necessary, power to prevent unreasonable profits. It is now working upon a plan to exedite "acceptances" of potatoes and other perishable food products and to eliminate losses and delays caused by unjustified rejections by consignees. The Department of Agriculture and the Food Administration urge those who are holding potatoes to market them gradually and steadily, so as to sell out before the new crop comes in, and they urge everyone to eat more potatoes—and less bread.

TAKE CARE OF THE MILK

Here are ten suggestions which milk consumers could employ, not only to conserve the supply, but to guarantee a more wholesome product for the family:

1. Buy only the best milk obtainable. It is cheapest in the long run.
2. Consult the health department before selecting your milk dealer.
3. Buy only bottled milk if possible. Dipped milk is often dirty and deficient in cream.
4. Take milk into the house as soon as it is delivered, and place it in the refrigetrator immediately. Bacteria increases rapidly in milk which stands in the sun or warms up, and such milk will sour quickly.
5. Keep milk in the original bottle in the refrigerator until the moment of serving. Milk which has been poured from the bottle should not be returned to it.
6. Keep the bottle covered with a paper cap or an inverted tumbler, to prevent the entrance of flies and dust, which may carry dangerous bacteria in the milk.
7. Keep the refrigerator clean and sweet by means of proper drainage and frequent washing with scalding water and sal soda, since milk quickly absorbs unpleasant odors and becomes less palatable.
8. Wash milk bottles as soon as emptied, by rinsing first with lukewarm water and then with hot water. If there is an infectious disease in your house, do not return any bottles except with the knowledge of the health department and under conditions which it may prescribe.
9. Return empty bottles promptly, and do not use them for anything except milk. Remember that they are the property of the dealer and represent cash.
10. Remember that clean milk, properly cared for, is one of the best foods obtainable. It is nourishing, digestible, and usually economical.

No. 8 Spiral Wide Spreader
Latest in Harvester Spreaders

WE have added the **New No. 8** Spreader — spiral wide-spread, light-draft — to the **Low Corn King, Cloverleaf** and **20th Century** lines. We are in a position to suit exactly any farmer, whatever his previous spreader experience has been.

If you have not yet had an opportunity to study the features of the No. 8, the spreader for every average farm, the lightest-draft spreader made, write us and we will put you in touch with the dealer. No. 8 has the famous International spiral wide-spread that has thoroughly demonstrated its success as a wide spreader for all-around use. In addition, the **Low Corn King, Cloverleaf** and **20th Century** lines provide you with your choice of larger capacity spreaders, with the regular disk wide-spread (well known wherever spreaders are sold) or with the spiral spread on special order.

The **New No. 8** Spiral Wide Spreader and other **Low Corn King, Cloverleaf** and **20th Century** spreaders will go onto many thousands of farms this year. They are all light-draft, low-loading, easy-handling, built of steel—and satisfactory. It will pay you to write us for catalogues. Write the address below.

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If a chocolate pot does not happen to be handy—you use an ordinary stew-pan. It takes but a minute or two. And then—you have the most delicious of all food-beverages steaming hot, ready to serve.

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In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

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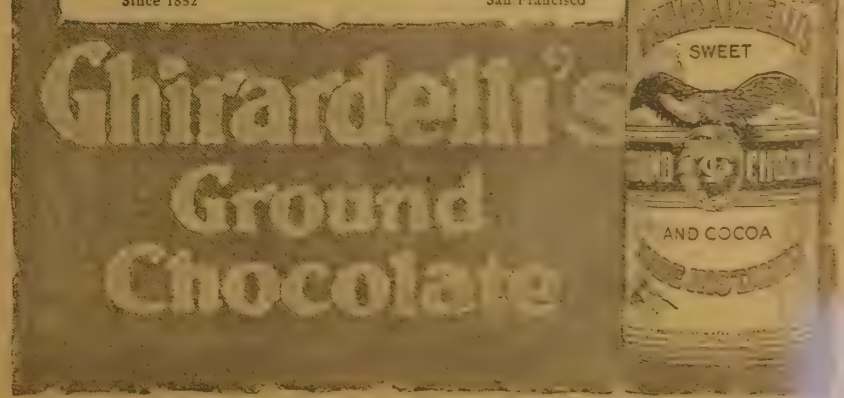


ADDRESS OF PRES. I. T. PRYOR OF THE AMERICAN NATIONAL LIVESTOCK ASSOCIATION

(Continued from page 3)

the first and highest proof of patriotism is to give our sons to the cause for which we are fighting; the second test is giving one's time without compensation, which many patriotic men and women are doing; the third is subscriptions to the Red Cross, the army Y. M. C. A. and Y. W. C. A.; and the last is the purchase of Liberty bonds. It would be an unfair test of patriotism to expect farmers and stockmen to produce at a loss that which our allies and our army must have. Give us a reasonable profit, and the test of our patriotism will come when we dispose of that profit; and I wager my existence that the farmer and stockman of this country will meet the issue in the right spirit.

Financial Support Necessary.

After two years of constant, effective and energetic work by the members of the market committee, I am glad to report that an investigation of the meat industry by the federal trade commission has been under way for some months.

If your market committee is to do effective work in the future, there must be no question about its financial support, and I heartily recommend that you respond liberally to its needs. It is extremely necessary that its plans should be carried to completion, for there is no other line of effort which will bring in greater financial returns to the members of this association. The system of control and regulation inaugurated by the food administration should be made permanent through the efforts and recommendations of the federal trade commission. In this way the evils we started out to correct may be completely eliminated.

The 640-acre stock raising homestead bill became a law December 20, 1916, but appropriation necessary to make the classification and designation of land thereunder was not granted until June, 1917.

Urge Needed Legislation.

It has been conservatively estimated that not to exceed 25,000,000 acres will ever be homesteaded under the 640-acre act, or about one-tenth of the unappropriated, unreserved public domain. A complete classification of the remainder should be made as promptly as possible, and we should urge congress to grant the necessary funds for that work.

I am greatly pleased to inform you that the honorable secretary of agriculture has decided to defer any action in connection with any advance in grazing fees for the national forests for the present.

The annual loss of livestock by predatory wild aniamls amounts to many millions of dollars. In order to cope with this evil, congress should grant a larger appropriation. I recommend that you reaffirm your action of last year in which you urged congress to appropriate $500,000 for that work.

In its short period of existence the livestock division of the bureau of markets at Washington has accomplished much for the livestock industry.

Statistical Data Valuable.

The statistical data now being published by the bureau as to livestock and meats, and the market conditions in various consumptive centers, are of great value to stockmen and to our agents, the commission men. The results so far attained seem to indicate that an extension of the work is most advisable. We should urge congress to grant the necessary money.

I desire also to commend the bureau of animal industry and the other branches of the department of agriculture for their very capable service in our behalf.

Many members of your market and executive committees have rendered valuable assistance, and I have received most effective and loyal support from them. This is a source of much gratification, and has helped very materially in smoothing out the rough places and hard problems which nautrally arise in such an organization. It is difficult to please every member; the best we hope for is the approbation of a majority of the members. The larger this majority the better we are satisfied, and the more earnest and effective will be our efforts.

I will not attempt to discuss in detail the many other questions which have received the careful attention of your officers during the past year.

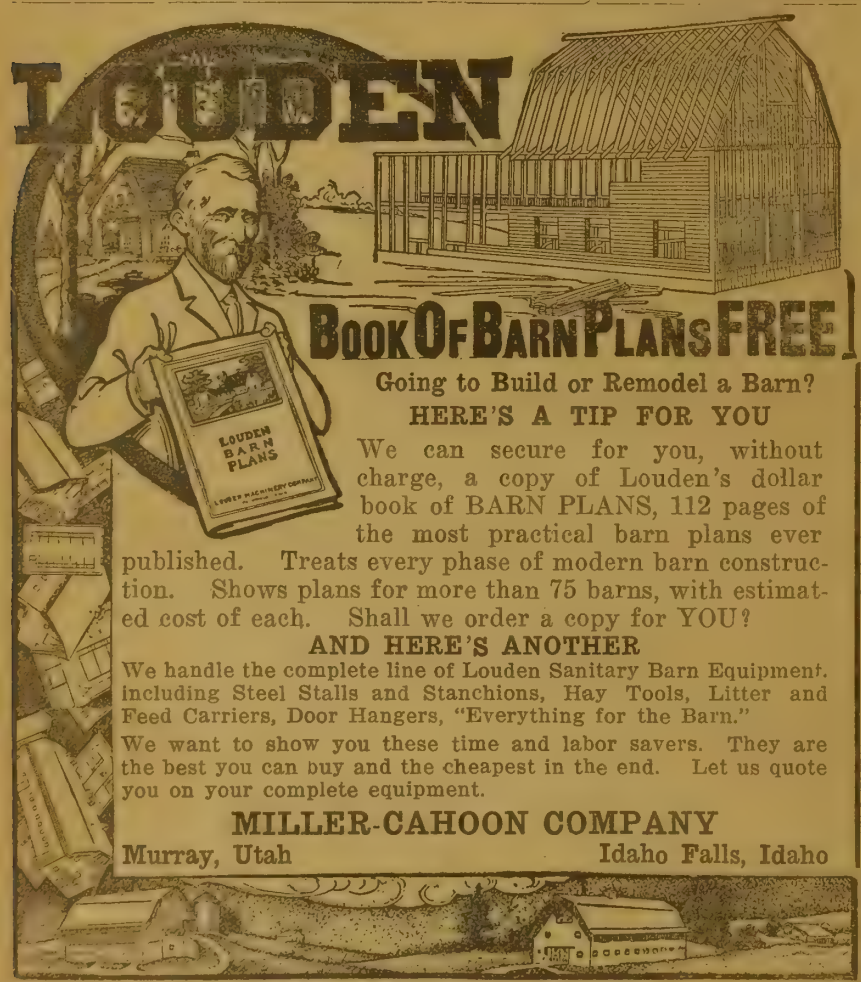
Advises Unity of Action.

Your various standing committees, and others, will report to you fully. We have all been extremely busy since our last convention. I have been on call at all times, made two trips to Denver, one trip to Atlanta to attend the annual convention of the Southern Cattlemen's association, and many trips to Washington, Chicago and other points in your behalf. Your secretary has been away from Denver most of the year. We have tried to leave nothing undone that should be done.

Never was our industry confronted with more perplexing propositions. Never was there greater need for wise counsel and united action. We are in the midst of the greatest war in all history. We must maintain inviolate our scared ideals of civilization. To do this we must make many bitter sacrifices. Let it not be said of any stockman that he failed to do more than his snare.

IT IS RIGHT

that each of us do his duty. The government assures the hog man that the performance of his duty will be profitable. Ask your banker about it.



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We can secure for you, without charge, a copy of Louden's dollar book of BARN PLANS, 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Shows plans for more than 75 barns, with estimated cost of each. Shall we order a copy for YOU?

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counts. A well balanced mixture of grain and grain products, cotton seed meal and sugar beet molasses.

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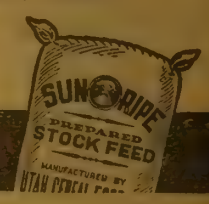

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ENTRIES CLOSE MARCH 20TH. WRITE TODAY FOR ENTRY BLANKS.

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INTER-MOUNTAIN STOCK SHOW ASS'N.

NORTH SALT LAKE, UTAH.

ADDRESS BY JOSEPH P. COTTON HEAD OF THE MEAT DIVISION OF THE FOOD ADMINISTRATION

(Continued from page 3)

FEEDS, KEEP YOUR HOGS UNTIL THEY ARE READY TO MARKET.

You will get no substantial advantages by rushing them to market and trying to get the top. Keep both eyes on the hogs and send them when they are ready and we will try to hold the market. These plans, are, I think, wisely laid, but there are two points where you may be called on to help. The railroads may be short of cars and the transportation of meats East may be difficult. If that happens, you will have to hold back the hogs on the farms for a day, or a week until the glut clears. If that happens, I want you to look on that hog held back as if he were a soldier billeted in you, pay his board cheerfully, don't kick so that your neighbors can hear, and send in your bill against Prussia when the nations gather about the peace table after we win the war.

Now about cattle: You, all of you, know that the Food Administration has largely kept its hands off the cattle situation and cattle prices. In the last six weeks, owing to the unfavorable markets, circumstances have called for intervention. You, all of you, know that the United States' exports of beef to Europe have, in the past, been low, and even during the war much less proportionately and actually than the exports of hog products. So there, too, we have with the aid of England, adopted the course of increasing our export orders for frozen meat so as to clear part of the freezers.

I have advised the packers that it is our policy that the prices of cattle (excpet canners) will not fall substantially below the present levels at this time. And that, it seems is the only sane remedy for a temporary condition where we have for a few months an over-supply which is only too likely to be followed by a shortage. We all know that any attempt to fix standard or minimum cattle prices is almost an impossibility, and that at most periods the domestic demand takes care of the supply.

Do not mistake what I say about these export orders which the Food Administration has obtained to care for there temporary gluts when we have heavy runs of cattle and hogs. These orders will not be used to boost the markets and they will not be filled if the markets boost themselves. If any man interprets my remarks as a bull tip on the cattle market or as a tip to market now, he will get sadly fooled. And if enough cattle and hogs are rushed to market at once, they will break any markets and swamp any buying orders. We are helping to stabilize the market for you and also for the consumer—we are not building a Chinese wall that will withstand every assault. You must co-operate in holding the market; we can not do it all.

The cattle feeding business in the past has been a good deal of a game—with a few wonderfully good years and a lot of bad ones. So far as the Food Administration is permitted, our efforts will go to keep down the big winnings and the big losses, and make cattle feeding a legitimate industry and less like a poker game. I do not expect our efforts will change all the habits of the cattle feeder, but we are going to try, at least, to lower the stakes in his game so he will not lose so much or make so much.

Now as to mutton: As you know, mutton has not been and is not taken by the Army or exported in large quantities, and the Food Administration has had no policy in regard to it, and has no power or instrument to affect the prices paid for sheep and lamb, save as such prices keep step with prices for cattle and hogs. A misapprehension has arisen, born of the enthusiasm of a lot of amateur conservationists and publicity artists. Let me make clear that the Food Administration has urged no prohibition or interference with the consumption of lamb or mutton by the American people, save the meatless days, and that it goes further and urges the use of mutton in preference to the meats which are exported, beef and pork. Further, the Food Administration fully understand the reasons and the necessity for the marketing of of lamb at this period of the year and has no word against it.

In the absence of legal authority to fix prices and in the absence of buying orders which might affect market, that is about all the Food Administration can at this time fairly say to the sheep men. The question of wool I know nothing about and am not authorized to speak upon. It is outside the Food Administration.

There are one or two other subjects I want to touch on. The first is feeds. Some of the feeds are not under the Food Administration, some are much hampered by transportation troubles. On the whole, I am inclined to say we have made headway slowly on the feed question, but I think we are on the right track, and will get further. Some of the feeds are at outrageous levels and must go down. The price of hard corn in patricular seems to me very high.

Next comes the question of the "Meatless Day." That has been discussed and some of you have felt that it bears too harshly on the livestock industry. I think that view is wrong and am going to try to convince you. No one who has looked at the statistics will doubt that the American people eat more meat than any other, or doubt that, as a whole, they eat more than is good for them. They can easily cut down.

It is equally clear that this excess of meat eating is a luxury of a wasteful people, and that to win the war there must be—nationally—thrift and saving. And in the popular mind Hoover's Meatless Day and Wheatless Day have come to be the visible symbols by which the people pledge themselves to help win the war. It is hard to over-emphasize the value of those symbols. They have brought the duty of saving to each home, and they have the great advantage of being simple and concrete examples of real conservation. They have a direct relation to the war because wheat and meat, together with sugar, are the essential exports which we must send, and save to send, to the other side. All this, I think you clearly understand and readily admit that at most times of the year the Meatless Day is not objectionable, but it is argued that at periods when the market is glutted with cattle the demand is insufficient and the price suffers, particularly as the beef which is so highly perishable. It was because of this difficulty that the Food Administration obtained special export orders, and we expect them to be sufficient to meet the difficulty?

In the Pacific Coast States, from which there are normally no exports of frozen beef, and our export orders give little relief, for entirely local reasons, a short holiday will be granted from the beefless day.

I cannot expect that this decision is wholly pleasing to you, but I am sure you will accept Mr. Hoover's decision as patiently as you can. It is made by a man who, better than any other, understands the world food conditions; a man who has, in a way none of us have, access to the view not of this industry alone, but of the country as a whole. More than that, it is made by a man who asks nothing for himself, who is looking not only at the market of today, but at the

(Continued on page 14)

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LIVE STOCK

NEED OF A BIG MEAT SUPPLY

Address of Frank J. Hagenbarth before the American Livestock Association.

Although it behooves the producer of livestock to be at all times alert and observant as to the conditions which might affect his industry at present it is peculiarly necessary for him to do so. Conditions are so inconstant that it requires a shrewd observer to predict with any degree of certainty the trend of events. With the railroads in the hands of the government; with priority of shipments established; with the great packing plants under government supervision and perhaps administration, and with prospective price fixing for meat products, we have a broad enough field to exercise to its fullest capacity a most fertile imagination.

As patriotic citizens during these trying times, the producers of livestock, like other citizens of this great country, have serious problems to meet and solve. Their duty is twofold: First, to see to it that the nation at large is supplied to the fullest extent demanded with meats and meat products which are so necessary a help toward winning the war. Second, we owe a duty dictated by the law of self-preservation which demands that we preserve our industry and that we keep "the home fires burning.

Conserve Food Products.

It being a fact beyond contradiction that pork is the most valuable meat product for army and export use, conservation of this meat by the American public should manifestliy be extensively practiced, and no pork or ham or bacon should be used where beef, mutton or fowl can be substituted.

Next to pork in order of importance comes beef. Why the American people should be asked to discontinue the use of beef, while at the same time we are advised that the principal market centers of the country are glutted with supplies, which can only be sold at decreasing prices, it is difficult to understand. It seems like a paradox that on the one hand the producer is likewise asked to decrease his daily ration of meat and to institute meatless days, while at the same time the producer is complaining of inability to market his product at a profit, and of excessive supplies and decreased demand for beef. In my own mind the cure for this condition is simple. If the natural market for beef is to be taken away by lack of consumption, some other form of market should be substituted therefore, which will serve the double purpose of encouraging the producer and of piling up immense supplies of corned, smoked and canned beef for the future use of our allies in Europe and for our allies armies and our own armies, both at home and abroad.

Meat Necessary Food.

Americans are a meat-eating people. Meat is high in protein and a necessary food for our laboring men, and for our growing children. If mutton and lamb and fowls, as is a fact, are unsuitable for export or for packing and keeping for future use, then it is evident that where meat must be used for home consumption, the use of lamb and mutton and fowls should be encouraged.

On November 14,1917, the meat division of the food administration, through Mr. Cotton, issued the following statement: "It is the general policy of the meat division (so far as it is in its power to affect prices for livestock paid by the packers to the farmers), to see that those prices are fair and to insure to the farmer a fair profit. In regard to hogs, where there is an immediate and great need of stimulation of production, that policy has been made definite by relating the price of hogs to the price of corn. This division has not under consideration the establishment of any similar relation of prices to be paid for cattle and sheep to prices for their feed. There is nothing in the present situation that seems to make such action necessary."

Farmer Measures Cost.

Notwithstanding the apparent difficutlies in the way of fixing a market price for cattle and sheep, this apparently impossible operation was performed by congress when it decreed that $2 per bushel should be paid for wheat. This law has very clearly fixed a price on every other farm product. No farmer will raise cattle or sheep or corn unless he feels that he will receive an equivalent therefore of $2 for wheat. This is the yard stick or standard by which the farmer will from now on measure his costs of animal production.

We cannot afford even the remotest risk of reaching the deplorable conditions which now afflict Europe, where in some sections meat is unknown. Production must be stimulated. The way to stimulate production is to pay the price. If too much profit be made by the producer or feeder, let the government equalize matters by taxation of excess profits, or otherwise. As a means to this end, let the food administration through a proper channel, see to it that all available surplus supplies are promptly removed from market and conserved for future use. Let the present extreme market fluctuation be removed and stability take its place. Let obnoxious legislation be eliminated, or at least suspended during the term of the war, so that livestock may live and expand. Let discrimination be used in not using decreased consumption of certain meats, when economics demand that they should be consumed in order that we may be able to save other meats more valuable and adaptable for conservation. Let it be remembered at all times that a livestock industry once discouraged or destroyed requires years to again recover or rebuild.

YOU DO YOUR PART AND THE PIG WILL DO HIS

It is a well-established fact that "a hog is half made when past the weaning period without a stunt or a kink in its growth." A large percentage of losses from hogs occur during the early life of the pigs. A pig is the healthiest of animals when in the right environment, and the most susceptible to ills when confined or exposed and improperly cared for. The pig is an animal that needs the attention of his owner; he needs an owner with an "eagle eye" who can detect readily any slight symptom of ailment of any kind. Illness may come on a pig suddenly and play havoc with the entire herd before the owner is aware of the fact, unless this owner is ever watchful of the pig's care and welfare. Of a night the pig may be apparently healthy and thriving and by morning he may be in serious distress and beyond any treatment. We lay emphasis on these things to drive home to Berkshire breeders that work plus brains are essential to success with pigs. But no animal will pay in profits for feed consumed and labor expended so well as hogs.

Weaning time is a critical time with pigs. It is at this time that the pigs are changed from their baby food to coarse grains, mill feeds and grasses and unless the pig's stomach is accustomed to caring for these heavier foods prior to weaning, there "will be trouble in the pig camp" and severe losses resulting. This trouble usually results in sickly and stunted pigs and nothing on the farm is so unprofitable as a stunted pig—a pig whose physiology has been upset in spots. A pig is an animal machine that is living and growing to die to be eaten by man. He is made up of parts just as any other machine. He has an engine and he needs fuel. When a clinker lodges in his furnace, his progress and efficiency will be hindered. If his digestion is upset by some poisonous or contaminated food, or he is exposed unnecessarily to the elements, usually some part of his makeup is injured. If this injury is not severe, the pig is able, usually, to repair himself in the course of a few days or maybe a week or two and it results in nothing more than a temporary set-back. But if the injury is severe, we have a stunted pig—a runt—an animal that is both a burden to itself and owner.

So all hog owners want to invest sufficient time and feed in the pigs to keep these animal machines running smoothly and at capacity. It is then that the hog is the "rent payer," the "mortgage lifter" and "nation saver."

You do your part and the pig will do his.—Berkshire World.

HOGS MAY BE FED LONGER WITH PROFIT

That pigs on a ration which approximately supplies their needs can profitably be carried to a heavier weight than that at which many hogs are marketed is shown by two experiments recently completed at the Ohio Experiment Station to determine the effect of age on the rate and economy of gains. Shortly after weaning time in the first test 25 pigs were placed on a ration of ten parts of corn, four part of middlings, and one part of

Cleveland Tractor

Does the work of 9 horses and 3 men

Even if horses and men were plentiful, the Cleveland Tractor would do your work faster and at much less cost.

With the Cleveland pulling two 14-inch bottoms, it can plow up to 3½ miles an hour—*8 to 10 acres a day.* That is more than you can do with 3 good three-horse teams and their drivers.

But labor is scarce. Horses are scarce. The urgency of the situation demands farm tractors. The government urges their use.

The Cleveland Tractor not only works faster and cheaper than horses and men —*but far better.* With its aid, you can increase your production and reduce the cost.

That means more grain for Uncle Sam —*and more money for you.*

Because the Cleveland *crawls on its own tracks,* it can go almost anywhere. It weighs less than 3200 pounds and has more than 600 square inches of continuous traction surface—a bearing pressure of about 5 pounds per square inch.

Because of the small size of the Cleveland Tractor it can be turned in a twelve foot circle and housed in less space than it takes for a horse.

Its small size enables it to pass through narrow spaces between buildings, through wooded grounds, through doors and other places where larger machines cannot go.

The work in which The Cleveland Tractor can be used to accomplish more, and with greater economy, is almost endless—plowing, harrowing, discing, seeding, pulling a mower or binder, hay loader or manure spreader.

It is *the* tractor par-excellence for hauling of any nature, in excavating, road grading, pulling a snow-plow or stone-boat, in fact almost anywhere that motive power can be utilized.

Delivering 20 horse-power at the pulley, it supplements its hauling capacity by almost innumerable uses for stationary work, such as wood sawing, pumping and irrigation work, feed grinding, hay baling, corn shredding, corn shelling, ensilage cutting, silo filling, threshing, and many other uses where power is needed.

Rollin H. White, the famous motor truck engineer, is the designer of the Cleveland. He uses only the finest motor truck gears and materials. Gears are enclosed in dirt proof, dust proof

Get ready now for spring work. Prepare for the bigger, better crops America expects of you and must have. Write us today for a complete description of the Cleveland Tractor and the name of the nearest Cleveland dealer. Address Dept. AO, or use the coupon.

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No matter what your tillage requirements may be there is a Moline Harrow just suited for your work. For orchard or field, with horses or with tractors, Moline Harrows do thorough work, give long, lasting service, are easily operated and light in draft.

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Built for hard usage. Two-inch channel bars, heavy tubular steel tooth bars and teeth of finest spring steel, hardened in oil, give exceptionally strong construction. Furnished either with runners or wheels in 1, 2 or 3 sections.

Moline Reversible Low Down Disc Harrow

Just the harrow for orchard work. Wide or narrow frame extensions can be provided for harrowing under overhanging branches. Disc gangs can be easily reversed or tilted. Can be equipped with guards to prevent injury to overhanging branches. Well constructed with dust proof bearings.

Moline Three-Lever Disc Harrow

An extremely flexible, deep penetrating, light draft disc harrow. Frames so constructed that the gangs do not bump or ride. Pressure of the disc gangs is regulated by a lever. Difference in pressure between gangs is perfectly equalized. A tandem attachment can be furnished to make a double cut harrow. A great variety of sizes with round or cut-out discs can be provided.

Moline Engine Disc Harrow

A heavy, powerful disc harrow built especially for use with heavy tractors. Pull is direct from three large, dust proof bearings on each gang—the only correct method. Heavy springs take up end thrust of the gangs. Extreme flexibility between disc gangs.

You cannot go wrong in selecting from the Moline Line of tillage tools; they are correctly designed and built in the best possible manner.

See your nearest Moline dealer, or write us for illustrated folders. Address Dept. 33

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tankage. In the second test a ration of corn and tankage was fed. Beginning with the ration of eight parts of corn to one part of tankage the proportion of corn was increased one-fourth part weekly for the first 24 weeks and remained constant thereafter. The plan followed in the second test seemed more efficient.

From birth to 100 pounds the pigs ate 318¼ pounds of feed for 100 pounds of gain in live weight; from 100 to 200 pounds they ate 361 5-6; from 200 to 300 pounds they ate 434¾; from 300 to 400 pounds they ate 450.1-7; and from 400 to 500 pounds they ate 497¼ pounds for 100 pounds gain.

With one exception the feed required per unit of gain increased as the pigs increased in weight. This is to be expected when the character of increase in live weight is taken into account. Fat is costly to produce and is now high in value. Even the comparatively high feed requirement for gains produced by the pigs between 400 and 500 pounds would in many localities permit a fair profit. Far more hogs should be carried to at least 300 pounds before marketing, these animal husbandmen advise.

If heavy hogs sell at the premium the higher value of their carcass justifies, they can profitably be carried to a heavier weight than that of the average hog marketed today. Particularly is this true when the feed supply is above normal and the number of hogs below normal.

GRINDING THE GRAIN

A. D. Miligan.

Does it pay to grind grain for feed? Generally speaking it does. From six to seventeen per cent of the whole grain fed is undigested, and when this loss can be saved by grinding it will pay every farm with stock to use the grinder. We have entered an era of high priced feed, the end of which no man can foresee, and the higher the price the more this six to seventeen per cent saved through grinding means in dollars. Nature intended grain for reproductive purposes rather than for livestock to eat, and protected resistant substance which the feeding experts have proven tnat in some instances the digestive juices never penetrate. The amount of saving made through grinding grain or feed depends upon the kind of animals to which it is fed and on the kind of grain. Young animals of all breeds do best on ground grain, because their mastication is never thorough. Old animals do best on ground grain because their teeth are poor and they swallow a great deal of grain whole and never digest it. Hard-worked animals do best on ground grain feed. Under the head of hard-worked animals come horses, milk cows and animals fed heavily for fattening or for growth. The higher the price of grain the greater the saving made by grinding corn, oats, barley and even alfalfa. The leading authorities on feeds and feedings are Henry of Wisconsin, Jordan of New York, Woll of California and others. Jordan reports three experiments with horses. One lot was fed ground corn and oats and another unground grain from the same bin. The results showed that fourteen per cent less ground feed got the same result as with the full quantity of the whole grain. Dr. Henry says: "Small grains such as wheat, rye and kafir give best results when ground and barley should never be fed unless ground or rolled." His experiments back up his assertions. Test lots of steers were fed—one lot with whole corn, one with ground corn and the third with ground corn and ground corncobs. Seven hogs with the steers fed whole corn increased in weight 16.7 pounds to each 100 pounds of corn fed to the steers. The hogs following those fed ground corn only made .7 of a pound gain on each 100 pounds of meal fed, and the hogs following the steers on meal and ground corncobs made an even less gain. Grinding grain is an especially good practice when feeding ensilage because the gums of the animals sometimes become tender, particularly if the ensilage shows acidity. Grinding grain gives the maximum efficiency in assimilation of nutriment. Not only does grinding the grain increase its value, but the feed grinder works up a great deal of low-value feed stuffs that would otherwise be total waste. We are raising some corn and we are going to grow a great deal more of it, so whatever we may say about corn feeding holds good here. With the feed grinder available it is a waste of both time and feed to shuck the corn and shell it. The shuck contains feed value and so do the cobs. The cobs are rich in carbohydrates, the analysis showing 44.8. Grinding husks and cobs along with the corn adds three per cent to the value of the cornmeal. A pound of corn-and-cob meal is equal to a pound of cornmeal.

UTILITY OF THE SHEEP

R. B. Rushing.

Good, profitable and permanent farming, of course, naturally demands the presence and proper handling of livestock. In the general distribution there seems to be a somewhat notable tendency to neglect the sheep more or less. The attitude toward sheep is one due in part to simple prejudice and in part to supposed drawbacks to the industry. The effects of some of the diseases on sheep are serious and discouraging. Sheep disease are rather serious because they are rather difficult to prevent and nearly impossible to cure. Sheep diseases are discouraging because their effects are long drawn out. A sheep may get so out of condition as to be absolutely unprofitable and yet seem to retain sufficient vigor to promise a recovery, which does not often follow. A hog which becomes unthrifty either dies soon or gets better, sometimes with surprising abruptness. The sheep does neither, usually. They usually just wear a grieved condition and continue to exist.

But there is a system of handling the sheep by which these difficulties may in a great measure be prevented. One of the bugaboos to the inexperienced is the lung worm. There are some stages in the life history of the lung worm that are yet not very well known. One of these is the manner in which it is transported from the stomach to the lungs. It is defintely known, however, that the contamination is largely brought about through a distribution of the eggs of the worm over the pastures and in damp, undrained places, or in stagnant pools. Fresh water and unpolluted pastures are essential means of prevention.

The probable incoming system of farming which demand lesser acreage and better care will bring the sheep more into prominence. The sheep finds a profit-making place on the small farm as readily as any other animal.

Their habits of feeding make their care less burdensome than that of some other animals. While they are not gross feeders they yield a great per cent of gain for feed consumed. It is a fact in favor of sheep that those who once become fully acquainted with the animals are the loudest in their praise and raising them for profit.

No better grain is adapted to winter sheep feeding than oats with a little bran added. No kind of hay is better for winter feeding than clover and alfalfa, but you may mix a little corn fodder for a change as they usually like it quite well.

The sheep has the most delicate sense of smell of any domestic animal, and the racks and troughs from which they will eat will offend more or less if not kept perfectly clean. They will not eat ill-smelling or unclean food nor drink unclean water, unless compelled by hunger and thirst to do so.

Cleanliness is a matter of necessity and must be kept in force if the best results to be attained are desired.

With the high price of wool and the scarcity of sheep and the high price of mutton, it seems to me that every farmer should be turning more attention now to the utility of the sheep.

IRON AGE GARDEN TOOLS
IRON AGE Combined Hill and Drill Seeder
Bateman M'f'g Co., Box 826, Grenloch, N. J.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

Ditching Made Easy
With this Simplex Ditcher-Terracer
Sent on 10 Days' Trial
Consolidated Wagon & Machine Co., Salt Lake City, Utah.
Simplex

MUD!
—it gets in your ditches
Cut shows Model 20, made in 2, 4, 6 horse and tractor sizes. Makes new ditches, cleans old ones, to 4 ft. deep.
THE Martin
DITCHER AND GRADER
FINE FOR GRADING, TERRACING AND DYKING
Does the work of 50 men and does a better job. Is simple, practical and efficient. No wheels or gears. No repair bills. Fully illustrated catalog with prices and list of users near you free. Write for it today.
OWENSBORO DITCHER & GRADER CO.
1577 Wazee Street Denver, Colorado

IWAN POST HOLE AUGER
Show this advertisement to your dealer
has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.
Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.
IWAN BROS.
Dept. A, South Bend, Ind.
With Straight Edge
Genuine Iwan Augers and hay knives wholesaled by: Consolidated Wagon & Mach. Co.; Stevens-Peterson Hdw. Co., Salt Lake; H. W. Co.; Zion Co-op. Merc. Inst.; Salt Lake City; Geo. A. Lowe Co., Ogden, Utah.

SEEDS
Reliable and Full of Life
SPECIAL OFFER
Made to build New Business. A trial will make you our permanent customer.
PRIZE COLLECTION
GUARANTEED TO PLEASE.
Write today; mention this paper.
SEND 10 CENTS
H. W. BUCKBEE
Rockford Seed Farms
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American Mastodon Pansies
CHILDS' GIANT
CHINESE WOOL FLOWER.
ASTER AM. BEAUTY.
SPECIAL OFFER
OUR BIG CATALOG of Flower and Veg. Seeds, Bulbs, Plants
JOHN LEWIS CHILDS, Inc., Floral Park, N. Y.

ADDRESS BY JOSEPH P. COTTON HEAD OF THE MEAT DIVISION OF THE FOOD ADMINISTRATION

(Continued from page 11)

year which is to follow, when the meatless day will be an absolute necessity, whose heart is set on one single object—TO WIN THE WAR.

As to the need of conservation of meat to help the other side, there can be no dispute. The herds of England and France are much reduced, the shortage of shipping cut off usual supplies and England has a meat famine and soon a bread line. And for their meat supply those nations who are fighting out fight must, in increasing measure depend upon us. And to supply them we must eat less meat. The meatless day is the simplest and best method to gain that result.

There is one other matter of vital consideration to the livestock industry which should, I think, have your attention. In studying the statistics of the livestock industry at this time, of the highest significance is the fact, that while the prices of the average cattle stay fairly satisfactory, the spread between the top and the average constantly narrows and the top tends to go down, and the spread between the bottom and the average constantly narrows and the bottom moves up. That phase is not peculiar to cattle. It appears in nearly all commodities during any severe war and it is, and I believe will be, especially marked in this one. It is an inevitable condition to which the industry must adapt itself. It is not I believe in any large degree due to the meatless day. But the plain fact is that with the demand for feed grains the country cannot long afford the luxury of highly fed cattle and that branch of the industry must turn to the marketing of short fed and half fed cattle. If you do not make that change voluntarily your losses will drive you to it. The livestock industry is asked for more hogs and as to the hog the producer can safely go ahead so far as he has feeds which will make the business profitable around the stabilized prices. Put in this cattle business the producer must use his brains and watch his step most carefully. The job is not an easy one.

CROP ROTATION NECESSARY SAYS EXPERT

Dr. Geo. R. Hill, U. A. C.

Wise Cycle of Crops Keeps Disease and Insects Out.

A wise rotation of crops is absolutely necessary if farmers are to keep their land up to their maximum producing capacity. One of the paramount problems confronting the farmer this year is the problem of so planning his crops that he will be able to get good yields throughout. With intensive cultivation have come numerous plant disease and insect pests that have established themselves in the soil. Each crop has its particular diseases and pests. If the same crop be planted on the same plot year after year, the crop yield will steadily decrease, owing to the continued growth in virulence of the disease or in the numbers of the pest. To keep the yield up, the soils must be freed from these diseases and insects. This can be done by literally starving them out.

Rotation of crops will accomplish this desired result. If the farmer has a carefully planned cycle of crops, no one insect or disease can become established in the soil. With a constantly changing crop, the old pests find themselves without food. The more crops in this cycle, the better, as long as your soil is adapted to all the crops grown.

In Belgium, so many crops enter into the crop rotation, that flax, for instance, is planted by each farmer about once in every fifteen years. The farmer should so divide his land that he is growing part of it to each of the essential crops. Then by shifting the crops along each year, a rotation can be effected that will keep production at a higher level and the pests and insects will be kept at a minimum.

REALLY CAPABLE

"How's your boy Josh getting on at the traing camp?"

"Wonderful," replied Farmer Corntossel. "I feel a sense of great security. An army that can make Josh willin' to get up early, work hard all day an' go to bed early kin do anything."

Tool sheds haven't risen in price nearly so fast as farm machinery.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

Fifty barrel flour mill located in good county seat of Idaho. No other mill within 50 miles; in a country that raises lots of wheat. Price only $11,000.

FEDERAL LAND COMPANY
Ogden Utah

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

RELIABLE FARM BARGAINS

Located within four miles of the railroad and in the center of the stock-raising district in Idaho, about 30 miles from Pocatello, we have 1120 acres; first-class water rights; 700 acres hay land, where they put up hundreds of tons of hay each year; place all fenced; an 8-room, modern house, absolutely modern with the exception of electric lights; full basement, heating plant, spring water piped to the house for domestice purposes. There is another small house used for the hired help; good corrals, barns and other outbuildings; 4 mowers, 4 wagons, 2 binders, 4 hay rakes, hay loaders, plows, harrows, in fact all necessary machinery to run the farm. The farm is held at $40 per acre. There are 50 head of horses and 50 head of cattle on the place that may pass with the sale providing the purchaser desires to pay the market price for same. We may consider some Salt Lake City property. There are reserve rights in the Soda Springs Grazing association, eleven shares, enough to run 400 head of cattle. Also have rights on the Indian leased land in the Chesterfield association which would run about 400 head of cattle if necessary. The forest reserve is also within a very short distance of the ranch.

Right near the town of Tremonton we are still offering one or two first-class farms at a very great bargain. These farms are located within a half mile of the city limits of Tremonton and can be had for $150 per acre, $140 and $120. We have three 40-acre tracts. 10 per cent down and ten years to pay.

We also have in the same locality several first-class farms, with good buildings, that we can sell for $130 to $160 per acre, depending upon the improvements upon the land.

In Cache valley we are offering three or four first-class farms at $100 per acre, ten years to pay. All under the canal, with a water right; right near a good town, school, churches and railroad station.

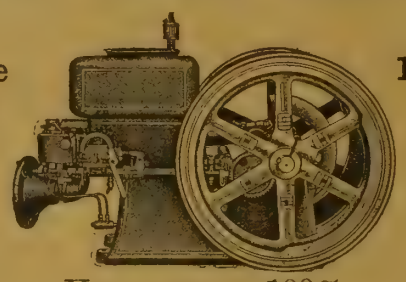
KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT

HERCULES ENGINES

With Webster Magneto

Gasoline Cost 30c Gallon



Kerosene Cost 15c Gallon

You can save 100%

Save the difference in cost of Gasoline and Kerosene, **it will pay for your Engine.**

HP	Fuel Consumed full rated H. P. load 10 hours	Operation cost per day on Gasoline	Operation cost per day on Kerosene	Net saving per hour by using Kerosene	Net saving per day by using Kerosene	Net saving in 200 days by using Kerosene
3	30 pints	1.12½	.56¼	.05½	.56¼	112.50
5	50 pints	1.77½	.93¾	.08 1-3	.93¾	187.50
7	70 pints	2.26½	1.31¼	.13	1.31¼	262.50
9	90 pints	3.37½	1.68¾	.16½	1.68¾	337.50
12	120 pints	4.50	2.25	.22½	2.25	450.00

—BUY A—

Hercules Kerosene Engine

and start saving now.

Call at our nearest branch.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

CUTS COST

WANTED

Several thousand Ewes that are bred to good rams. Write or call on me when in City . Give complete descriptions.

CHAS. R. HUTCHESON
405 Con. Nat'l Bank Bldg.
Salt Lake City.

PERSONAL ATTENTION

Is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.

BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

YOUR INCUBATOR

Should soon be in operation for best results. Take no chances, get the leading hot water machines, a Buckeye or Queen. "Do your bit" for "Uncle Sams" meat supply. Write TODAY for Big Free Seed and Poultry Supply Catalog.

PORTER-WALTON CO.
Salt Lake City

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

"IF YOU LOVE YOUR COUNTRY, WHY NOT OWN SOME OF IT"
Why buy land when the government will give you 320 or 640 acres.

WM. H. KERSHAW

dealer in farms, city property, sheep range and cattle ranches. All kinds of government lands.

Special attention given filing in the Salt Lake Land Office, and making all kinds of papers to be handled through the Salt Lake Land Office.

201 and 212 NESS BLDG., SALT LAKE CITY.
Phones Was. 4383, Hyl. 1599-J.

If you want the best in Butter Wrappers send in your order to The Utah Farmer TODAY.

Poland Chinas

FOR SALE

1 yearling boar.

2 yearling tried sows, April farrow.

1 two year old sow, March farrow.

15 late Summer and Fall boars and sows.

All the big boned easy feeding kind, the best breeding that ever come out of Iowa. Address

EARL BENNION

Taylorsville Utah

FOR SALE

15 head of Registered Holstine-Friesian cows and heifers, and 15 head of grade Holstine heifers.

C. H. KRIEGH

Buhl Idaho

200 Tons Corn Silage

30 TONS OF ALFALFA
30 LOADS OF STRAW

All in first class shape, must be fed on the place, help for feeding can be obtained, shelter or shed room provided.

Three Miles North of Pleasant Grove.

A. P. WARNICK,
Pleasant Grove, Utah.

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Rambouillet Sheep.

W. S. HANSON, Prop.

Collinston Utah

FOR SALE

Span large registered Perchon mares, 2 and 4 year old, beauties. Dam imported from France. Must sell, price right. Write or call on

C. A. PARRISH

Centerville Utah

WANTED

To buy ranches, sheep, cattle or all. Write complete description at once.

CHAS. R. HUTCHESON

405 Con. Nat'l. Bank Bldg., Salt Lake City.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

NINE DOLLARS A TON FOR SUGAR BEETS THIS YEAR

(Continued from page 3)

between the growers and the manufacturers.

Plans have been made by the State Farm Bureau to co-operate with the Utah Agricultural college, United States department of agriculture and the food administration to conduct a vigorous campaign through local farm bureaus for increased sugar production with the support of State Food Administrator Armstrong.

Praises Loyalty Shown.

President McKay was loud in his praise of the patriotic way in which the delegates and the representatives of the sugar companies had conducted themselves, and said that the decision of the committees will probably affect the other intermountain states, as Utah is the center of the sugar industry in this district.

A resolution was passed by the committee heartily indorsing the work and attitude of James W. Jones of Salt Lake, of the United States department of agricutlure and J. A. Brock, traveling representative of the sugar division of the food administration, who were both present at the conference.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending January 22.—Cattle. Receipts, 1,400; market, steady; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.50; fair to good, $6.00@7.00; canners, $4.00@5.00; feeder cows $5.00@6.00; veal calves, $9.00@10.00.

Hogs—Receipts, 1,024; market, steady; tops, $15.35; bulk of sales, $15.35.

Sheep—Receipts, 6,067; market, slightly lower; lambs, $14.00@15.00; ewes, $9.00@10.00.

North Salt Lake, Jan. 23.—Cattle—Receipts, 121; market steady. Choice steers, $9.50@10.00; good steers, $8.00@9.00; fair steers, $6.75@7.75; choice cows and heavy heifers, $7.00@7.50; fair to good cows and heifers, $6.00@6.50; cutters, $4.75@5.50; canners, $4.00@4.50; bulls, $5.25@6.00.

Hogs—Receipts 232; market steady, choice fat hogs, 175 to 250 pounds, $15.35; mixed fat hogs, 160 pounds and up, $15.00@15.25.

Sheep — Receipts, 352; market steady, demand poor. Choice grain-fed lambs, $14.50@15.00; choice yearling wethers, $11.00@11.50; fat wethers, $10.50@11.00; fat ewes, $9.50@10.00.

Kansas City.

Kansas City, Jan. 23.—Hogs—Receipts, 17,000; higher. Bulk, $16.10@16.35; heavy, $16.20@16.40; packers and butchers, $16.15@16.35; light, $16.10@16.25; pigs, $12.00@15.75.

Cattle—Receipts, 11,000; steady. Prime fed steers, $12.25@13.50; dressed beef steers, $10.50@12.50; western steers, $8.50@12.50; southern steers, $7.00@10.00; cows, $6.50@10.50; heifers, $7.00@11.00; stockers and feeders, $7.00@11.50; bulls, $6.50@10.00; calves, $7.00@14.00.

Sheep—Receipts, 9000; higher. Lambs, $16.00@17.00; yearlings, $13.00@14.50; wethers, $11.00@13.00; ewes, $10.00@12.20.

BEET TOP SILAGE

A. E. Cobbley, Pleasant Grove.

The food value of sugar beet tops has long been a subject of debate among farmers. My experience with feeding beet top silage will probably be of interest.

Last summer I built a small silo for the purpose of experimenting with beet tops for silage. I have found that the tops make a very good and nutritious food when converted into silage. The stock eat it very readily and seems to do very well on it. I have fed my dairy cows about forty pounds per day and about one-half as much hay as usual. The cows are giving more milk and are in first class condition. I have found it best, however, to feed it after milking since feeding it during or immediately before milking has a tendency to taint the milk.

My young stock and steers eat this silage readily and are doing much better than when fed hay and beet pulp.

About five tons of silage can be made from the tops of beets grown on an acre of ground, and the silage in my estimation, is worth at least five dollars a ton, which makes my beet crop worth twenty-five dollars more per acre.

Save Grain For Human Food

Feed your livestock

COTTONSEED CAKE

AND

SOY BEAN CAKE

The best and cheapest food

Write us for prices

Globe Grain & Milling Co.

302 Kearns Building,

Salt Lake City, Utah.

SERVICE SCHOOL ANNOUNCEMENT

For the benefit of those who are contemplating the purchase of a tractor, either now or in the future, and for the benefit of the owners of Avery Tractors, we are going to hold a Service school to educate operators in the care and operation of Avery Tractors. This school will be held in Salt Lake City beginning February 5, 1918, and will continue during the balance of that week. Expert tractor operators and Service engineers will be in attendance and will give courses in the care and adjustments of magnetos, carburetors and all parts pertaining to tractors.

This free course will be invaluable to all parties in the Intermountain district who are interested in tractors, and we extend an invitation to all seeking such inforamtion to attend.

There will be no charge whatever, and the only requirement is that you enroll as soon as possible, or arrange to send one of your employees. Address or call on.

LANDES & COMPANY

General Agents, Avery Company,
Second West and South Temple,
Salt Lake City, Utah.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

FOR SALE

Registered Hereford BULLS and HEIFERS $100 to $200 each.

20 Registered BERKSHIRE PIGS farrowed December ready for delivery at $15 each.

Registered ANGORA GOATS of both sex.

And a car of grade CALVES, Steers or Heifers.

Also some nice MULES.

My farm is located three miles north of Ephraim. But I will met you at Ephraim on an appointment, and you can inspect the stock before buying.

JAMES G. OLSEN

Ephraim Utah

FOR SALE

Purebred Holstein-Friesian Bull

Age 8 months, sire, Romea Aaggie Riverside 4th, Dam, Lady Mercedes of Cherry Creek, grand daughter of Rag Apple Korndike 8th the $25,000 bull.

RULON STRAT, Spring City, Utah.

PATHFINDER BOARS

I have a few choice Duroc Jersey Boars For Sale. Sired by Richard Pathfinder 1st., Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please. Write me your wants.

ERIK W. OLSON

Virginia Idaho

NOTICE

At the State Fair our Pedigree Egg Laying Leghorns won ten prizes. To save house room we offer, now, cockerels @ $2.50 to $3.50 that will sell for double after the winter shows.

BATES & SONS

Prove Utah

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

Wellington Utah

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

The Practical Road of The Future

By W. M. Wilson.

No less a personage than Henry Ford predicts that in the immediate future the great mass of local freights will be transported through the medium of traction engines, motor trucks and trailers. Such being the case, and we have no reason to doubt it, road construction will have to be along the most permanent lines. Dirt roads will be of such an expense for maintenence that their use as main traffic lines will be prohibitive. The United States government, quick to realize the radical change in traffic conditions has already contributed millions of dollars for the purpose of assisting progressive communities in their road constructive efforts. The fact that the president has but recently found it necessary in order to facilitate the handling of freight, to take over all the great railroad systems of the country fully substantiates the above statements.

The farmers of those communities surrounding big market centers have already found it necessary in the marketing of their product, to substitute the motor truck for the erst while team and wagon. Farm products can now be landed in the cities in the early morning and disposed of in ample time to permit of the farmer being home again for dinner. Formerly it required a whole day and some times two, to accomplish this purpose.

Indorsed by the government, as exemplified by its use for the construction of military highways, forts, coast defense works, gun emplacements and for thousands of other purposes where permanency is required, portland cement concrete solves the problem of future road construction. Hard, smooth and sanitary; insuring a continuity of surface and a minimum of traction resistance it has brought the modern highway up to that state of perfection which undoubtedly will mark the standard of necessary efficiency for years to come. Portland cement can every where be purchased upon the open market and handled with satisfactory result by any one who cares to familiarize himself with the standard methods of proceedure. No greater tribute to the splendid efficinecy of this product as a road making material can be given than the fact that there is laid upon the streets, highways and roads of the United States and Canada today, over one hundred million square yards of portland cement concrete. An amount sufficient to pave a road sixteen feet wide for a distance of over eleven thousand miles, or almost equal to four times the width of the whole United States.

Not only is this a reason why our state road and county officials should build their present and future roads out of this class of material, but this fact remains also to be considered—the various companies engaged in the manufactue of this product throughout the state, have millions of dollars of Utah money invested in their plants; they employ hundeds of Utah citizens and they consume in their operations thousand of tons of Utah coal annually, which in turn employs hundreds of other Utah workmen who are thus made beneficiaries of Utah Pay-rolls. The people of Utah are firm and staunch belivers in the patronage of home industries and therefore it is generally understood that when they speak of hard surfaced roads, they mean portland cement concrete roads; for the manufactuer of this product constitutes one of their state's greatest industries.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for purebred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

Why This Oakland Wins Wide Favor

IT is no accident, nor mere caprice of opinion, that has given the Oakland Sensible Six its high place in the regard of the American farmer.

It is, rather, that this car more ably meets his wishes and his needs than any other, and better serves him at a lower upkeep cost.

Although built on an extraordinarily strong and serviceable chassis it carries no unnecessary weight, and its high-powered engine is free from handicap of any sort.

Its sightly and comfortable body is swung on long springs over a generous wheelbase—on the roughest roads the car travels with sureness and ease.

The high-speed overhead-valve engine of the Oakland Sensible Six is simple and efficient; at 2600 r. p. m. it delivers 44 horsepower, or one horsepower to every 52 pounds of car weight.

It is quick, capable and positive in action; under all conditions it is exceedingly sparing of fuel.

The body of the car is handsome in line and proportion; it is carefully made, very roomy and exceptionally comfortable.

Concentration of the entire Oakland manufacturing forces upon one chassis as the foundation for several body models has resulted in a value not equaled in the present car market.

Owners of the Oakland Sensible Six throughout the country enjoy uniformly high mileages from fuel and tires.

Touring Car	*$ 990*
Roadster	*990*
Roadster Coupe	*1150*
Sedan	*1190*
Sedan (Unit Body)	*1490*
Coupe (Unit Body)	*1490*

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 27 LEHI AND SALT LAKE CITY, UTAH. FEBRUARY 2, 1918

A Full Measure of Patriotism

Hardin Bennion, Secretary of State

IT seems almost folly for me to attempt to add to the many splendid things that have been said during the past year by men of national repute regarding the duty of the American people in this crucial hour. That our officers and men under arms will do well their part we need have no concern. That the President and his advisers and the members of the National legislature, heads of departments and many splendid private citizens who have tendered their service gratis, are spending days and sleepless nights in their efforts to bring to the very highest efficiency the wonderful resources of the nation, we know well. But what shall we say of the masses of the people? Is it not a fact that in all our activities our chief concern is, in the words of a great financier to a former president, "What is there in it for me?" How much in dollars and cents." How much in luxury and pleasure? Is it not true, that some of us are even taking advantage of the present national emergency to sit back on our oars and say that unless we shall personally be guaranteed returns and profits beyond our wildest dreams, in the days of peace, we will cease all effort? And does not such an attitude say more strongly than words can say that this war is no war of ours; that this Country is no Country of ours, and and that we are not even willing to match the heroic sacrifice and suffering of officers and men in the field with the paltry sacrifice we might make, lodged in the security of our homes, even though we should give our entire time and earnings to freedom's cause?

HARDEN BENNION
Secretary of State of Utah.

It seems to me that if we would rise to the full measure of patriotism, even the patriotism of noncombatants, we would say, as one of our young men, representative of our State, in a Conference at Washington, did say, "Tell us what you want us to do and it will be done." There would be no question of profit to us. No luxury or pleasure we would not gladly sacrifice if by doing so we could add to the safety or comfort of the men in the field or their effectiveness in the accomplishment of the great task they have undertaken in behalf of our homes, our Country, and our people; and in defense of the eternal principals of liberty, equality and fraternity; the very foundation and structure of the Republic, and of the freedom of men the world over. In the Liberty Bond and Red Cross campaigns it has been said we "must give till it hurts" and that is well; but we must give, and think, and work, till it hurts; indeed we must place at the service of this great humantarian Cause all our faculties, all our substance. And while the brave soldiers shall fight,—and while productive fields shall be devasted, towns and cities laid waste and their peoples made homeless and hungry; and while millions of men and women heretofore engaged in the productive activities of the world are now, by their own power as well as that of the most power ful and effective machines the world has ever seen, engaged in the destruction of life, and of everything that ministers to life and its pleasures, we, who are left at home, must work and toil as we have never worked and toiled before. Men, women, and children who have never before known physical labor, especially in field or garden, must now bend to its demands. The spare moments, the idle acres, must all be made to yield bounteously," and the inspiring motive must be, not what we may produce because of its profit to us, but, because of its value for patriotic purpose; and above all must we, as did the fathers of the Republic, dedicate to this great cause, our lives, our fortunes and our sacred honor.

Farmers Are Learning How To Run Their Tractors

Farm machinery and labor saving implements are going to play an important part in our agricultural work this year.

Our government realizes this for they are allowing the use of steel and other material necessary to make the machinery that farmers will need to do their work.

The shortage of farm help, the cost of keeping horses, have helped to greatly increase the sale of tractors. We need just such help as the tractor will give because we are asked to increase our food supply and must do it with a labor shortage. In the production of food, power and machinery are going to be determining factors. The importance of a farmer knowing how to properly use this tractor and other machinery can not be over estimated.

In Utah and Southern Idaho a great many tractors will be sold this spring, a number was bought last year, they will be a great help to win the war. Once you become an owner of a tractor you should get continuous service from it, day and night if necessary, to do your own work and help your neighbor. Every tractor should be kept in good working condition. In the past many of these tractors have not done a minimum service, due largely to the lack of knowledge of the one who was supposed to operate them. Troubles which have been of almost no consequence were neglected through lack of knowledge on the part of the operator until they developed into difficulties, causing delays at a time when their use was greately needed. This year of all years we can not afford to let a tractor be idle for any cause.

We are facing a situation in the shipment of freights that may make it very difficult to secure at the time we need them, repair parts.

The best way with all machinery is to so use it that repair and breakage are eleminated, this can not always be done, but a better knowledge of how to use them greatly helps to correct the minor troubles which only become serious because they are neglected.

The Agricultural College is conducting a tractor school, one covering a short period, another giving a more complete course whch takes a few weeks to complete.

Manufacturers of tractors realize the advantage that comes to any farmer "who know how" and for this reason are conducting service tractor schools.

Landes and Company agents for the Avery tractors will hold their school at Salt Lake City, beginning February 5 and continue during the whole week.

The International Harvester Company will hold one of the schools at Preston, Idaho, February 1st and 2nd; Provo, Utah at the B. Y. U., February 14th, 15th and 16th, and other places later on.

These schools are free to any farmer who wants to attend them. You may not own a tractor, go any way and learn what the experts in charge have to say about these modern machines. Nearly every one is interested in power farming. Every one should know the tractor so well that he can tell by the symptoms that there is trouble and how to locate and adjust it.

Expert tractor operators and service engineers will be in attendance and give lectures and demonstrations in the care and adjustments of all parts of the tractors.

Farmers should take advantage of this opportunity and attend one or more of these schools.

Implement Inspection and Repair Week.

There is now a movement to have a week set apart when every piece of machinery will be inspected and repaired. One of our leading implement dealers when asked about the preposed weeks, said:

The idea is a very good one and it would be of great benefit to the farmers as well as to implement dealers thoughout the country. This in our opinion should be held in the first week of March and should be given as wide a publication as possible, by newspapers, state officials and the college and directed to the farmers of the country, urging that during the week they inspect their farm operating equipment with two purposes in mind: 1st to ascertain what of their machinery will need repairing and what repairs in particular will be necessary to put their machinery into workable condition when the spring operation begins. 2nd, to urge the farmers to inspect their machinery with a view of determing whether it would be advisable to purchase new machinery or whether the implements should be repaired and urge them to place their orders during the week, if not before, so that there will be ample time to procure the necessary repairs from the factory if they are not already in the dealers stock.

This year more than ever before, machinery is going to play an important part in food production.

Conservation of farm machinery is just essential as that of food, because it will help to produce it.

DUCK-BACK

Harness Oil

Will prolong the life of any set of harness. The sooner used, the better. Strength and

Pliability

are what you want in harnesses. This oil keeps dirt and dampness out and life in.

Utah Oil Refining Co.

Refiners

Salt Lake City, Utah.

ALLOTMENT OF FUNDS FOR FEDERAL AID ROADS

The announcement has been made at the Ogden headquarters of the Forest Service that the Secretary of Agriculture has approved the allotment of funds for the third year under Section 8 of the Federal Aid Road Act.

Ten million dollars is appropriated for the construction and maintenance of road and trails within or partly within the National Forests, and this money is to be spent in ten yearly installments in co-operation with States and Counties.

Under the allotment for the Fiscal Year beginning July 1, 1918, Arizona received $54,318, Idaho $104,700 Nevada $19,228, Utah $39,370, and Wyoming $41,510. This allotment is practically the same as that of the present Fiscal Year.

A FULL LOAD

"Has your boy, Josh, completed his education?"

"I reckon so," replied Farmer Corntossel. "I don't say that he's got all he needs, but I suspect he's got about all he's able to hold."

Averyize Your Farm Work

THERE isn't any question any more about the success of tractor farming—the only question now is—which is the best tractor for you to get.

When you **Averyize** your farm you can be sure you have made a wise selection. When you get an Avery you are getting a tractor that is long past the experimental stage. It has been put to every test known.

We proved our faith in the Avery design by introducing Avery Tractors on a sold-on-approval policy. We have proved the success of the Avery design by entering it in every important motor contest and demonstration held in this or any other country.

And the strongest proof of the success of the Avery design is that men who bought the first Avery Tractors years ago are buying more Avery Tractors—and sons, brothers, cousins and neighbors who have watched Avery Tractors at work are buying them in large numbers.

Avery Tractors are built by a company having over thirty years' experience in building power farming machinery with tens of thousands of Avery machines in operation all over the world, and by a company owning a large factory with branch houses and distributers covering every State in the Union and over 60 foreign countries.

A Size for Every Size Farm and Every Kind of Work

There are six sizes of Avery Tractors from which you can pick exactly the right size tractor for your work.

There's an Avery Two-Row Motor Cultivator for doing your cultivating and other light traction and belt work.

Then you can get an Avery Plow and an Avery Thresher to fit any size tractor, and you have an equipment of Tractor Farming Machinery that will enable you to raise a larger crop at less expense and save it after you raise it.

The five sizes of Avery Tractors—8-16, 12-25, 18-36, 25-50 and 40-80 h. p., are all built of the same design.

Avery Tractors are the only tractors with a double carburetor and duplex gasifier that burns ALL the kerosene. They have a patented sliding frame that eliminates the intermediate gear used on other tractors. Saves expense and increases the power.

They are the only tractors with renewable inner cylinder walls, crankshafts one-half the diameter of the cylinders, adjustable crankshaft boxes, no fan, fan belt, governor belt, fuel pump, or water pump.

There's also a 5-10 h. p. Tractor, especially built for small farms and lighter work on large farms.

All Sizes Plows and Threshers

You can get an Avery Tractor Plow, either light or heavy, in any size from 1 to 10 bottoms, and an Avery Thresher in any size from a small 19x30 inch up to a large 42x70 inch.

Write for the 1918 Avery Motor Power Book

It shows all Avery machines in their natural colors, both stationary and actual working scenes. It has unusual detailed illustrations of tractor construction. Write for free copy and ask for special information about the size machines you need. Address

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LANDES & COMPANY, Distributers
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SALT LAKE

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, FEBRUARY 2, 1918 No. 27

The Price of Bran Reduced

GOVERNMENT REGULATES PRICE OF MILL FEEDS

The Utah Farmer has received several letters from farmers asking about the price of bran and mill feeds. For the benefit of our readers we are going to give them a copy of the new rulings of the Food Administration reducing the price of bran and other mill feeds. If mills are not selling at prices made by these regulations they are breaking the rules of government supervision and may have their license taken from them.

The price of these mill feeds are fixed and very definite as any one can see by the rules quoted below. The market price of wheat in your town can easily be obtained and by the rules you can find out just what price should be.

Cost of wheat per bu.	Cost of wheat per ton	Cost of bran per 2,000 lbs.	Shorts or middlings 2,000 lbs.	Mixed feed prices per 2,000	Flour middlings per 2,000	Red Dog per 2,000
170	56.67	21.53	23.53	25.53	30.53	36.53
173	57.67	21.91	23.91	25.91	30.91	36.91
175	58.33	22.17	24.17	26.17	31.17	37.17
178	59.33	22.55	24.55	26.55	31.55	37.55
180	60.00	22.80	24.80	26.80	31.80	37.80
184	61.33	23.31	25.31	27.31	32.31	38.31
190	63.33	24.07	26.07	28.17	33.07	39.07

"Rule 17. No Licensee engaged in the business of mining flour and feed from wheat shall, after December 25, 1917, use more than 264 pounds of 58 pounds per bushel or heavier clean wheat in making 196 pounds of 100 per cent flour. From the 100 per cent flour so produced the Licensee may at his option remove and sell or deliver as a separate product not more than 5 per cent of clear, or low grade flours; the remaining product representing 95 per cent or more of all the flour produced shall not be subject to further separation or division. None of the above flours so milled shall be mixed with or sold as feed.

"Rule 19. No Licensee engaged in the business of milling flour and feed from wheat shall after December 25, 1917, sell wheat mill feed at any price in excess of the following prices: 'Bulk price per ton of 2,000 pounds at mill in carloads in no case shall exceed 38 per cent of the average cost to such mill of one ton of wheat at the mill, which cost of wheat shall be the average cost as shown by the previous month's records of said mill and shall include the one per cent administration fee paid by the mill on all wheat ground.'"

Differentials (maximum prices, bulk, mill). Basis Bran.

Shorts or standards middlings $2.00 per ton of 2,000 pounds over basis.

Mixed feeds $4.00 per ton of 2,000 pounds over basis.

Flour middlings $9.00 per ton of 2,000 pounds over basis.

Red dog, $15.00 per ton of 2,000 pounds over basis.

The above percentages on prices are subject to revision from time to time by the United States Food Administrator, but no revision will be made without thirty days notice.

The price f. o. b., bulk, mill, in carload lots shall be on the basis of cash or draft attached to bill of lading and all feed sold by the Licensee shall be invoiced as such prices. There shall also appear on the invoice, in addition to such price, f. o. b. mill, the price of the sacks and items of freight and interest, if any, when goods are sold on extended terms or credit, and other charges, but the Licensee, for convenience in selling, may quote a delivered price in sacks. This rule shall not affect existing contracts.

This rule aims to establish a relation between the price of mill feeds and the price of wheat. It is made necessary by the unusually high price of course grains, which has caused unprecedented demand for mill feeds.

In view of possible larger movements of the course grains, which would naturally result in a decrease in the demand for and price of mill feed, which in turn would tend to advance the price of flour, it is necessary at this time to adjust the price of mill feed rather than trust to a rigid and unjust arrangements at a later date.

"In figuring the cost of his flour the miller will deduct the profit (not in excess of 50 cents per ton) on feed, and use this reduced figure as a basis for feed returns. It is important to note that the prices in the foregoing table are maximum prices to be changed bulk at the mill for car lots. * * *

"We repeat that the maximum prices are for car-load lots. Until further rules and regulations are issued, a maximum of fifty cents per ton differential on feed sold and shipped in less than carload lots will be permitted."

Price of Sugar Beets For 1918

BY-PRODUCTS WILL INCREASE THE FARMERS PROFITS

The price agreed upon at the meeting of the State Farm Bureau representatives and representatives of the sugar companies at Logan has been accepted by the sugar companies officials and already a campaign has been started for increased production this year.

The price will be $9.00 a ton, with a split of fifty-fifty, for any advance in price of sugar over the present one of $9.45 f. o. b. seaboard points.

The Farm Bureaus are pledged through their representatives to help secure the contracts for the sugar companies. Government officials, Food Administration, Agricultural College will all work with the farmers and sugar people for an increase production of sugar which our nation and allies need at the present time.

President Peterson's Views.

Dr. E. G. Peterson, president of the Agricultural college, learning of the action in paying $9 per ton for beets, and allowing the farmers 50 per cent of any advance in the price of sugar over $7.45 per cwt. said:

"The agreement between the farmers and the sugar companies on the price of beets again demonstrates that the spirit of co-operation which alone made possible pioneer settlement in Utah still exists in the hearts of the people.

"The farm bureau directors deserve great credit for the leadership which they demonstrated. The sugar companies very emphatically demonstrated their willingness to share the profits which have come to the industry. The whole state deserves congratulation in that it has avoided rancor and strife, and now in this important matter faces the nation unitedly in the interest of greater production.

"While in a sister state a public commission is wrangling over the matter, Utah has solved it without outside help and is ready now to enthusiastically plan for sugar production as never before.

"Every farmer now, within the possibilities of his resources of land, machinery and labor, should figure on a definite enlargement of his acreage. The labor problem, while undoubtedly needing serious attention, should not deter farmers from a larger acreage. We must get labor somewhere.

"Only a few states have sugar factories. Therefore the call for sugar which the world is making must be answered by only half a dozen states or so in the union. Utah must seize the opportunity. It may never come again. While it will mean profits, it means also something much holier than profits—it means serving humanity."

Government Agents Approve.

J. H. Brock of the sugar division of the U. S. food administration who is representing Herbert Hoover here and James W. Jones, agent of the U. S. department of agriculture, said:

"It is our opinion that the increased tonnage of beets resulting from such a splendid spirit on the part of all concerned will make it possible for Utah and Idaho to increase the sugar output sufficiently to sustain an additional half million soldiers with a full sugar ration for an entire year.

"We believe that the action of the farm bureaus and sugar companies, in getting together and establishing cordial, mutual relations exemplifies the spirit of response that will very greatly aid our government in winning the war and also establishing the industry upon a permanently sound basis that will prevail for years to come. "With the bonds of friendship and confidence more firmly established, between the growers and the companies, we feel that the agitation against increased sugar beet production must cease."

Farm Bureau Satisfied.

President D. D. McKay of the State Farm bureau also expressed his satisfaction, and said the action taken would insure harmony all along the line, and would guarantee that the entire membership of the farm bureau both in Utah and Idaho would stand solidly behind the industry and do everything in their power to insure a vast increase in acreage and tonnage for the year 1918.

By-products Will Help.

Last fall when beet harvesting was going on the Utah Farmer strongly advised the siloing of beet tops, suggesting that it would increase the profits of every farmer. A number of people have tried it out and we are giving below some of the results obtained. If two crops are possible in growing sugar beets, one of beets and another of feed, beet growing will be greatly enlarged. Increased profits and greater production of livestock will help every farmer.

Sugar Output of Utah and Idaho

The sugar beet production of Utah and Idaho for the past year will furnish enough full sugar rations for over 3,673,050 soldiers for a year, according to Dr. J. A. Brock, Representative of the Sugar Division of the Food Administration. Mr. Brock is here to help work out plans for increased production this year. He gave out the following facts, and incidentally paid his compliments to the loyal work of the State Farm bureau, and hit the agitators who were trying to sow discontent a square blow between the eyes. He said:

"Utah and Idaho, according to statistics furnished by the six beet sugar companies operating in these states, produced during 1917 a total of 137,250 tons of sugar. The records show that the various factories in these states handled over 1,126,000 tons of sugar beets.

"The 1917 sugar production was substantially the same as that of 1916, which, according to the figures of the United States department of agriculture amounted to 136,151 tons. The quantity of beets worked was slightly larger than in 1916, when it was 1,039,715 tons. The past season's crop was harvested from 120,000 acres, as against 110,346 acres harvested in 1916, giving an average yield in 1917 slightly under the 1916 yield. This fact is explained by the unfavorable weather conditions which prevailed and is by no means the normal yield in these states.

Supports 22 Factories.

"At the present time the Utah-Idaho district supports twenty-two beet sugar factories. Of these ten are owned by the Utah-Idaho Sugar company, eight by the Amalgamated Sugar company and one each by the Delta Beet Sugar corporation, Layton Sugar company, People's Sugar company and the West Cache Sugar company. The following are the crop figures for the several companies: Utah-Idaho Sugar company, beets paid for, 600,000 tons; sugar produced, 72,500 tons; Amalgamated Sugar company, beets paid for, 400,000 tons; sugar produced, 50,000 tons; Layton Sugar company, beets paid for, 44,000 tons; sugar produced, 5,750 tons; Delta Sugar corporation, beets paid for, 35,000 tons; sugar produced, 3,750 tons; West Cache Sugar company, beets paid for, 22,000 tons, sugar produced, 2,750 tons; People's Sugar company, beets paid for, 20,000 tons; sugar produced, 1,900 tons.

"The amount paid to the farmers for beets by the six companies amounted

(Continued on page 14)

BEET TOP SILAGE

By A. P. Hamilton.

Relative to the value of sugar beet tops fed in the field by turning the sheep or cattle on them or feeding them from the silo.

As yet we have fed them but very little from the silo but enough to know they are a very valuable feed. Until this year we have fed our beet tops in the field and found it very unsati-

(Continued on page 10)

DAIRYING

SAVING THE DAIRY FARM MANURE

By J. C. Beavers, Purdue University.

Few dairies have been run successfully without a farm. Some farms have been successfully conducted without a dairy. A combination of the two, however, gives opportunity for high efficiency. The manure from the dairy cows is a factor in efficient management which is frequently overlooked.

Soil fertility decreases by crop removal, leaching and slow combustion. As the diaryman feeds nearly all the crops grown, and usually some concentrates in addition, the loss of fertilizing constituents through crop removal should be negligible. To a knowledge of this fact, without a clear conception of the manurial value which may be lost from leaching and fermentation, may be attributed the decline in fertility of many dairy farms.

It is not only essential that the crops grown be fed; the plant food constituents voided by the animals must also be carefully preserved and returned to the fields. The Ohio and New Jersey experiment stations have shown from carefully conducted experiments that it is possible to return to the fields in manure around 70 per cent of the value of the plant foods contained in the feed and bedding used. A greater percentage is voided by the animals, but under the best systems of management some loss takes place. At the Ohio station on a concrete floor 74.7 per cent of the nitrogen, 77.5 per cent of the phosphorus, and 87.8 per cent of the potassium contained in the feed and bedding was retained in the manure produced by steers. This is doubtless somewhat greater than could be obtained from dairy cows, because milking animals utilize a greater per cent of the nitrogen in their feed than do steers. The increase is used in making milk, a large portion of which will remain on the farm if the skim-milk is fed at home.

The data just referred to indicate possibilities that are being obtained on many well-managed dairy farms where the value of conserving manure is fully appreciated. On many farms, however, manure is thought of not exactly as a worthless by-product, but as a by-product which should be hauled to the field at odd times when it has accumulated in sufficient quantity to become bothersome. It is on this class of farms that dairying sometimes becomes unprofitable because the soil is no longer productive. One of the main advantages of dairying, then—a fertile farm—has been lost.

Such cases are not due to gross neglect so much as to a lack of knowledge on how manure must be handled to secure the greatest value therefrom. In many instances the larger portion of the liquid manure is allowed to go to waste. The liquid part of the voidings of animals contains about one-half the total fertilizing value of all excretions. The urine usually contains about three-fourths of the total nitrogen and four-fifths of the total potassium, but only a trace of the phosphorus.

The supply of bedding used should be sufficient to absorb practically all of the liquid manure. For the dairy cow which stands in the stable most of the time, about eight pounds of straw per day will be required to keep her well bedded. If sufficient bedding is not supplied a well or pit should be built to catch the liquid manure.

Leaching is undoubtedly responsible for the greatest loss in dairy farm manure. Fermentation affects nitrogen only, but all fertilizing ingredients are subject to leaching. Not infrequently on almost constant stream of liquid manure may be seen trickling from the barn lot. A pool of liquid manure in one corner of the lot is a constant menace to the family health as well as a source of large loss in fertility.

The New Jersey experiment station reports from an average of four tests where solid manure was exposed to weather conditions an average of 80 days during spring and early summer the loss in organic matter was 36.4 per cent; nitrogen, 37.6; phosphorus, 51.9, and potassium, 47.1. In these experiments the largest losses took place during the summer months when weather conditions were favorable to rapid fermentation.

According to the above experiment station the manure produced by a 1,000-pound dairy cow in one year contains 117 pounds of nitrogen, 34 pounds of phosphorus, and 73 pounds of potassium. With nitrogen valued at 15c per pound, phosphorus at 8c, and potassium at 6c, the value of the manure from one dairy cow for a year would be $24.65.

Manure exposed from January to April during five different years at the Ohio station decreased in value from $3.01 to $1.85 per ton—a decrease of 38.6 per cent. If the manure from a dairy cow for a year be subjected to a similar loss it would amount to $9.51. This would be equivalent to a loss of 18c per hundred pounds on the milk of a cow producing 5,000 pounds a year. Many farmers who uncomplainingly endure the manure loss would instantly object should a milk dealer reduce the price paid for milk 18c per hundred.

The writer has often noticed the peculiar odor in the stable after it has been closed over night. He has also felt the penetrating effect of ammonia when removing accumulated manure from horse stables. This ammonia gas contains nitrogen which has been set free by hot fermentation—the result of a group of micro-organisms which thrive only in the presence of air.

The fermentation which takes place when air is excluded is largely putrefactive and is seldom responsible for loss of nitrogen. Losses from fermentation, therefore, may be best prevented by keeping the manure mass tightly compacted so that air is excluded.

Russel and Richards of the Rothamsted station found a much greater loss from a combination of leaching and fermentation than from fermentation. Manure stored in heaps in the open yard for three months lost 20.5 per cent organic matter and 24.4 per cent nitrogen. That stored under shelter for the same length of time lost 7.5 per cent organic matter and 6.9 per cent nitrogen. It appears from the various experiments that rain is the great enemy responsible for most of the loss in manure. Measures for preventing losses from both leaching and fermentation may be easily combined. Leaching may be prevented by keeping the manure under shelter; hot fermentation is most effectively controlled by keeping the manure mass tightly compacted. A cemented pit constructed so that a wagon may be backed into it, or so a wagon may be pulled in and out, makes the most desirable place to store manure.

Many men recommend that manure be hauled to the field daily. Besides being impractical as certain seasons of the year, this method is not as efficient as storing in a pit at certain seasons of the year. During the hot dry weather of July and August, slow combustion takes place very rapidly in all organic matter directly exposed to the rays of the sun. This rapid loss of organic matter is accompanied by a similar loss of nitrogen. These losses must be great if manure spread and left exposed during the hot months. The percentage loss of these valuable constituents would not be nearly so great in fresh manure stored in a water-tight pit.

The use of a water-tight concrete pit can not be too strongly recommended. J. H. Hill of Randolph county, Indiana, says a concrete feeding floor will pay for itself in two years. Brother Leo, manager of Notre Dame University farm, says a cemented pit or feeding floor will pay for itself in one year if kept in constant use.

The dairy farmer's responsibility does not end with the proper conservation of the manure produced. Before deciding upon a definite system of usage, the topography of the farm, rotation of crops, and the time, method and rate of application should be carefully considered.

Most of the manure used on a hilly farm should be plowed under shortly after spreading except that applied as a top dressing to hay crops. There is too much danger of soluble plant food being lost through surface drainage to take chances on leaving the manure exposed on the surface. On level or undulating farms the manure may be spread as made with little chance of loss, except during the hot summer months.

The rotation practiced has considerable influence on the returns secured from manure. At the Indiana experiment station six tons of manure applied annually on corn grown continuously on the same land has given a return of $1.02 in increased value of crop for each ton of manure applied as an average for 26 years. In continuous wheat culture an annual application of four tons to the acre has been worth 1.42 per ton. In a corn-wheat rotation the same amounts applied to the respective crops has given a return of $1.79 per ton. Where half the above amounts of manure were applied to each crop the return per ton of manure was $2.40. The returns secured depend not only on the crop grown but on the rate of application.

At the Ohio station manure has been applied for 20 years at the rates of 16 and 8 tons per acre, half on corn and half on wheat, in a five-year rotation of corn, oats, wheat, and mixed clover and timothy for two years. The 16-ton application has given an increase in all crops to the value of $2.52 for each ton of manure applied and the eight-ton application $3.07. The Pennsylvania station has secured similar results from different rates of application. All evidence available shows that the greatest returns may be secured from manure when it is applied in rather small applications.

This should be considered by the farmer who applies most of the manure to the fields near the barn while the back fields go without. A better policy would be to spend a little more time hauling it to the back fields and get an increased return of 50 to 75c per ton by so doing.

Frequent light application are better than occasional heavy applications. When heavy applications are made,

(Continued on page 13)

Use SHARPLES To Prevent Cream-Waste

Sharples is the *only* separator that skims absolutely clean at *all* speeds. All other separators lose considerable cream when turned below speed—admitted by leading experiment stations and all separator manufacturers. Average loss from this cause is 10 lbs. of butter per cow per year, or 80,000,000 lbs. in the United States alone! Sharples would save it all!—due to the wonderful Suction-feed, which automatically regulates the milk-feed so as to insure clean skimming whether you turn fast or slow.

Sharples is an absolute necessity *now*—when the world is clamoring for "more fat." It is the *only* separator that gets *all* the butter-fat out of the milk. Prevent waste by getting a Sharples—and get it *now*, while you can. Ask nearest Sharples dealer to explain it.

SHARPLES Famous Suction-Feed Skims clean at any Speed SEPARATOR

the *only* separator that:
—skims clean at widely-varying speeds
—gives cream of unchanging thickness—all speeds
—has just *one* piece in bowl—no discs
—skims milk faster when you turn quicker
—has knee-low supply tank and once-a-month oiling

Made and guaranteed practically forever by the oldest and greatest separator factory in America. Over a million Sharples users! See your dealer and write for catalog today —address Department 104

The Sharples Separator Co.
West Chester - - Pennsylvania
Sharples Milkers—used on nearly 400,000 cows daily
Branches: Chicago San Francisco Toronto

91E

Looking Forward into 1918

While there is much in the way of uncertainty, one thing is sure—close association with a strong bank having a stable policy will be of benefit to you.

This bank has been giving dependable service to customers for nearly 59 years.

Take up with one of our officers now the advisability of bringing your account here.

Walker Brothers Bankers
SALT LAKE CITY

REO
"THE GOLD STANDARD OF VALUES"

This New Reo Light Four Is a Handsome Motor Car

AT THE NEW YORK SHOW, in January, the Reo exhibit was, to an even greater extent than ordinarily, the mecca of the crowds.

YOU'D THINK, PERHAPS, that at the national automobile show, and especially in the world's greatest metropolis, where dealers and buyers go to see what is latest in construction and design, that the ponderous multi-cylinder machines would attract the most attention.

ON THE CONTRARY, there was vastly more interest shown in the types of cars that are designed to supply that great American need for a practical, economical, five-passenger touring car or three-passenger roadster.

THIS YEAR, more than ever before, buyers are paying less attention to fads and more to practical things. More to cost of upkeep than to first cost.

AND THIS REO—this new Light Four—stood out above all the rest.

IT IS SUCCESSOR to the greatest four-cylinder automobile ever built—that wonderfully efficient, wonderfully sturdy Reo the Fifth, that for eight years maintained its supremacy.

THIS IS A REFINEMENT of that great car. All fundamentals have been retained and every detail has been refined to the last degree. In a word this latest Reo represents all that has gone before and just that much more of Reo experience.

THIS IS A REAL CAR—a full five-passenger Light four. Not a skimpy—not a little four.

IT DOES SEAT FIVE full grown adults—you don't have to use a shoe horn to get them in.

BODY DESIGN IS BEAUTIFUL—it is up to the minute in every line and curve and in every detail of upholstery and finish and appointments.

IT IS JUST THE CAR you would specify if having one made to your own order.

FOR HERE ARE COMBINED roominess with economy of operation; beauty in appearance with sterling mechanical quality;

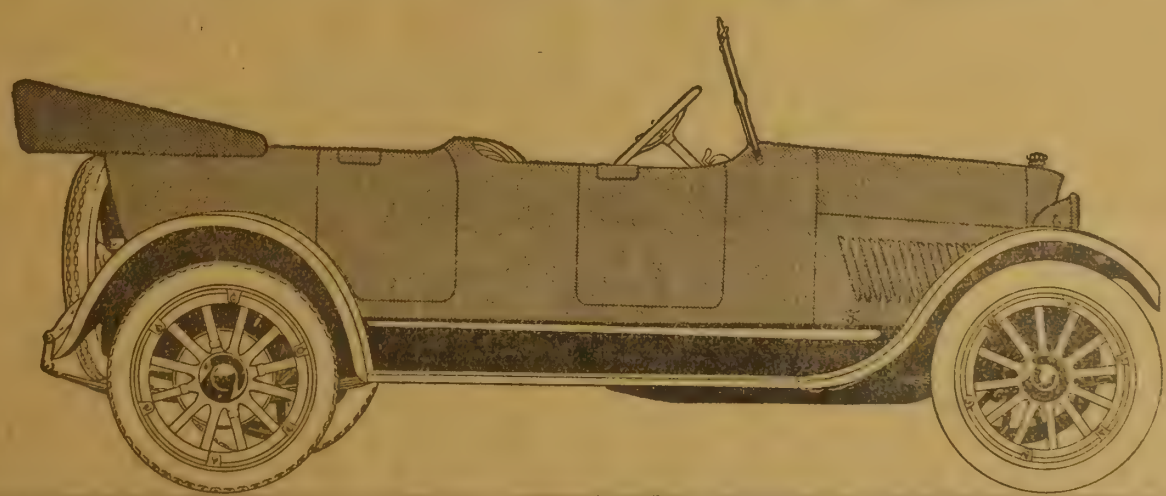
AND LOW UPKEEP—that quality for which Reos have always been famous.

OUTPUT IS LIMITED—must be this year, for we also are doing our part to assist Uncle Sam.

SO YOU'LL HAVE TO HURRY. Make your decision—see your Reo dealer and place your order well in advance of the time you will want delivery else you will surely be disappointed.

TODAY—won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan



THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

A good lesson can be learned from the report of the boys and girls who did such splendid work in growing beans and corn.

Keep your Liberty Bonds. Do not sell them unless it is imperative that you should. The way for you to help the government is to hold the bonds.

Put away some ice during this cold spell. When the extreme hot days of summer come again a little ice will be helpful for the conserving of food. Ice is a very nice thing to have during the summer and it cost so little.

Can you tell how much milk each of your cows gave during 1917. Did it cost you more for the keeping of the cow than you would have spent for the milk and butter? You ought to know—keep a record this year and find out.

During this cold spell are you giving proper attention to your livestock. Protection for extreme cold will save feed. The loss of one animal is expensive. For your profit and the animals comfort see that they have good care during the winter.

To secure the maximum results from any tractor the one in charge of it must know how to run it. He should know more, he should be able to tell what is the trouble when it does not run. Do not expect to get the best results unless you learn all about any tool, implement, machine, tractor or automobile.

The information given on another page about the regulations by the Food Administration in regards to the price of bran and other mill feeds, should be helpful to every farmer who is buying this kind of feed. You ought to know the price of wheat in your community and the price of bran can be easily figured from this.

There is no question about the business advantage which goes with neat stationery. The name of your farm and your own address, well printed on your letters and envelopes, puts you in the class with business men, and always attracts attention. Use a pen if possible in writing letters and use good paper. The expense of these things is not great, but the profit is large.

The farm is hardly keeping up with the times, that is without a gasoline engine, one of the greatest labor savers that has ever been invented. A handy man with a gasoline engine can do a lot of work around the farm. It can be hooked up to run various kinds of machinery and take the place of several hired hands.

Parents cannot be too careful of the kind of company their children keep. Choice companionship is about the best educational method a boy or girl can have. Knowledge and study have their own uses, but they are not made the best of, if the pupil is indifferent as to his company. It makes little difference how studious and smart a boy is, if his companions are low in conduct, language and opinion, his efforts to learn will bear no fruit. He will be like them. The influence of a bad companion is far reaching.

THE SEED SITUATION

We again refer to the question of seeds. We want to impress upon every one of our readers the importance of planting the best possible seed and securing it just as soon as possible. If you nave it already stored away so much the better. Seed corn is one of the serious problems and we are now using a great deal more than usual in the growing of corn for silage, immediate action should be taken to secure what you need. Test your seed for germination, you should not take any chances. Seed is one of the important factors for increased production.

THE ROUND-UP AT LOGAN

One of the most successful Round-Ups ever held in the State was at Logan last week. The attendance of farmers and their wives was given out as over 500.

These men and women were impressed with the importance of the work of winning the war and will carry this message to their homes.

Conservation and production were emphasized in the lectures, class rooms and at public meetings where leading men and women of the State took part. Such gatherings as these make for better agriculture and better homes.

GIVE THE WOMEN CREDIT

Often men succeed because of the help given them by their wives, but they are not always willing to give the credit where it belongs.

If all the facts in the case were known most farmers owe much of their success to the management and good judgment of their wives. No doubt there are many who do not realize just how much they are indebted to the good women who preside over their homes and see that they are supplied with three square meals a day. It would be well for the men folks to stop occasionally and take stock of the situation; it would make them more appreciative. Let us give our mothers, our wives and our daughters due credit for the share they bear in the family's welfare.

KEEP YOUR BREEDING STOCK

Livestock men and farmers are making a mistake by sending their breeding stock to market. To many brood sows have been slaughtered. Too many young beef cows are being sacrificed. This is a serious condition when we consider the shortage the world over.

When we wake up to the true condition of the worlds supply of livestock it may be too late to get a supply of breeding stock unless we pay a great deal more than we have been selling out for.

One prominent authority recently said:

"Without sufficient seed, there can be no adequate crop of any kind. A world scarcity and greatly increased needs everywhere for all animal products can have but one meaning, and that is sustained market prices for all kinds of livestock during the war and for years after."

KEEP THE HOG CLEAN

It is a mistaken idea that the hog prefers a dirty or unclean place to live in.

To be successful with hog raising requires something more than a mud hole and a stale swill barrel. It requires a man on the job who has a keen realization of the need of good care and the right kind of feed. To permit the hogs to frequent a wallow made by the seepings from the manure heap, to feed them on corn exclusively and make them drink dish water from the kitchen, is to pave the way for sickness and disease. The man who keeps his hogs under such conditions should not be surprised if they succumb to the cholera or some other germ disease and he has no one to blame but himself.

FARM AND LABOR SURVEY

It is no small task that has been undertaken by the Church of Jesus Christ of Latterday Saints, to make a farm and labor survey of the state at the request of state officials.

Our government has asked for a great deal of information and in this survey it will be secured.

When the ward teachers of the Church visit you, asking for the information that the government desires every assistance possible should be given them. Blank reports are furnished for every farm, to properly fill them out is all that is desired.

The information obtained will be used by the officials to help in any way possible. The amount and kind of labor required will be made known and ever effort possible will be made to supply it.

KEEP THE HENS

At the present time there is an unusual good market for poultry. One should not be influenced to sell the hens that are or will be laying because they will be needed to produce eggs so that our poultry products can be increased as the government has asked. The chance to sell at a high price when feed is costing so much is often given as the reason why some people sell their breeding stock.

A number of times this mistake has been brought home to us when we have sold our breeding stock because we could get high prices.

We are asked to double the number of chickens on the farm. How are you going to do it? Eggs, we must have in order to get the chickens.

Now is the time to plan for your increased supply. Makes no difference whether you are going to use the old hens or the wooden hen to do the hatching now is the time to get busy. Plan early and know where eggs can be secured. We must do our share in the increased production of poultry.

LABOR-SAVING ON THE FARM

The use of machinery and better farming methods will help the labor problem. This year we are asked to increase production with a prospective labor shortage. If our labor is properly organized here in Utah we believe that we will be able to solve our own labor problems.

Make a study of your farm and plan how labor-saving machinery or implements can help you. Co-operation between neighbors in the purchase of this machinery may be advisable.

The planning of your work and the system you put into use in carrying out these plans will greatly help.

The, big problem is to save labor to do your work better in order to save time and man power.

Efficiency of farm labor is often as important as its distribution. Two young men were plowing clover sod. Each had two horses hitched to a 14-inch walking plow. It was heavy plowing, and each team was barely able to plow 1½ acres a day. One morning the men decided to try three horses on one plow. They did so and to their great surprise one man and three horses easily plowed 3 acres per day. They plowed as much as two men and four horses had previously done and did it much more easily. It was even easier for the driver, because it is always easier to drive a team that is not overloaded. The new arrangement released one man and one horse for other work.

Farm Survey to Be Made

Our government is making a farm survey throughout the United States. In Utah the church organizations will be used to make the survey for the government.

At the request of Governor Simon Bamberger, the Church of Jesus Christ of Latter-day Saints, through its regular ward teachers' organization, will in the immediate future make a survey of farm conditions in the State of Utah, which, it is believed, will be of the utmost importance to the food producing industries of the state for the coming year.

On the facts as ascertained through this survey will be determined the policy of many industries depending on farm production for their existence; and of several state and federal organization which have to do with those industries. It is hoped, too, that the farmers themselves will analyze the results of the survey carefully, and that each will do what he can to remedy any danger of underproduction in one line of foodstuff, and of overproduction in another, that may threaten.

The needs of the farms for laborers will be determined in the survey and just what may be expected from the various kinds of livestock. Any tillable land that threatens to be unproductive this year will be reported, in order that intelligent effort may be made to bring it under cultivation. It will be ascertained just how the draft law has affected the farms, and how it will affect them this year; what should be done by the canning industry to assure a capacity supply of goods for canning; whether the acreage of sugar beets will be sufficiently large to keep the factories in the state busy; whether any tendency is shown on the part of farmers to put their land in crops that will require a minimum of labor, and whether anything can be done to counteract such a tendency of the many questions to which it is hoped a definite answer may be obtained when the survey has been completed.

Every Farm in the State.

The survey contemplates a fairly exact record from every farm in the state, to be taken by persons working under the direction of officials of the Church. It is designed to accomplish at once all that several suggested surveys could accomplish, and thus to avoid a large amount of unnecessary work and duplication. The canning industry for example, will not require any other survey. An accurate account will be obtained, it is hoped of the livestock industry of the state, thus doing away with several surveys planned of that industry. Another survey that has been asked for, and that will be unnecessary if this one is completed satisfactorily, is that of the labor situation throughout the state; still another is that of crop production, and the fact will be determined whether the farmers in any one section are yielding to the scarcity of labor by failure to increase crop production as requested by the federal government, and as is necessary throughout the country if the war is to be won. It is hoped this survey will take the place of contemplated action by the department of agriculture working through its own special agents in Utah or through the Agricultural college; by state officials, including the livestock board and the industrial commission; by the manufacturers of Utah dealing in foodstuff; by the state council of defense—in fact by any authority or organization dealing with food production in its many phases.

Every one should help by giving a complete and accurate answer to all questions.

The survey is for the help of the government. No individual can use the information only for the help of the nation.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

BEAN AND CORN PRIZES AWARDED

Last spring the Young Men's Mutual Improvement Associations offered a number of prizes as part of the plan to increase and conserve food.

The details of the work was in charge of their field secretary Oscar A. Kirkham.

Moris Gottfredson of Manti won the first prize for corn having produced 1080 pounds of corn on one eighth of an acre or at the rate of 154 bushels per acre. His prize was $25.00.

Other prizes for corn crops were awarded as follows: Dean Baum of Timpanogas ward, Utah stake, $20 for a yield of 930 pounds; Gilbert G. Heaton, of Moccasin, Kanab stake, $15 for 862 pounds; Bryant Tingey of Brigham, $10 for 838 pounds; Harlan Boyer of Springville, $5 for 770 pounds; Oakley Noakes of Springville, $2.50 for 612 pounds; Leonard Heaton of Moccasin, $2.50 for 600 pounds; Thalman Hasler of Provo, $2.50 for 450 pounds; Mariner Cox of Bunkerville, Nevada, $2.50 for 496½ pounds; Clarence Durant of Pioneer ward, Utah county, $2.50 for 496 pounds; Albert Anderson of Provo, $2.50 for 182 pounds; Walter Mann of Brigham, $2.50 for 100 dozen ears.

Winners In Bean Contest.

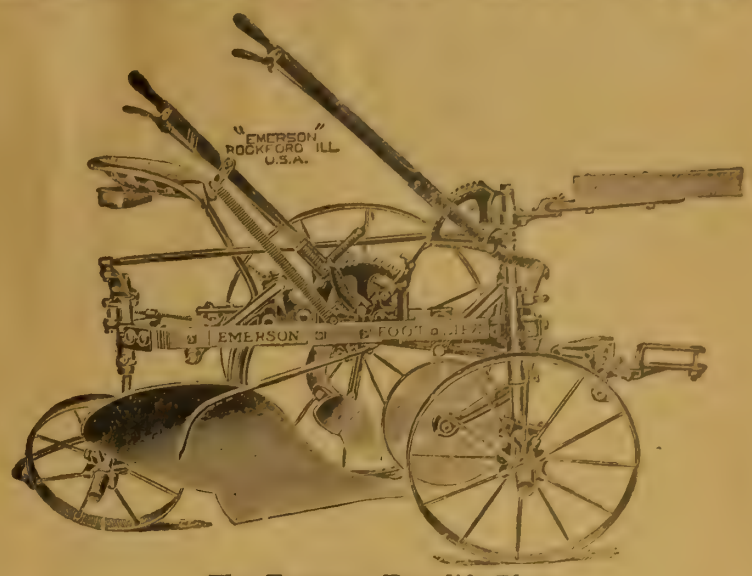
The winners in the bean contest are as follows: Charles A. Brown, Springville, $25 for 447.6 pounds on an eighth of an acre of land; Vernal Facer of Brigham, $20 for 412 pounds; Walter Toggant of Lewiston, $15 for 400 pounds; Hyrum Leavitt of Lewiston, $10 for 385 pounds; Jesse Meldron of Provo, $5 for 325 pounds; Leonard Hall of Paradise, Utah, $2.50 for 308 pounds; Lloyd Forsgreen of Preston, Idaho, $2.50 for 285 pounds; Presley Timothy of Roosevelt, $2.50 for 284.3 pounds; Irma Hill of Payson, $2.50 for 284 pounds; Reynolds Harmer of Springville, $2.50 for 275 pounds; Othello Bird of Springville, $2.50 for 274 pounds; Joseph Peery Peart of Richmond, $2.50 for 266 pounds; Glen Walter of Richmond, $2.50 for 262 pounds; Richard A. Madsen of Utah county; $2.50 for 260 pounds, and Loa Stevenson of Lewiston, $2.50 for 260 pounds.

There were 715 entries in the contest and an entire yield of 125,000 pounds of beans and 43,000 pounds of corn was gained. About 30 stakes were represented. Navy and Mexican pinto beans were planted for the most part and Australian flint corn.

A sum of $200 in all was offered by the Y. M. M. I. A. general board for the best eighth acre of corn and the same of beans raised by a boy member of the association. Later, girls were allowed in the contest with the result that two were prize winners.

The seed was for the most part distributed personally by Mr. Kirkham, assisted by Richard Sloan, the two making the trips to the various districts by automobile and also giving instructions to the boys as to just how the crops were to be planted and cultivated. In addition to the big crop of foodstuffs raised the general Y. M. M. I. A. board believe the greatest value of the contest has been in the fact that many boys have for the first time had the entire responsibility of cultivating a tract of land and have learned the value of raising foodstuffs.

Emerson Foot-Lift Plow



The Emerson Foot-lift Plow

Both levers on the Emerson Foot-lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow, leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

MILLER-CAHOON COMPANY

Murray, Utah — Idaho Falls, Idaho

Are You Doing Your Bit?

Our Big Seed Catalogue Will Help You

SEND FOR FREE COPY TODAY

PLACE YOUR SEED ORDER EARLY

Vogeler Seed Company

SALT LAKE CITY, UTAH.

POULTRY BREEDING "DON'TS"

Don't breed from all the hens you have, unless you have all strong, healthy, vigorous stock. Select the best you have for breeders.

Don't breed from any male or female that has ever been seriously sick.

Don't breed from immature pullets or pullets that have been laying only a few months.

Don't breed from hens or pullets that have been forced for egg production in winter.

Don't breed from pullets at all if you can use hens instead.

Don't use a general-purpose cockerel that is immature or less than about ten months old, or a Mediterranean-class male less than nine months old.

Don't force the hens before or during breeding season.

Don't neglect to feed green food and sprouted oats.

Don't expect a lazy, shiftless, unnaturally-fed hen to produce strong vigorous chicks.

Don't forget that the male is more than half the flock.—Poultry Department, University of Nebraska.

GOOD SEEDS

BEST IN THE WORLD

Prices Below All Others

I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded

Big Catalog FREE

Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

HOME

HOW TO SAVE WHEAT

Here are some ways to save wheat.

Corn Meal Muffins.

1 cup milk or water (8 oz.).
1 1-3 cup flour (5 1-3 oz.)
Two-thirds cup corn meal (3 1-3 oz.)
1 to 2 tablespoonful fat (½ oz.).
1 to 2 tablespoonful sugar (½-1 oz.)
1 egg (2 oz.).
4 teaspoonful baking powder (½ oz.).
½ teaspoonful salt (1-8 oz.).

Method 1—Mix liquid, egg and melted fat, add dry ingredients well mixed.

Method 2—Scald corn meal with hot liquid, add egg, melted fat and dry ingredients. Bake in a moderate over 25-30 minutes.

Approximate cost made (with water), 11c.

Approximate cost made with milk), 13c.

Number of muffins, 8.

Oatmeal Muffins.

½ cup milk or water (4 oz.).
1 cup cooked oatmeal or rolled oats.
1 egg (2 oz.).
2 tablespoonsful fat (1 oz.).
1½ cups flour.
2 tablespoons sugar (1 oz.).
½ teaspoonful salt (1-8 oz.).
4 teaspoonsful baking powder (½ oz.).

Cook oatmeal, using one part oatmeal to two parts water. A larger proportion of water makes too soft a mush and gummy muffins. Mix liquid, oatmeal, egg and melted fat. dry ingredients. Bake in a moderate oven. Bake 25-30 minutes. Left over oatmeal could be used for this.

Approximate cost with water 13c.

Appriximate cost with milk, 15.5c.

Number of muffins, 10-12.

These will be moist but have a nutty flavor which is very desirable.

Oatmeal Muffins No. 2.

1½ cups milk (12 oz.).
2 eggs (4 oz.).
2 tablespoonsful fat (1 oz.).
2 tablespoonsful sugar (1 oz.).
1 teaspoonful salt (¼ oz.).
2 cups rolled oats (5½ oz.).
1 cup flour (4 oz.).
4 teaspoonsful baking powder (1 oz.).

Pour milk over oats and let it soak half and hour. Add eggs and melted fat. Add to dry ingredients, which have been sifted together. Bake 25-30 minutes.

Appromiate cost (made with milk), 25c.

Makes 12 muffins.

These are a little richer and have a finer texture.

Rye Bread Made Into Rolls.

4 cups rye flour.
1 teaspoonful salt.
1 tablespoonful fat.
6 teaspoonfuls baking powder.
1½ cups milk.

Sift dry ingredients. Add milk and melted shortening. Knead on planed board, put in greased pan. Allow to rise in a warm place 20-25 minutes. Bake in a moderate oven 45 minutes.

Approximate cost, 22.6c.

Makes 20 rolls.

Rye and Corn Meal Bread.

3 cups rye flour.
1 cup corn meal.
1 teaspoonful salt.
6 teaspooonsful baking powder.
1 tablespoonful sugar.
2 tablespoonsful fat.
1½ cups milk, or milk and water.

Sift dry ingredients. Add liquid and melted shortening. Beat well, put in greased pan. Let stand in a warm place 20-30 minutes. Bake in a moderate oven 50 minutes. This dough may be baked quickly as muffins if desired.

"Nothing in the world is so good as goodness. It binds your fellow creatures to you, and you to them; it leads to the improvement of your own character; and it gives you real importance in society, much beyond what any artificial station can bestow." Benjamin Brodie.

DO YOU KNOW OATMEAL?

Do you know that oatmeal makes delicious puddings and other good hings?

Of course, you know it is a good breakfast food, but it is even better fixed up for dinner or supper. It makes

Excellent Puddings
Wholesome Bread and Cookies
An Appetizing Soup for a Cold Day
A Baked Dish for Dinner in Place of Meat.

To cook oatmeal, stir slowly 2½ cups of rolled oats into five cups of boiling water which has in it 2½ teaspoons of salt. Cook for one hour or over night in a double boiler or fireless cooker. This will serve five people. If you want it for two meals, cook twice the amount to save time and fuel.

Oatmeal Pudding.

Try one when you have a light dinner or supper.

Oatmeal Betty or Brown Pudding.

2 cups cooked oatmeal, 4 apples cut up small, ½ cup raisins, ½ cup sugar, ¼ teaspoon cinnamon, 2 cups cooked oatmeal, ½ cup molasses, ½ cup raisins.

Mix and bake for one-half hour. Serve hot or cold. Any dried or fresh fruits, dates, or ground peanuts may be used instead of apples. Either will serve five people.

Scotch Soup.

With bread and dessert it is enough for lunch or supper.

2½ quarts water, 1¼ cup rolled oats, 5 potatoes cut in small pieces, 2 onions, sliced, 2 tablespoons flour, 2 tablespoons fat.

Boil the water and add the oatmeal, potato, and onion, ½ tablespoon of salt and ½ teaspoon pepper. Cook for one-half hour. Brown the flour with the fat and add to the soup. Cook until thick. One cup of tomato adds to the flavor. Serves five people.

Oatmeal Bread.

Is delicious with all meals—try it.

1 cup milk or water, 1 teaspoon salt, 2½ cups wheat flour, 1-3 yeast cake, 1 cup rolled oats.

Scald the liquid, add salt and pour over the oats, cool half an hour, add the yeast mixed with ¼ cup lukewarm water, and the flour. Knead and let rise until double the size. Knead again and let rise in the pan until the size is doubled. Bake in a moderate oven for 50 minutes. Makes one loaf weighing 1¼ pounds.

Spiced Oatmeal Cakes.

The whole family will like these, and they are easily made.

1½ cups flour, ½ cup cooked oatmeal, ¼ cup sugar, ¼ cup raisins, ¼ teaspoon soda, ½ teaspoon baking powder, ½ teaspoon cinnamon, 3 tablespoons fat, ¼ cup molasses.

Heat the molasses and fat to boiling. Mix with all the other materials. Bake in muffin pans for 30 minutes. This makes 12 cakes.

Especially crisp and good as well as cheap are

Scotch Oat Crackers

2 cups rolled oats, ¼ cup milk, ¼ cup molasses, 1½ tablespoons fat, ¼ teaspoon soda, 1 teaspoon salt.

Grind or crush the oats and mix with the other materials. Roll out in a thin sheet and cut in squares. Bake for 20 minutes in a moderate oven. Makes 3 dozen crackers.

Instead of meat, cook this appetizing dish for your family.

Baked Oatmeal and Nuts.

2 cups cooked oatmeal, 1 cup crushed peanuts, ½ cup milk, 1 teaspoon vinegar, ¼ teaspoon pepper, 2½ teaspoons salt.

Mix together and bake in a greased pan 15 minutes. This is enough for five people.

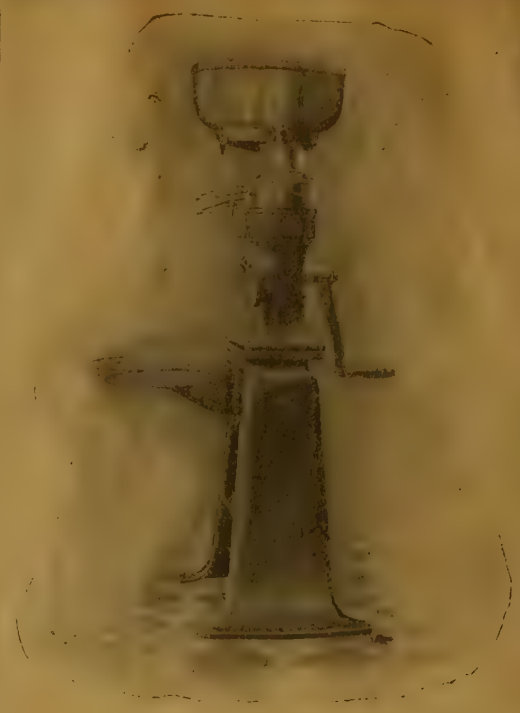
Oatmeal is a good, inexpensive, nutritious food.

BANG!

"Did you know that the First National bank had busted?"

"Yes; I heard the report."

VEGA SEPARATORS



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1577 Wazee Street Denver, Colo.

LEFT-OVER RICE

Although rice has remarkable food value, it has little individual taste, and so takes on the flavor of the dish with which it is combined. This quality makes rice an excellent foundation for milk and cheese dishes, or combination with meat, chicken and fish in stews. Rice can be combined with any vegetable, made into a variety of desserts, used to thicken soups or mixed with wheat flour or cornmeal in bread making. Even a spoonful left over can be stirred into bread, mixed in chicken stuffing or dropped in the soup pot. Left-over rice may be browned in fat for breakfast or made into cakes by adding an egg, a little milk, flour to thicken and a teaspoon of baking powder. These rice cakes are delicious with syrup.

Rice Cornbread.

Cooked rice can be used in any cornbread dough. It adds lightness to the bread. From the rice growers of Louisiana comes this recipe for rice cornbread.

3 eggs, 1 pint milk, 1½ cups boiled rice, 1½ cups cornmeal, 2 teaspoons fat, 1 teaspoon salt, 1 teaspoon baking powder.

Beat eggs very light, add milk, and other materials. Beat hard and bake in shallow greased pan in hot oven.

Rice Hash.

Put in a pan one cup each of boiled rice, cooked meat cut fine, and hot water. Season with one teaspoon each of salt, chile pepper, and chopped onion. Boil fifteen minutes.

Baked Hash of Rice and Meat

Put in a stew-pan one cup each of chopped meat, cooked rice and milk; two tablespoons of fat, one teaspoon of salt, one-fourth of a teaspoon of pepper. Stir for one minute, then add a well beaten egg. Turn the hash into a baking dish and bake twenty minutes.

Roast Goose or Duck Stuffing.

Four onions, four apples, four leaves each of sage and thyme; fry these in two tablespoons of fat till brown; add boiled rice until of a desired stiffness. Season with salt, pepper and cayenne.

Codfish Balls with Rice

One pint of codfish, two pints of potatoes, one cup of boiled rice, one tablespoon of fat, two beaten eggs, three teaspoons of milk. Mix together and make into balls and fry in deep fat. Serve hot.

Rice Stew.

Boil together one can of English peas, one-half cup of rice, one teaspoon of salt, pepper to taste, one tablespoon of fat, and one cup of sweet milk. Thicken with flour. Serve very hot in a hot dish. Cover the top with grated cheese before sending to the table.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

HOW TO SAVE FOOD.

Vegetables.

Use more vegetables and potatoes. Make fruits and vegetables into salads and attractive dishes. Feature vegetable dinners and vegetable salads of all kinds. Encourage the use of cheese with salads. We have a great surplus of vegetables and they can be used by substituting them for staples so the staples most needed will be saved.

Milk.

Use it all. Economize on milk and cream except for children. Serve buttermilk. Serve cottage cheese regularly in varying forms; it is especially nutritious. Use skimmed milk in cooking. A great quantity of it goes to waste in the country. Use cheese generally. The children must have whole milk, therefore, reduce use of cream.

Fats.

Serve as few fried dishes as possible so as to save both butter and lard and in any event use vegetable oils for frying, that is, olive oil, cotton seed oil, vegetable oil compounds, etc. They are equally good. Serve all butter in standard pats for guests and employes. A butter pat machine promotes economy. Trim all coarse fats from meats before cooking and sell the waste fats to the soap maker, thereby increasing supply of soap and glycerine. We are short of soap fats ,as our supplies of tropical oils for soap making are much reduced. Do not waste soap.

EAT THE CHEAP ROOSTER

It is good farm economy to eat the rooster. For roasting of course the housekeeper wants a good fat hen, but for chicken dishes that call for slow cooking let the rooster go into the pot. He is full of meat and flavory, nutritious juices. Slow cooking and the right seasoning will convert the low priced rooster into dishes that are universally liked—there is pot pie and chicken stew and a host of others. If a rooster that is not wanted for dinner is "eating his head off" in the barn yard, can him for future use and save the stock for soup.

Chicken "Pilau".

The roster is the foundation for that famous dish of chicken and rice which the French call "Pilau". The combination has remained an American favorite through all the changes of spelling. The Florida boys, who love concoct this stew when camping in the woods, call it Perlew." Make it by boiling the chicken until the meat comes off the bone. Season well, and add enough rice to thicken the stew. Cook until the rice is soft. The stew should be thick enough to eat with a fork.

This stew served with a green salad or stewed fruit makes a complete meal, as the rice takes the place of bread. The Spanish, who are very fond of this chicken and rice combination, add pimientos just before removing the stew from the fire, and the stew, when served ,is a complete one-piece dinner.

HELPFUL HINTS

A roll of adhesive tape such as doctors use to hold a wound together is one of the most useful things I have around my house. It is better for mending a rent in heavy goods than tailor's tissue, always ready to mend a hole in the baby's doll, the rubbers, rain coats, books, and it will suggest several other uses if you keep it near at hand.

* * *

To freshen corduroy—In making over a corduroy dress I found it so badly wrinkled that I could do nothing with the skirt. I turned it and rubbed it on the wrong side with a damp cloth, preparatory to making an attempt to press it; but discovered it was so smooth it did not need pressing. I hung it up to dry, and it still looks like new, two months later.

* * *

To Clean Jewelry—Jewelry of all kinds can be beautifully cleaned by washing in soapsuds, to which a few drops of ammonia have been added. Shake off the water, and lay in a box of sawdust to dry. A simple as this sounds, it is the best way to clean pins, chains, or any jewelry, as it leaves no marks or scratches.

* * *

To cook canned peas so they will taste like fresh ones try boiling with a small onion. The onion taste cannot be detected.

* * *

Better Baked Potatoes—When baking potatoes place them in a tightly covered pan or baking dish and they will bake quickly without forming a hard, thick crust as they do when placed on the gate.

* * *

For Lemon Pies—When making lemon pies, quarter the lemon, remove seeds and run through the food chopper—rind and all. By this method there will be twice the amount of juice and the rind will impart a delicious flavor to the pies.

TREES FOR SHADE

Shade trees do not always have the consideration that they deserve. The farm home always has a vacant appearance without trees. They shade the home grounds and protect the home from the burning rays of the sun; they check and deflect the chilling winter winds; they impart moisture to dry parching winds. Trees properly placed on the home grounds emphasize and heighten the effect of the buildings; they give the farmstead a homelike appearance that cannot be had without them.

The kind of shade trees best suited to your conditions may not be suitable for your neighbors. One should study his conditions and become familiar with the adaptations of certain trees if possible. Still it is not easy to make a mistake in tree planting. The important thing is to plant trees.

Some people prefer both shade and fruits. This is not a bad plan if one has limited space. But farmers who have plenty of land for orchard, nuts, vines, etc., will generally find it best to plant hardy trees suitable for shade only in his yard rather than try to combine utility with beauty. Pecan, hickory, walnut and a few other trees make most excellent shade as well as bear nuts, but they are slow growers and it is a question as to whether it is not better to plant trees that grow fast and soon supply shade and other protection, rather than try to combine nuts and shade. That is a question each should consider and settle for himself.

There are a number of hardy, beautiful and useful trees which may be selected to plant near our homes. Most every home owner has his preference and none other will please him quite so well.

The elms are very pretty, generally hardy and grow comparatively fast. The American Elm has been popular since the first settlers came to America. The Indians had many traditions concerning the elm, and as history readers remember, William Penn made one of his famous treaties under a great elm near Philadephia, said to be "the only treaty never sworn to and never broken."

There are several species of elms attractive and useful for adorning home grounds.

The maples are among our most attractive trees. They are much more common farther north than in the Southwest, still they may be found in many yards and on lawns. They grow fast and are comparatively hardy, although maple scale soemtimes gives trouble. Silver maple with its shining, lobed leaves and symmetrical branches is well worth considering. Sugar maple, red maple, Norway maple are others are grown.

Box-elder is very closely related to the maples. It, botanically speaking, belongs to the same family, Acer. It makes a dense, heavy, cool shade, as its habit of growth is suitable for this purpose. When left it produces a very dense, heavy head and has an enormous leaf surface.

The poplars are preferred by some. They grow very fast and soon become useful, but in some trying climates and on thin or shallow soils may soon fail. The Lombardy has a very tall habit of growth and properly placed gives grace and emphasis to the home. However, in old age they present a rather pathetic appearance, as the branches die and the tree becomes "straggling." The Carolina poplar has a more dense head and is better for shade.

The oaks are very desirable as a general rule. There are many of them, all of them worthy of attention. They are durable, attractive and long-lived. For shade and beauty and strength in setting they are very desirable for the yard or lawn. The oaks will give satisfaction.

Some prefer one or more evergreen trees for the green effect during winter. For this reason the holly is one of the prettiest. It does not thrive over a very wide area, as it requires good soil, a moist climate and a temperate atmosphere. The magnolia is also very desirable where it can be grown. Its large showy blossoms have often been admired and our Southland praised because of them. The cedar is far from being undesirable, yet it is often the host of the cedar rust fungus which is likely to attack the apple. For this reason it should not be planted near the orchard.

There are many other trees, such as the scycamore, the cottonwood, the mulberry, the catalpa, the black locust that are worthy of consideration.

YOU AND I

Need pork to win the war
Our government will give us a square deal.
Let's breed more sows.

THE POTATO.

In making a survey of the products markets it is a very noticeable factor that the highest prices usually prevail where the product must be had in the largest quantity and most especially so with the potato. Idaho has gained a great reputation for her potatoes and I am sure a great many of our Utah soils are able to produce potatoes of equally good quality and in the rotation system of our present crops of hay, sugarbeets and grain the potato fits in very nicely, and if grown every season instead of a hit and miss plan, I am sure we will find them equally remunerative to any other crop we raise.

The past four seasons we have planted an average of 20 acres and have had very good success.

Of course the time has come when it is most necessary to do the job in a modern way.

We find deep plowing and frequent surface cultivation with a moderate amount of irrigation to be most essential on our soils. The tuber must be grown with soil covering sufficient to maintain an average temperature and that the moisture supply will not vary too much; as when we begin irrigation we cannot allow the potatoes to become too dry again at any time during their growth. Great care must be given to selection of seed, treatment, etc., with the proper machinery used. Practically all hand labor is supplanted by the horse.

At harvest time and perhaps a late weeding are the only times we must rely on hand work and even the harvest is made easy with a digger and sorter; as on our farm this season six men were able to sort and sack [illegible] 000 pounds daily.—Wm. C. Parke. Box Elder Farm Bureau News.

FARMERS
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Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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255 So. Main, Salt Lake
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All standard makes handled. Write us your wants.

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Scissors sharpner fits any sewing machine free upon request.
159 So. State St. Salt Lake City, Utah

"More Potatoes"
From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. [illegible]
A. J. PLATT, MFR.
BOX [illegible] STERLING, ILL.

PRICE OF SUGAR BEETS FOR 1918

Beet Top Silage

(Continued from page 3)

factory. One reason is the great waste. If the weather is dry and warm the tops dry out and the crown gets hard and the sheep tramp them in the dust hunting for the green tops underneath. If the ground is wet the largest part of the feed is tramped into the mud. Sheep like the green tops best. If they eat too much of them, especially lambs, it scours them and some years we have sustained very heavy losses.

When the tops are hauled off the field the ground can be plowed at once, which is a big advantage in this country where the seasons are short. The silage can then be fed in the winter when feed is most scarce and eliminate the danger of the lambs getting too much or wasting the tops. The tops are moist and the crowns soft. Horses, cattle, hogs and sheep are fond of them as when green. They are just the thing for calves. We are feeding about twenty calves, ages varying from weanlings to yearlings and giving them all they will eat of beet tops and alfalfa. They eat about two pounds of beet tops to one of hay and are doing well. I am sure they are doing much better than if they had double the hay and no tops. We have not fed much silage to the sheep yet as we intend to keep the silage for the sheep when the beet pulp is all fed. We have five or six hundred tons of silage in the pit and have no fear that it will not keep as long as we need it. Dr. Henderson of the State University was here and examined the silo and said it was in good shape. There is no waste on either the bottom or the top. The silage does not freeze. Even the tops left out in the calf manger seem not to be frozen any more than those fresh from the silo. I think I am safe in saying two tons of beet top silage is worth as much as one ton of alfalfa hay. I have heard of some that were siloed with straw mixed with the tops and was told by the man who is feeding them that the tops in our silo has kept much better than the ones mixed with straw.

Hope I have made myself clear. When we start to feed our sheep we shall inform Mr. Jones, Federal Sugar Expert, Salt Lake, who will come up to see how it has kept.

Dated Sugar City, Idaho, January 15th, 1918.

BEET TOP SILAGE

By Ira D. Markham.

I siloed about twenty tons of beet tops. In doing so I followed instructions in the circular which was mailed me from the local office of the Utah-Idaho Sugar Company, putting a layer of about eight inches of straw to 18 inches of tops and crowns alternately, then sealing it over with dirt. After about sixty days I opened the silo and have been feeding it daily to my cattle, it seems to be very palatable feed and the cattle take to it in preference to alfalfa hay, personally I think it a very large asset to the beet crop as it produces 2 crops practically in one, making a first-class feed which heretofore has been a waste as cattle turned loose in the field would waste considerable of the tops inasmuch as it would not do to use the field till the beet crop was harvested by which time most of the leaves would be dried and not much but the crowns left to eat.

In putting up this silage myself and boy did it in two days.

Dated Spanish Fork, Utah, January 21, 1918.

BEET TOP SILAGE

By Geo. W. Wilcomb.

Regarding beet tops, will say, there is no comparison between feeding the tops from the field and in the silo; from the silo one gets the full feeding value which I consider about half of firstclass hay, pound for pound. A six ton crop of tops will feed 30 head of cattle from the silo ten days while fed from the field, after it has been exposed to the sun and wind for a week or so, would not feed 30 head over one day. I consider a good ration of silage per day per head, when fed with straw, pea straw or any other dry feeds, 40 pounds.

Dated Marysville, Utah, January 17, 1918.

Idaho Falls, Idaho,
January 28th, 1918.

Editor, Utah Farmer, Lehi, Utah.
Dear Sir:

Following the advice of the Government officials, I siloed some of the beet tops on my farm this year, at Idaho Falls. I gathered about 125 tons of beet tops from 25 to 30 acres planted to beets. I did not take pains to gather the tops up clean and had considerable pasturage on the tops in the field.

The siloing was finished October 25th and the feeding of the silage was commenced about December first. It has been found that they fully come up in feed value to the estimates given by the Government. We have fed 800 head of sheep, about half ewes and half lambs, on a ration of 3 lbs. of beet top silage per day for forty days and feel quite sure that these sheep have made a gain of 4 to 5 lbs. per head, more than the other sheep of a like quality fed entirely on hay and beet pulp. This 3 lbs. of silage has replaced about one-third of the hay and pulp otherwise necessary and our sheep have gained flesh much faster than when fed on other feed we have used. When you figure mutton at from 10 to 15 cents per pound you will find that this extra gain is worth from 50 cents to 75 cents per head. Another thing that should be considered is that it is a very convenient feed to handle in cold weather, it being always warm and the sheep take to it very readily.

The cost of siloing these tops did not exceed $1.00 per ton, including the construction of the silo, which is about 100 feet long, 5 feet deep and 14 feet wide. The cost of $1.00 per ton includes the covering up of the silo. The silage is coming out without any waste whatever. We sprinkled a little straw in the bottom of the silo to keep the tops from coming in direct contact with the earth, (and to about every foot of silage we put in a sprinkling of about 2 to 3 inches of straw; on top of the silo we spread a little straw and then from 6 to 8 inches of short manure, which seems to fill the bill entirely.

So far as we can judge we are taking out about 80 per cent of the tonnage put in. I figure that this silage has a value of fully $8.00 per ton as compared with hay at $12.00 per ton. It therefore can readily be seen that getting 5 or 6 tons of tops per acre, when siloed, is more valuable, acre for acre, than alfalfa, figuring alfalfa on a basis of 3 to 3½ tons per acre, per season. The cost of labor in putting away an acre of beet tops is much less than raising and harvesting an acre of hay.

Sugar beet growers should not lose sight of the value of the beet top silage. It is an asset that adds very materially to their profits and provides the farmers with an opportunity to feed two or three car loads of cattle during the winter from which a very handsome profit can be made; besides which, the manure from their cattle yards is available for fertilizing their lands. The great trouble with so many of our small intermountain farmers has been that when their fall work is over they have nothing further to do until planting season opens up in the spring. Farmers to be successful should have some profitable winter work and there is no better way of making a few hundred dollars during the winter months than feeding 50 to 75 head of steers, as it is a well known fact that a steer is worth $40.00 to $50.00 more on the first day of March than he is in November.

I write this for the information of the farmers who have been discussing the beet top silage proposition.

By HEBER C. AUSTIN,
Idaho Falls, Idaho.

The boar should be kept thrifty during the summer, but should not be allowed to fatten.

SERVICE SCHOOL ANNOUNCEMENT

For the benefit of those who are contemplating the purchase of a tractor, either now or in the future, and for the benefit of the owners of Avery Tractors, we are going to hold a Service school to educate operators in the care and operation of Avery Tractors. This school will be held in Salt Lake City beginning February 5, 1918, and will continue during the balance of that week. Expert tractor operators and Service engineers will be in attendance and will give courses in the care and adjustments of magnetos, carburetors and all parts pertaining to tractors.

This free course will be invaluable to all parties in the Intermountain district who are interested in tractors, and we extend an invitation to all seeking such inforamtion to attend.

There will be no charge whatever, and the only requirement is that you enroll as soon as possible, or arrange to send one of your employees. Address or call on.

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General Agents, Avery Company,
Second West and South Temple,
Salt Lake City, Utah.

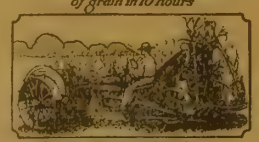
ONE MAN CULTIVATES TWO ROWS AT A TIME *with the*

One man cultivates 12 to 20 acres in 10 hours

One man plows 5 to 8 acres in 10 hours

One man lists 12 to 20 acres in 10 hours

One man harvests 15 to 25 acres of grain in 10 hours



One man harvests 8 to 10 acres of corn in 10 hours

Equipped with rear carrying truck for odd jobs

MOLINE UNIVERSAL TRACTOR

"It Solves the Farm Help Problem"

More time is spent in cultivating than any other single operation. Sixty per cent of the crops grown on most farms are planted in rows which require cultivation.

If one man is to farm more land than ever before, he must also cultivate more. With the Moline-Universal Tractor one man cultivates two rows at a time and does it better, quicker and cheaper than with horses.

The Moline-Universal Tractor has ample clearance to straddle the corn row at all stages of growth. The operator sits on the cultivator in line with the right drive wheel of the tractor—not directly behind the tractor. This gives a clear view of the rows ahead. By keeping the right wheel of the Moline-Universal a certain distance from the outside row the whole outfit will go properly. For dodging individual hills the cultivator gangs are easily shifted by the operator's feet.

But cultivation is only one of all the farm operations which the Moline-Universal can do. It is light, but has more than enough power to pull two 14-in. plow bottoms, because all its weight is available for traction.

The Moline-Universal isn't the kind of a tractor that will do your plowing and seed bed preparation and then rest while your horses do the planting, cultivating and harvesting. It works to full capacity throughout the entire year with the greatest speed and economy.

Your Moline-Universal is ready now. Write today for further information and name of your nearest Moline dealer.

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MOLINE PLOW COMPANY, MOLINE, ILL.

YOUR "HOW BOOK"

It tells you HOW, WHAT and WHEN to plant Vegetable and Farm Seeds. As well as describing the best in Trees for the Fruit Grower, it also has complete information on Incubators, Brooders and general supplies for the Poultryman.

Without doubt the most Instructive Book on Gardening and Farming ever published for Free distribution in the mountain states.

Write for Free Copy Today

PORTER-WALTON CO.

Salt Lake City

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending Jan. 29—Cattle—Receipts, 740; market, steady throughout week; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.75; fair to good, $6.00@7.00; canners, $4.00@5.00; feeder cows, $5.00@6.00; veal calves, $9.00@10.00.

Hogs — Receipts, 946; market, steady; tops, $15.50; bulk of sales, $15.50.

Sheep—Receipts, 1,087; market steady; lambs, $14.00@$15.00; ewes, $9.00@10.00.

North Salt Lake, Jan. 30.—Cattle—Receipts, 92. Market, steady. Choice steers, $9.50@10.50; good steers, $8.50@9.50; fair steers, $7.75@8.25; choice cows and heavy heifers, $7.25@7.75; fair to good cows and heifers, $6.25@7.00; cutters, $4.75@5.50; canners, $4.50@5.50; bologna bulls, $5.50@6.00; fat bulls, $6.25@7.00.

Hogs—Receipts, 82. Market steady. Choice fat hogs, 175 to 250 pounds, $15.50; mixed fat hogs, 160 pounds and up, $15.00@15.25.

Sheep—Receipts, 351. Market steady. Choice grain-fed lambs, $14.50@15.00; choice yearling wethers, $11.00@11.50; fat wethers, $10.50@11.00; fat ewes, $9.50@10.00.

Kansas City.

Kansas City, Jan. 30.—Hogs—Receipts, 16,000; higher. Bulk, $15.85@16.10; heavy, $16.00@16.10; packers and butchers, $16.00@16.10; light, $15.90@16.10; pigs, $10.50@13.50.

Cattle—Receipts, 15,000; steady. Prime fed steers, $12.25@13.75; dressed beef steers, $10.50@12.50; western steers, $9.00@12.26; cows, $6.75@11.00; heifers, $7.00@11.25; stockers and feeders, $7.50@11.75; bulls, $7.00@10.00; calves, $7.00@14.00.

Sheep — Receipts, 5000; steady. Lambs. $16.00@17.00; yearlings, $13.00@14.50; wethers, $11.50@13.00; ewes, $11.00@12.50.

CLEAN SEED GRAIN

Profitable Occupation for Winter Days—Provide Supply of Good, Clean Seed for Next Year's Crop.

Winter days, when farm work is slack, can be well utilized in cleaning and grading the small grains for spring sowing. This work should all be done before the spring rush in preparing the land and sowing the seed. Wheat, oats, barley, and flax for seeding can all be improved by running the seed through the fanning mill at least once to remove the weed seeds, chaff, broken straws, the light, shrunken kernels. The cleaned grain will run through the drill or other seeding machinery more evenly and thus insure a more uniform stand than can be obtained from uncleaned grain. Cleaning grain also elminates most of the weak and diseased kernels, many of which may not grow at all, or if they do grow are likely to produce small, weak plants. Uniformly large, plump kernels germinate more evenly, produce stronger plants, and yield more than ungraded grain containing small, weak kernels.

Cleaning the grain also removes a large part of the weed seeds it contains. The preparation of the land for seeding destroys many seeds that are in the soil and thus helps to keep weeds in check, but the value of this work is largely lost if foul seed is sown. Weed seeds sown with the grain have the best of conditions for germination and growth, and the plants produced from them compete strongly with the grain plants throughout the season.

Although the small grain of the 1917 crop, is mostly of excellent quality for seed, yet it is well worth while to run this grain through the fanning mill at least once. No chances should be taken in sowing the 1918 crop. The very best seed available should be used. Increases in yield of from 2 to 5 bushels or more to the acre are often obtained from sowing clean, large seed, but a gain of even a bushel to the acre will mean big wages for the winter days spent in getting seed ready for sowing.

BUY GARDEN SEEDS EARLY

Reports indicate a large shortage of seed of some of the leading vegetable crops. Shortages have resulted from failures of seed crops in this country, failure to receive usual shipments of seed from foreign countries and also to the unprecedented demand for garden seeds last spring. During the present month seedsmen are arranging their stocks for the new season, and are apportioning their surplus stocks for even distribution of the limited supply. Commercial vegetable growers can buy seed in quantity at this season, often at considerable discounts, while it may be difficult or impossible to buy garden seed in bulk after a few weeks. Therefore, the commercial grower should consider the advisability of purchasing seedstocks early this year.

The seedsmen are expecting another rush of buyers of packeted seed for planting the home-garden and so are preparing to sell most of their seed that way. The home-gardener should also have his garden work for next year so mapped out that he can order seeds now. By putting in the seed order early, one is more likely to have it filled and shipped promptly, also there is more certainty of receiving what is ordered. When seed becomes scarce, the seedsmen are likely to substitute varieties, also to use seed several years old. It is suggested that gardeners order no more seed than absolutely necessary for their own planting. Wasting seeds by reckless buying and planting is worse than waste of actual food in this year of seed-shortage. Seed supplies should also be protected from rats and mice, which are especially fond of meaty seeds, and will render a large number worthless in a single night. Put the seed in tight cans or jars, or in tin boxes, and keep in a cool dry place.

GRAINS FOR UTAH DRY LANDS

Winter wheat is the only profitable crop that is generally adapted to the dry lands of Utah, and further diversification of crops in those sections of the State is practically impossible.

That conclusion has been reached by State and Federal agricultural specialists whose report of nine years of crop experimentation in Utah has just been published as Farmers' Bulletin 883 of the United States Department of Agriculture, "Grains for the Utah Dry Lands." The report presents the latest available information on the small-grain crops and varieties adapted to Utah dry lands and the cultural methods necessary to grow them. The experiments upon which the information in the bulletin is based were conducted at the Nephi substation in the Juab Valley.

Winter wheat is admirably adapted, the specialists find, to the system of alternate cropping and fallowing as practiced in Utah. It also has a higher value per unit of bulk than any other of the dry-land crops, is easily transported, always marketable, and gives a ready cash return. Other crops may be profitable in some sections. The growing of oats, barley and other feed crops has increased as the live stock on the farms has increased.

To produce the best yields of winter wheat and other grains at the least expense the land should be plowed in the spring and a clean fallow maintained during the summer. The seed should be sown between September 15 and October 15 at a depth of 2 to 3 inches and at the rate of 5 pecks to the acre. Spring wheat, oats and barley, where it is necessary to grow these crops because of the failure of fall-sown grains, should be sown at the rate of 6 to 8 pecks to the acre, as early in the spring as the land can be put in condition.

The best varieties of small grains, according to the report of the specialists, are Crimean, Turkey and Kharkof winter wheats, Black winter emmer, Boswell winter oats, and White Club and Tennessee winter barleys. Of the spring varieties the best are Marquis wheat, Swedish Select oats, and Coast barley.

Corn, the grain sorghums, proso, and flax have been grown in a very limited way and can not be recommended generally. Corn and the grain sorghums may prove to be of value in certain localities.

Told Easily.

A witty political candidate, running in an agricultural district, after making a speech, announced that he would be glad to answer any questions that might be put to him.

A voice came from the audience.

"You seem to know a lot, sir, about a farmer's difficulties. May I ask a question about a momentous one?"

"Certainly," replied the candidate, nervously.

"How can you tell a bad egg?" went on the merciless voice.

The candidate waited until the laughter died away, then he replied:

"If I had anything to tell a bad egg, I think I should break it gently."

He won the place.—National Monthly.

Sheep raisers should get together and decide what breed of sheep is best suited to their locality and then stick to that breed.

Men Mechanically Inclined, Your Services Are Needed.

NEVER before has the demand for Automobile, Tractor, Truck and Aeroplane motor Mechanics been so great. Your service is needed in the Army, driving and repairing Trucks and Ambulances; in the Aeroplane section repairing motors; on our farms using Tractors; besides, remember that this country has 4,000,000 Automobiles. Thousands of mechanics who formerly took care of them are in the Government service. Somebody must take their places. It is up to you to take the places in the garage, etc., of the men that must go. Realizing these conditions I have made preparation to train men to fill these important positions. The demand for men is here. I am ready to train them. If you are in the draft come here and be trained so that you can give a special service to your Country.

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I have written a catalogue that shows pictures of all departments and describes my school. I want you to have it. It will tell you how I teach the Automobile, Tractor business; open your eyes to the opportunities for splendid positions at good money. This Country must have trained Mechanics. Take advantage of present conditions, write for my free catalogue; it's a trip through the greatest school in the world. Today is the day of oppportunities, grasp them.

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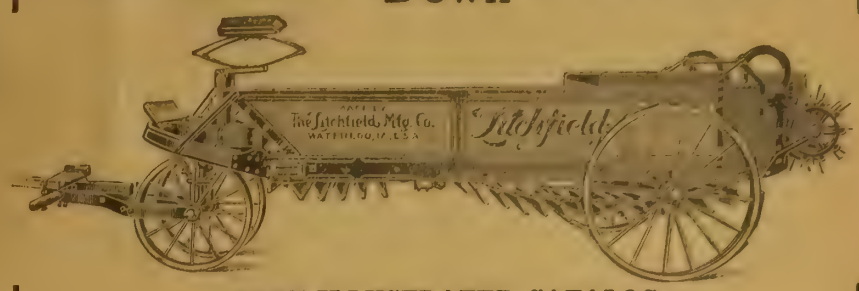

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S. P. 3

LIVE STOCK

SUCCESS WITH FALL PIGS

Eugene T. Lippincott.

Many of the very best hog men I know make an utter failure in the raising of the fall pigs. Some of you, many of you, like myself, raise pure-bred hogs exclusively. You get your fattening hogs from the culls from offcolors, the bad ears, and all other animals which tend to keep your pure-bred herd from being of the highest standard. Then, there are others here who grow large numbers of hogs, make no pretense at keeping anything but just hogs, all intended alike for the block. Then, there are still others who are farmers and incidentally keep a few hogs. Some of you have immense and fine hog houses, others of you do not rely upon a hog house at all.

To be in the hog business one must be absolutely honest. When I say honest, I do not mean alone that one must pay his debts, make his word good at all times and deal squarely; I mean also that one must be absolutely and perfectly honest. An absolutely and perfectly honest man can not go to bed at night or to church on Sunday knowing that he has a lot of little fall pigs shivering around in wet nests with poor ventilation. An honest man will make these little fellows comfortable on the inside with good, warm meals and comfortable on the outside with a good, warm, sanitary nest.

There are a great many things we can have our own way about around the hog plant. Then, there are a lot of other things that we can not have our own way about and be absolutely the master of. At our farms we plan to have a number of litters come in the spring, just as early after March 1st as we possibly can. We like to have twice as many spring litters as fall litters. The sows that farrow early in the spring of 1917 will be asked to produce a fall litter in 1917. These sows that produce a fall litter in 1917 will, of course, farrow later in the spring of 1918, and they will not be asked to repeat in the fall of 1916. By that method we get two litters from a certain individual sow this year, and one litter next year; in other words, three litters in two years. I should say that is the way we plan to have it; but, as I said above, there are some things we can not have our own way about.

One can hardly afford to have such a valuable factory as a good old brood sow standing idle half of the year; and we would not do it except occasionally with extraordinary individuals.

A little while ago we entertained one of our best breeders of Percheron horses. This man is not familiar with the value of hogs on the farm. After going over our line of hogs, asking what was then on the farm sold, the price received and the number raised in each litter, he said to me, "You have made as good dividends on these reserved sows of yours as you could on a registered Percheron mare costing you from $600 to $1,000." I admitted this to be true without proof on his part. I told him further that once a sow of approved breeding and type farrowed a litter for us showing remarkable merit, that sow was kept in our herd as long as she would produce that way.

There are too many farmers fattening off or selling of these tried old brood sows' factories and relying upon young immature and untried gilts. I have said above that only those sows that raised a very early litter in the spring were asked to raise a litter in the fall. The reason for that is this: We want all these fall pigs to come the last days of August, or in September. Our winters are too cold in this climate to have little pigs coming along late in October, or in November, or December. Rather than have them come in those months, one before plan to have them come the last of February following, or the first of March. In the hands of the average man they will make better hogs at very much less expense.

A young man, in whose ability I have a great deal of confidence, but who is not a practical hog man, built an elaborate hog house, all finished with cement floors, box stalls, hot and cold water, and then started to furnish it with little pigs farrowed in the month of December, claiming that he can handle pigs farrowed one month of the year as well as another. He will know more about the hog business hereafter. He will find out that pigs, like most other stock, need exercise.

As stated before, I am well aware of the fact when we make our plans to have these fall youngsters come early, there will now and again be a litter dropping in late, but this should never happen as a matter of planning. Then, when these babies get on the ground as early in the fall, not to say summer, for they will do very little good farrow (in June, July and the forepart of August), then comes the feeder's business of getting nice, big, strong frames before the cold weather sets in.

I have said before that the dams should be matured animals, if possible. I prefer to have the pigs sired by a mature boar also. We are maintaining two herd boars, in service in our herds, one of which is six years old, and the other is seven. After having selected the parents with close discrimination as to prolificacy, size, type and feeding qualities, and having a nice bunch of husky youngsters on hand, let them begin to have some of the same feed which the mother is getting as soon as they get to be of sufficient age to crawl into a creep by themselves and eat. Let this creep be made of six boards, each 12 or 14 feet long. Plant two posts in the ground 12 or 14 feet from the fence and 12 or 14 feet apart and the boards nailed around them so that the youngsters can get underneath the boards and the dams can not. At this stage of the pig's life, both the mothers and the pigs should be receiving a large amount of material suited to the growth of the animal and just a moderate amount of fattening food stuffs. Good separator milk, middlings, tankage, good alfalfa meal and a little oil meal, and the like, will make them grow. By all means feed it to them warm during the cold fall and winter days and watch them grow. It is just as uncomfortable for the pig to eat a breakfast of freezing slop in a trough frozen nearly full of ice as it is for the farmer to take his dinner to the woods to work and find it frozen when he goes to dine.

When the pigs are 8 to 12 weeks old and have been eating well, the mothers can be taken away from them, leaving the pigs remain in the same lot as before. After they are nicely weaned, we vaccinate to prevent cholera. For 15 days following vaccination the pigs are fed the same diet as before, but in lessened quantities. After the 15-day period, the pigs can be put back on full feed and gradually the feed changed to one of corn, oats and rye ground together, screened and mixed with milk (if any), middlings and tankage. Let them have about what they want. They should have it four times per day right after weaning and gradually come to three times per day. Then, when they are about five months old, twice per day is sufficient. This feed should always be in the form of a good thick slop and fed warm until mild weather comes in the spring. Of course, it goes without saying that slop will not take the place of water. The pigs want what fresh, clean water they can drink.

I prefer, and we therefore use, the individual lot and the individual house; that is, we have about 20 hog lots and a cot in each of these. When hogs get around towards maturity, it will not hurt for 18 or 20 of them to be together if they are of the same size and equally good feeders. Right now, we have one lot of 21 bred sows. There are in a lot containing about 8 or 10 acres, where they can get a blade of bluegrass pasture when it is not covered with snow. Here they get plenty of exercise, but the fall pigs must have one item in their equipment which most of the others do not need. They must have a place where they can be fed corn and slop and have exercise, with an enclosure away from the cold blasts. We feed these youngsters in the creep, which I have described above, in all weather that is not colder than 10 or 15 degrees above zero. When the weather gets colder than this, it is too cold for the fall pigs to run out in the open air and get their slop and grain. One stable in our large bank barn is set aside for these youngsters. In this barn there is a place for sleeping quarters for each lot and another place for each lot where the troughts are easily transported from the outside to that place where the weather gets too cold for them to be out. During this cold weather the pigs are shut in from the outside and all their exercise is in a large cow stable. This makes the process comparatively simple and easy. I have no doubt but that my hearers understand fully why we do this. The fall pig is not very careful about his nest. It is desperately hard to keep it dry and perfectly clean. We never allow more than a dozen or fifteen of them to run in one bunch, and then we expect to change the bedding every day or two. If you do not, you will expect to see the youngsters coming out in the morning steaming. It is very apparent that in that condition the ears and tails will be quickly frozen in zero weather. Then your trouble begins. These pigs are biting at each other and you have a lot of bleeding ears and tails. This is a most unpleasant sight to the owner and it is very unprofitable. The pig's tail does not serve any great purpose in the life of a hog, but somehow or other, breeders of pure-bred pigs are always glad to give $5.00 or $10.00 more for a pig that has a tail than one that has not. That money is worth saving. And whether you are in the pure-bred stock business or not, a man's pride is very materially affected when he has to take to market a lot of bob-tailed hogs, even though he is only driving them to the stock yards.

For the man who does not have a large barn such as I have described, there is another way out. Cut a few logs of your hardwood timber and get out a frame for some cots 7x14; then have some of your timber sawed up into boards one and one-eighth inch thick, and after they are dried out, take them to your planing mill and trade them foot for foot for ploughed and grooved lumber. Board up your cot with this kind of lumber, making the roof of the same kind of lumber and slanting all in one direction. Let the roof boards be 2 or 3 feet longer than the extreme length of your cot. Make the house very low, not higher than 2½ feet at the lowest side and extending on the higher side so that a man can stand up comfortably. Floor the cot with some kind of cheap, rough boards so as to protect the pigs from the damp of the ground. Then put a partition in the cot, letting the pigs sleep in the lower part, and arrange it so that a couple of short troughs can be put in the higher part and they can be fed in that part during the coldest weather. Set two or three of these cots, or as many as you will need for the fall pigs, close together, so as to conserve the heat, and put them all in the most protected place you can find on the farm. Do everything to keep the pigs warm and take care of them. If it is necessary to pile some corn-fodder around the cots, do it. When the owner can not afford to have a barn which is well adapted for this purpose, as I have described above, he must be willing to put up with the unsightly appearance of the corn-fodder or straw around these cots to make them comfortable. My first idea, you will see, is a practical way of making these fall pigs profit-

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LEG BANDS for Poultry, Pigeons, Turkeys
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HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

able, and this solution of the cots is proposed simply because I know not every man has room in his barn or has a hog barn or house for this purpose. Elaborate hog barns and fanciful equipments, although very nice, are not absolutely necessary to raising good fall pigs. It is very nice indeed to have the hot water produced by a heating system; but the hot water is just as good by means of a boiler on a kitchen stove. To insure the work being done well, one ought to make plants to do it as easily as possible, and I know of no better way of securing this hot water than to have a tank installed in the wood-house or wash-house which is attached to the kitchen. The tank should be placed on the opposite side of the partition between such wood-house of wash-room and the kitchen, and to have a coil of pipes running through that partition into the firebox in the kitchen stove and returning back again to the tank so that as a matter incidental to the cooking of the meals in the house the water is heated for the stock. If one has natural gas on the farm, of course it is much simpler to have kettles under which gas is piped and which will serve to heat the water. This crop of fall pigs will amply repay you for any and all efforts you may make for their comfort and welfare. A nice bunch of fall gilts, properly raised until they are a year of age, then bred to a good boar in November for farrow the following March, are mighty good property and are in good demand among breeders at from $50 to $100 and up. They have sufficient age to warrant their bringing good litters; while the boars from these fall litters, properly raised until the following September or October, are in good demand in herds where an animal is wanted of sufficient age to stand heavy service.

The person who wastes food during war time is helping the enemy.

Keep the hens in laying trim. Their "shells" are valuable food ammunition.

SAVING THE DAIRY FARM MANURE

(Continude from page 4)

more available plant food is supplied than the first crop can use and for this reason some of the soluble nitrogen is lost through leaching. When small applications are made the growing crop uses the available plant food and little is lost.

The gross feeding crops are the ones to which manure may be most profitably applied. Corn, potatoes, wheat and alfalfa all respond well to application of manure. Oats is a crop which responds rather poorly compared with most others. On level lands manure may be applied for corn two months before planting time to good advantage.

The practice of reinforcing manure with phosphate is rapidly increasing. As manure contains less phosphorus than either nitrogen or potassium, the addition of either rock phosphate or acid phosphate will in nearly all cases prove decidedly profitable. The phosphate should be sprinkled over the manure before it is removed from the barn. The application of one pound of phosphate per day for each 1,000-pound animal will be sufficient in most cases.

The phosphorus will not only increase the yield of crops but will also have a beneficial effect in stiffening the straw of small grains, which reduces "lodging" and improves quality. The addition of available phosphorus also hastens maturity, which is frequently desirable for corn.

THE SILO

By Ben R. Eldredge.

The silo saves the highest possible per cent of the corn crop in its most digestible form in the smallest space and for the least expense. We must pay more attention to crop rotation, and corn is invaluable as a cultivated or hoed crop to use in our rotation under conditions existing in most of our Utah valleys.

Corn silage, combined with alfalfa hay, forms an ideal rotation so far as roughage is concerned for cattle and sheep, and for these classes of stock no ration is perfect that does not provide some form of succulence which silage furnishes as no other cured crop can do.

Kaffir corn, milo and many of the sorghums are excellent silage crops and under some conditions may be substituted for corn, while in some of our highest mountain valleys, oats and peas or other forage plant combinations adapted to short, cool growing seasons may be grown for silage.

Silage is not intended as a complete ration in itself but is to be fed in combination with other feeds. For dairy cows, 25 to 35 pounds of silage with 10 to 15 pounds alfalfa hay daily, will give far better results than 50 pounds of alfalfa hay with no silage. For stock cattle, from 20 to 25 pounds of silage may be used. Sheep will eat from 2½ to 4 pounds of silage daily, and some hay.

Silage will save hay and reduce cost of feeding; it improves digestion and promotes health.

Corn silage can be grown and placed in a silo at a total cost of $2.45 to $3.50 per ton, varying according to local conditions and farm organization. Yields per acre very in Utah from 6 to 26 tons, a general average being from 12 to 15 tons per acre. In nutriment value 3 tons of corn silage are equal to 1 ton of hay, varying somewhat according to quality of silage and hay.

The best silos we know of are properly constructed cement, concrete monolithic, which can be built with ordinary farm labor and at the least cash outlay of any of the best forms of silo construction. I am supposing now that the farmer will haul sand and gravel and apply his own labor. These silos are not affected by our dry, hot weather as those of wooden construction are and need no guy wires or bracing when the wind blows. With walls 6 inches or more in thickness they last for generations with scarcely a thought needed toward repairs. While we say the monolithic silo is the best we know of when it is properly constructed, we want to say, also, that the cement stave silo which is popular in some parts of Utah where the freight rates are favorable, is a splendid silo and is giving excellent satisfaction wherever used. One form or the other of cement silo, but not wood, for Utah.

Monolithic cement concrete silos of about 80 tons capacity, 12 feet in diameter and 32 to 36 feet high, vary in total cost from $[illegible] to $[illegible]. This allows owner pay for his time and for hauling gravel. The variation is governed first, by the price of cement, which varies at different points, according to freight haul from factory; second, by distance for haul of sand and gravel; and third, by local price of labor. For an 80-ton silo, 12 feet in diameter, about 150 sacks of cement will be required.

The pit silo, by which we mean a dry well, with cement plastered wall, 10 to 16 feet in diameter and 25 to 40 feet deep, has been used successfully where there is no seepage water. On our irrigated farms, however, the conditions are not generally favorable to the pit silo.

GREAT THOUGHTS.

If we made a habit of writing our thoughts, and pinning them up in the office, it might ease our feelings, and would cause amusement to our friends.

This is what one business man pinned up recently:

"Our business has been established ever since 1858. We have been pleasing and displeasing people ever since. We have made money and lost money. We have been cussed and discussed, knocked about, talked about, lied about, held up, robbed, & etc., to the end of the chapter. The only reason why we are staying in business is to see what the ——— will happen next."

Every Patriotic Boy and Girl Can Own One of These Thrift Cards

Parents Should Encourage Their Boys and Girls to Earn One of the War Saving Certificates

We want to help every boy and girl to own one of these thrift cards. We will tell you how it can be done.

Uncle Sam says that if we are going to win this war we must all earn money, and save it, and loan it to the government. There are thousands and thousands of people, especially children, who can hardly afford to buy liberty bonds; so Uncle Sam has figured out a means by which everyone can loan a little money to the government. This is how:

"Thrift Stamps" of the value of twenty-five cents each will be issued. When 16 of these stamps have been attached to a card they can be exchanged for a War Saving Certificate by adding thirteen cents any time during February. These certificates will be redeemed for $5.00 on the 1st of January 1923.

Uncle Same desires that every boy and every girl in the land shall own one or more of these $5.00 war-saving certificates. And he wants every boy and every girl to earn the money with which to buy these certificates. Every boy and every girl who does this will be rendering a patriotic service.

Every boy and girl can earn one of these war-saving certificates and here is the plan. For every new subscriber at the rate of $1.00, you will send into our office we will send you one of these thrift stamps, if you will send in 16 new subscribers (16 dollars) we will send you a war-saving certificate.

The plan is simple. For each new subscriber at one dollar that you send us we will send you a thrift stamp valued at twenty-five cents. The Utah Farmer is well known and it will be easy for you to secure subscribers.

This is one of the U. S. Government Thrift Cards.

Start today—right now. Take this copy of The Utah Farmer, show this offer to some neighbor or other friend and ask him to give you his subscription. Then fill out the attached coupon and send it to us. As soon as we receive it we will send you a United States Government Thrift Card (with your name on the cover) and one twenty-five-cent stamp for every dollar you send me on subscriptions. When you have sixteen stamps on your thrift card you will then be given a $5.00 war-saving certificate.

Who'll be the first to earn one?

THE UTAH FARMER,

Lehi, Utah.

I enclose $..... to pay for the new subscription of

Name: .....

Postoffice .....

State .....

Other names can be put on sheet of paper.

Send the United States Government Thrift Card and Stamps to:

Name: ..... Age: .....

Postoffice .....

State .....

THE SUGAR OUTPUT FOR UTAH AND IDAHO

(Continued from page 3)

to $7,882,000 for the season, and the amount expended for labor, supplies, freight, coal, materials and incidentals amounted to over $4,000,000.

"Through the co-operation of the state farm bureau, under the leadership of D. D. McKay, president of the organization, in conjunction with the Utah Agricultural college, which have been jointly designated by the federal food administration as the medium through which it will present the necessity for an increased sugar production to the farmers of this district, it is hoped that the 1918 beet sugar output will be far in excess of the 1917 production of these states.

"Never before in the history of this nation have the sugar beet growers and the sugar companies of Utah and Idaho had a greater opportunity to demonstrate their patriotism and their interest in the cause for which we are striving. After spending considerable time in this district, during which I have had an opportunity to meet and talk with thousands of the farmers of these states, I feel confident that Utah and Idaho will not fail to render the aid the nation is depending on them to give during this crisis.

"I want to take this opportunity to congratulate the farmers of the state of Utah for their selection in naming the delegates who assembled at Logan for the purpose of adjusting the matter of the price to be paid for beets. During the time these men were in conference they gave me an opportunity to attend their hearings and I was impressed with the fairness and the sense of justice manifested by all of the delegates in all of their deliberations. I have never had the pleasure of meeting with a finer group of men and I feel that the outcome of this conference will be an increased sugar beet production.

"Unfortunately, certain individuals appear to be trying to discredit the work of the state farm bureau, but I feel confident that the conservative farmers of the state will discount any action or accusation made by the agitators.

"The line between conduct that is within the limits of each individual's right to utilize his labor and resources as he sees fit and that which is disloyal because it hampers the nation's efficiency in the demands created by the war may be a narrow one, but it is perfectly distinct. It is beginning to be evident that the efforts to prevent the planting of a normal acreage of sugar beets during the coming year is of the latter sort.

"Leaving aside all question of the necessities of the war and the course dictated by patriotism, it is the recognized privilege of each farmer to decide whether he shall grow beets, wheat, beans or some other crop that his personal preference or his estimate of probable financial returns may dictate. As long as this choice is exercised by the individual farmer on his own initiative there is little likelihood of complaint even now, although the need of the American people and of the allies for more sugar has led to special appeals from representatives of the government for an increased acreage devoted to sugar beets.

"The significant feature of the agitation among the farmers to block sugar beet growing is that it has appeared simultaneously in widely separate sections of the country, and that it has not sprung from local dissatisfaction with conditions, but has been inspired and directed in most instances by outside interests or by professional agitators. The form and tenor of the statements put out in the course of the effort to foment trouble between the beet growers and the sugar companies gives strong internal evidence of the source from which their inspiration has been drawn and it is an interest distinctly unfriendly to American sugar production.

"An added indication of the fact that an effort is on foot to cripple one of the nation's important energy-producing industries rather than to compose any well founded grievances that may exist, is given by the fact that when a set of demands submitted to the sugar companies have been granted by them, agitators spring up demanding new and excessive demands.

"The effort to hamper the production of food supplies in the United States during the coming year is not confined entirely to the sugar industry, although it has been especially noteworthy in that industry. The reports of the secret service on file in Washington are said, on good authority, to contain an astounding volume of evidence pointing to organized efforts to injure the nation and the cause in which it is engaged in just such ways as have been employed in recent weeks among the beet growers of the country. If the patriotic farmers of the country realized the real animating purpose behind the efforts being made to use them as tools against the cause for which their sons and brothers are fighting they would make short work of the movement.

"The nation is looking to the farmers of Utah and Idaho to rally to its support at this time and the food administration is asking the farmers to devote as many acres to sugar beets as is consistent with good farming. We do not ask that a farmer devote all his land to sugar beets, but we do ask him to diversify his crops in such a manner as will insure the nation of an ample food supply.

"Sugar beets are only a commercial value when they are grown within a reasonable distance of a sugar beet factory and therefore we are making a special appeal to the farmers in those sections. Not only do we ask them to increase their acreage, but also their efficiency. All sugar beet growers know that by careful seed bed preparation, good cultural methods and proper irrigation, an increased yield per acre may be obtained and therefore we are asking the farmers in the beet growing sections of the country to develop their efficiency.

"In prewar times the American people obtained about 46 per cent of their total sugar consumption from the United States and its insular possessions. The balance of the consumption was supplied by sugar grown in foreign countries, principally Cuba. The records show that under normal conditions the various sources of supply upon which the American people depended for their sugar, only produced approximately 1,550,000 tons in excess to the amount required for home consumption. In other words, only 1,550,000 tons were available for export. The war has changed conditions to such an extent that our normal sources of supply are being looked to by the people of our allies to make up the decrease in their sugar production in addition to supplying our domestic requirements.

"Under the present conditions the supply of sugar on which our allies normally draw has been tremendously reduced, so that they have to look to other sources. In consequence of the shipping situation, this presents great difficulties as the sources on which they must now draw are tropical and overseas regions. Before the war, Europe supplied from its own sugar beet fields, in a large measure, its own needs.

"A study of the export statistics of the various beet sugar producing countries covering a period before the war show that Germany exported approximately 875,000 tons of sugar, Austria-Hungary 850,000 tons, Russia 295,000 tons, France 205,000 tons, Belgium 155,000 tons, and Holland 200,000 tons. In view of these statistics it is evident that Germany and Austria were large exporters of sugar, while Russia, France, Belgium and Holland, besides supplying their domestic requirements, exported considerable amounts. A further study of the records show that Italy produced a little more than her annual consumption, while England, on the other hand, produced no sugar, importnig its total requirements of about 2,000,000 tons.

"Of England's total consumption approximately 70 per cent was obtained from the beet fields of continental Europe before the war. Seventeen per cent was obtained from Java, South America, and other tropical countries, aside from Cuba, while 8 per cent was obtained from the United States and Cuba and 5 per cent from other sources.

"Under present conditions, with England's continental Europe supply of beet sugar cut off, and with the general shipping situation making the importation of sugar from Java and other countries difficult, it is estimated that England will be required to draw on the United States and Cuba for approximately 1,400,000 tons of sugar during 1918.

"Owing to the war the production of beet sugar in France will be less than 205,000 tons during 1918, as compared with her prewar production of 752,000 tons. It is estimated that France will call upon the United States and Cuba to furnish her with approximately 240,000 tons of the article.

"Italy will produce approximately 75,000 tons of sugar during 1918, as compared with its prewar production of 210,000 tons. Hence it is safe to assume that the sources upon which the United States normally draws will have to furnish Italy with approximately 115,000 tons.

"In view of these facts the unusual demands upon the United States for 1918 will approximately 1,855,000 tons of sugar over the amount required for domestic consumption. The question of making provision for the supplying of this vast amount of sugar is one of the most difficult problems confronting the food administration and we cannot hope to solve the problem without the support and co-operation of every Utah and Idaho farmer who has land adapted to sugar beets.

"I have no doubt, however, that with the support of the excellent body of men comprising the state farm bureau, the great need for sugar will be told throughout this territory and Utah and Idaho will furnish their full quota of this essential commodity."

THE VERDICT

Some years ago in a western mining town a man was found dead in his hotel room, hanged to a bed post by his suspenders. The jury of miners brought in the following verdict at the coroner's inquest: "Deceased came to his death by coming home full and mistaking himself for his pants."—Exchange.

Serve your country by saving food.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

A BARGAIN FOR A FARMER

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

AN IDAHO RANCH BARGAIN

160 acres that now produce 100 tons of hay. Can be made to cut 500 tons. Near town, railroad and adjoins one of the best ranges in the state of Idaho. An abundance of timber and water. This ranch is ideally located. Fair improvements with some machinery. Price $7500, one half cash, balance terms at 7 per cent.

FEDERAL LAND COMPANY
Ogden Utah

RELIABLE FARM BARGAINS

50-ACRE DAIRY FARM, located near Salt Lake City. This farm is all under cultivation and all under irrigation, having a first-class water right. 40 acres of alfalfa, 5 acres of grain and 3 acres of pasture land, 2 acres of orchard. The soil is a sandy loam, very rich and fertile. A new two-story cement and rustic building in course of construction, but not yet finished; an adobe house of four rooms, a new barn that will hold twenty head of cows, four box stalls, buggy and wagon room and twenty-five tons of hay; a good silo, power, light and telephone on the place; also some very fine chicken coops and hog pens. The insurance on this property is $5000. We consider this one of the best buys we have in the city for $252 per acre. We can give easy terms on this property at 7 per cent interest. Call and see us if you are interested in a proposition of this kind.

143-ACRE STOCK RANCH in Boxelder county, 60 acres of alfalfa, seven acres of grain, balance of land that is under cultivation is timothy and red top. Ample free water for this property. A two-story, six-room house, two stables, sheds, granaries and other outbuildings; all necessary machinery will pass with sale of the property—wagon, harness, two mowers, hay rake, two derricks, all equipment, binders, two plows, two harrows. There are twenty-eight head of cattle, two horses, two hogs and seventy-five chickens. Will exchange for place near Salt Lake, Ogden or in Sanpete county. This property can be had at $70 per acre, including everything.

200-ACRE STOCK RANCH in the big Lost River country. This property has a free water right. There are 135 acres of alfalfa which will produce about 400 tons of hay. We can exchange this ranch for property in Salt Lake City

320-ACRE DRY FARM in Boxelder county. 85 acres of this planted to summer-fallow fall wheat. There is a small house, stable, wagon sheds and other improvements on the property. Six head of horses that will pass with sale of this property. We can exchange this for city property. Would prefer one to three acres of land. The price of the 320 acres is $6300, including the stock.

32-ACRE FARM near Salt Lake which we can subdivide into any acres which you may desire from three up. This property has a modern house, garage and other outbuildings for which the owner is asking $2,500 in addition to the $250 per acre for the land. We can take a home in Salt Lake City as part payment on this place. If you are desirous of obtaining a good home just outside the city, this is your opportunity. The improvements on these premises cannot be put there for $5000 and we are offering them for $2500. If you desire any further information concerning this place we would be glad to furnish same upon inquiry.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT.

PERSONAL ATTENTION

Is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us

BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, December 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, White Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.

BATES & SONS
Guhama Farm
Provo Utah

Wanted to hear from owner of good ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

Silage, Alfalfa, Straw

200 TONS CORN SILAGE
30 TONS OF ALFALFA
30 LOADS OF STRAW

All in first class shape, must be fed on the place, help for feeding can be obtained, shelter or shed room provided.

Three Miles North of Pleasant Grove.

A. P. WARNICK,
Pleasant Grove, Utah.

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Ramb uillet Sheep.
W. S. HANSON, Prop.
Collinston Utah

FOR SALE
Span large registered Perchon mares, 2 and 4 year old, beauties. Dam imported from France. Must sell, price right. Write or call on
C. A. PARRISH
Centerville Utah

A 6 weeks old calf was nibbling at the grass in the yard, and was viewed in silence for some minutes by the city girl.

"Tell me," she said, turning impulsively to her hostess, "does it really pay you to keep a cow as small as that?"

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

ANNOUNCE CONTROLLED FEEDS

By proclamation of the President which takes effect February 15th, livestock and poultry feeds are placed under the supervision of the U. S. Food Administration in addition to bran, cottonseed products and other staple commodities already so controlled. Alphabetically arranged, the feeds covered by the new regulations are:

Alfalfa, animal or fish products or by-products, baled alfalfa, baled hay, baled straw, barley, beans, broom corn, buckwheat, cane seed, copra, corn (ear), corn (shelled), dried brewers grains, dried distillers grains, dried yeast grains, emmer, feterita, grain and seed screenings, hay, kaffir, lentils, linseed oil cake, linseed oil meal, malt sprouts, millet, milo, oats, palm kernel, palm nut, peanuts, peas, rice, rye, sorghum grains, soy beans, spelt, straw, sugar beets, sugar cane, sunflower seeds, tankage, velvet beans, wheat.

With specified exceptions, all persons, firms and associations importing, manufacturing, mixing, processing, storing or distributing these feeds are required to secure a license from the U. S. Food Administration and be subject to its regulations for the duration of the war. The exceptions include farmers, gardeners, cooperative associations of farmers and gardeners (including livestock farmers), common carriers, and retailers whose gross sales of food commodities do not exceed $100,000 annually.

The purpose of the control is to prevent speculating and hoarding, to stabilize prices and secure distribution through most direct channels.

GOVERNMENT WILL SELL YOUR WHEAT

Farmers and shippers of wheat unable to obtain satisfactory service from country dealers or commission men may utilize the Food Administration Grain Corporation. This agency is not desirous of undertaking to sell grain or to enter the field of the dealer, and offers its services as sales agent only to cure dissatisfaction and where fair treatment can not otherwise be obtained by farmers. In such cases where wheat is of carlot volume the Food Administration will find a market at a commission charge of 1 per cent.

In cases of disagreement between farmers and local buyers or between country dealers and millers as to grade, the zone agent of the Food Administration is empowered to settle differences, and will render this service when a 2 pound sample is sent him for examination.

The zone agents of the Food Administration Grain Corporation are second-vice-president of the Corporation and serve without pay. Like other officials of the corporation, they have divorced themselves from the grain business for the time of the war.

D. F. Piazzek, Kansas City, Kansas, is zone agent for Utah with headquarters in the New England Building.

M. H. Houser, Portland Oregon, is zone agent for Idaho.

If farmers who raise sheep would grade and pack the wool more carefully they would find the increased price would yield a good return for the extra labor.

A DANGEROUS DOCTOR

"I hear, doctor, that my friend Brown, whom you have been treating so long for liver trouble, has died of stomach trouble."

"Don't you believe it, sir! Don't you believe it! When I treat a man for liver trouble he dies of liver trouble."

TOO GREAT A SACRIFICE

"But, my dear," said his wife, after he had complained about the food the new cook had brought in. "You know during these terrible times it is absolutely necessary that we make great sacrifices."

"Oh, of course, but what I object to is that cook's making hers in the form of a burnt offering."

HE WAS PLEASED

"Did he start anything when you asked if you could marry his daughter?"

"I should say so. He started to shake my hand off."

Make your front yard in the city beautiful in itself, but try to have it fit in with the landscape scheme of the neighborhood.

Hogs Will Help Win the War

Uncle Sam's fighting men need lots of meat. An appeal is being made to the American farmer to raise more and better hogs. In order to produce evenly-balanced meat, your hogs require lots of protein. If you feed them our

High Protein Tankage

you'll realize a saving in the cost of feed, and an increase in the price you receive for your hogs.

Order this tankage from your dealer or write direct to us.

Ogden Packing & Provision Co.

Ogden, Salt Lake and Price, Utah.

ATTENTION FARMERS
Here is an opportunity for any farmer who needs a brood sow or two-bred and guaranteed safe with pig for an early spring farrow.

The Western Berkshire Congress and Sale will be held at Davis California on February 21 and 22, where pure-bred Berkshire sows and gilts the pick of the best herds in the West have been consigned and will be sold at public auction.

Also—a new idea will be introduced at this sale—the bringing out of a carload of especially selected bred sows from the greatest Berkshire herds of the East and Middle West under the personal charge of J. W. Clapp, the well known Superintendent of the Hog Department at Hamilton Farms, New Jersey. This will give buyers the greatest opportunity for purchasing the cream of the bred sows of both Eastern and Western herds that has ever been presented to buyers in any one sale anywhere in the world.

This sale brings the Golden opportunity of all the year to get that which they need in a bred sow or gilt, and at their own price.

Come to Davis if you can. If not send a mail bid to A. N. Blackmer, Dierctor, Midvale, Utah, or to F. R. Steel, President, Grants Pass, Oregon. If you wish to consult with either of these men as to what bid it would be best to send, write at once and they will be glad to advise you, and to do all in their power to help you get just what you need and want.

Don't pass up this opportunity farmers—pork is high and Uncle Sam needs all the pork it is possible to produce to help down the Kaiser.

A. N. BLACKMER
Midvale Utah

Registered Holsteins For Sale
A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.

LELAND STEVENS
Oakley Utah

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

FOR SALE
Registered Hereford BULLS and HEIFERS $100 to $200 each.
20 Registered BERKSHIRE PIGS farrowed December ready for delivery at $15 each.
Registered ANGORA GOATS of both sex.
And a car of grade CALVES, Steers or Heifers.
Also some nice MULES.
My farm is located three miles north of Ephraim. But I will met you at Ephraim on an appointment, and you can inspect the stock before buying.

JAMES G. OLSEN
Ephraim Utah

PATHFINDER BOARS
I have a few choice Duroc Jersey Boars For Sale. Sired by Richard Pathfinder 1st., Prize and Junior Champion Utah State Fair 1917. These boars are out of my big type prolific sows. Priced to sell and guaranteed to please. Write me your wants.

ERIK W. OLSON
Virginia Idaho

ORDER SPRING PIGS NOW
Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.

VICTOR R. FISHER
Oxford Idaho

Poland Chinas

FOR SALE

1 yearling boar.
2 yearling tried sows, April farrow.
1 two year old sow, March farrow.
15 late Summer and Fall boars and sows.
All the big boned easy feeding kind, the best breeding that ever come out of Iowa. Address

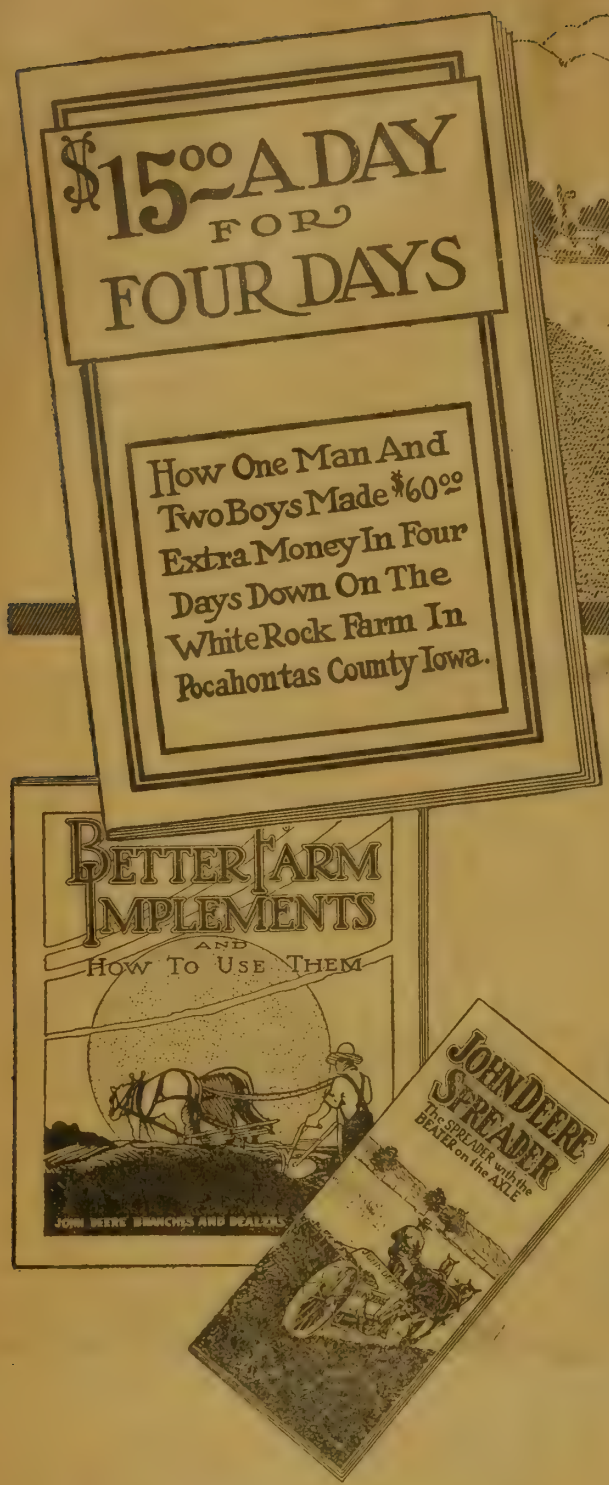
EARL BENNION
Taylorsville Utah

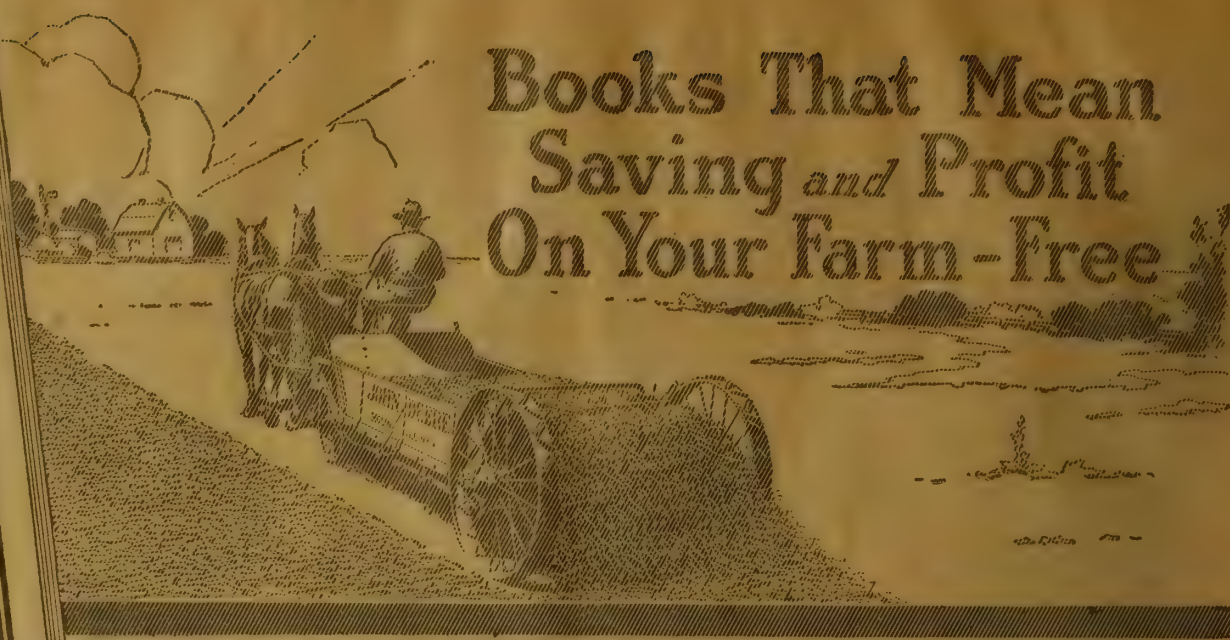
LUMBER POSTS
Write us about prices delivered your Station. Send list for Estimate. Pay after unloading.
KIRK COMPANY
Box 1138-X
Tacoma Washington

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah





"$15.00 a Day for Four Days"

TELLS the actual experience of a man and his two sons who made $60.00 extra money in four days on the White Rock Farm in Pocahontas County, Iowa. Interesting reading based on facts. Get this little booklet. This extra profit was made by using a

JOHN DEERE SPREADER

The SPREADER with the BEATER on the Axle

While it always has paid to use a John Deere Spreader, this year it will make bigger profits than ever before. Extra bushels, extra tons mean extra profits this year.

The John Deere Spreader makes bigger crops possible. It enables you to fertilize more land with the same amount of manure. It spreads the manure evenly. Every foot of the ground is covered and you control the distribution to suit the soil or crop conditions. The John Deere Spreader makes top dressing practicable, which you know has proven unusually profitable. It enables you to utilize barn-yard manure economically and profitably.

The John Deere Spreader is a real time and labor saver which means much to you under existing farm labor conditions. Due to its unusual construction and extreme simplicity, it will give more years of satisfactory service at less cost per year to operate.

Mounting the Beater on the Axle

A Patented Feature

Makes Possible These Distinctive Advantages:

The beater drive is strong and durable. It has the same principles and is as simple as a triple-geared horse power. The gears are enclosed in a dust-proof case. They run in a bath of oil. No dust or dirt can reach them.

It is easy to load from the front to the rear. You see where every forkful of manure goes. It is only 38" to the top of the box. A boy can load it.

High drive wheels are used. The draft has not been sacrificed to make an easy loading machine. Mounting the beater on the axle made this unnecessary. High drive wheels save horse flesh.

Unusually simple—no clutches—no chains. The simplest spreader built. Only about half the castings on it necessary on other spreaders. No clutches or chains. All of the main working parts mounted on the rear axle—not affected by twisting strains. They can't get out of line and cause binding, heavy draft and breakage.

It's an easy running spreader. High drive wheels, roller bearings at both ends of the beater, ball-bearing eccentric apron drive, revolving rake and even distribution of load, all help to make the John Deere a horse saver.

A boy can operate it. A boy old enough to drive horses can operate the John Deere Spreader as easily as you can. Tell him where to set the feed lever and he can easily put the machine in and out of gear. That's all there is to it.

The ***ball-bearing eccentric apron drive, non-racing apron, revolving rake*** are other features which also help to increase its efficiency. A wide spread attachment and straw spreading attachment can be furnished when desired.

Get These Free Books

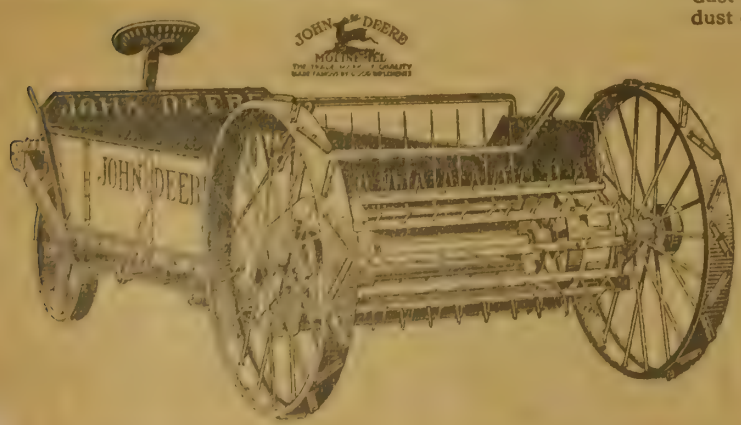
Get booklet ***"$15.00 a Day for Four Days,"*** also ***John Deere Spreader Booklet.***

Tells all about manure, how and when to spread it. A real treatise on manure. Worth money to you. It shows how simple and easy the John Deere is to operate and why this machine will give better and longer service than other spreaders.

"Better Farm Implements and How to Use Them"

A 156-page text book on farm machinery. Covers such subjects as "The plow, its history and uses," "How to hitch to plows correctly," "How to adjust plows," "Proper use of the disc harrow," "Things to remember when planting corn," "Proper method of corn cultivation," "Curing hay," etc. A book for your library. Worth dollars. Illustrates and describes a full line of modern farm implements.

To get these books state the implements in which you are interested and ask for package MS-142



John Deere, Moline, Illinois

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 28 LEHI AND SALT LAKE CITY, UTAH. FEBRUARY 9, 1918

Farmers Asked to Help Win War

President Woodrow Wilson Makes an Appeal to the Farmers at Their Conference

President Wilson had planned to attend the great convention of farmers at Urbana, Ill.—at the last minute he could not go.

He sent them this message:

The Message.

"I am very sorry, indeed, that I cannot be present in person at the Urbana conference. I should like to enjoy the benefit of the insipration and exchange of counsel which I know I should obtain, but, in the circumstances, it has seemed impossible for me to be present and, therefore, I can only send you a very earnest message expressing my interest and the thoughts which such a conference must bring prominently into every mind.

"I need not tell you, for I am sure you realize as keenly as I do, that we are, as a nation, in the presence of a great task which demands supreme sacrifice and endeavor of every one of us. We can give everything that is needed with the greater willingness and even satisfaction because the object of the war in which we are engaged is the greatest that free men have ever undertaken. It is to prevent the life of the world from being determined and the fortunes of men everywhere affected by small groups of military masters who seek their own interest and the selfish dominion throughout the world of the governments they unhappily for the moment control.

Had to Go to War.

"You will not need to be convinced that it was necessary for us as a free people to take part in this war. It had raised its evil hand against us. The rulers of Germany had sought to exercise their power in such a way as to shut off our economic life so far as our intercourse with Europe was concerned and to confine our people within the western hemisphere while they accomplished purposes which would have permanently impaired and impeded every process of our national life and have put the fortunes of America at the mercy of the imperial government of Germany. This was no threat. It had become a reality. Their hand of violence had been laid upon our own people and our own property in flagrant violation not only of justice, but of the well recognized and long standing covenant of international law and treaty. We are fighting, therefore, as truly for the liberty and self-government of the United States as if the war of our own revolution had to be fought over again and every man in every business in the United States must know by this time that his whole future fortune lies in the balance. Our national life and our whole economic development will pass under the sinister influences of foreign control, if we do not win. We must win, therefore, and we shall win. I need not ask you to pledge your lives and fortunes with those of the rest of the nation to the accomplishment of that great end.

Culminating Crisis Here.

"You will realize as I think statesmen on both sides of the water realize, that the culminating crisis of the struggle has come and that the achievements of this year on the one side or the other must determine the issue. It has turned out that the forces that fight for freedom, the freedom of men all over the world, as well as our own, depend upon us in an extraordinary and unexpected degree for sustenance, for the supply of the materials by which men are to live and to fight and it will be our glory when the war is over that we have supplied those materials and supplied them abundantly, and it will be all the more glory because in supplying them we have made our supreme effort and sacrifice.

PRESIDEN WOODROW WILSON

"In the field of agriculture we have agencies and instrumentalities, fortunately such as no other government in the world can show. The department of agriculture is undoubtedly the greatest practical and scientific agricultural organization in the world, * * * The banking legislation of the last two or three years has given the farmers access to the great lendable capital of the country and it has become the duty both of the men in charge of the federal reserve banking system and the farm loan banking system to see to it that the farmers obtain the credit, both short term and long term, to which they are entitled not only but which it is imperatively necessary should be extended to them if the present tasks of the country are to be adequately performed. Both by direct purchase of nitrates and by the establishment of plants to produce nitrates, the government is doing its utmost to assist in the problem of fertilization. The department of agriculture and other agencies are actively assisting the farmers to locate, safeguard and secure at cost an adequate supply of sound seed. The department has $2,500,000 available for this purpose now and has asked Congress for $6,000,000 more.

Labor Problem.

"The labor problem is one of great difficulty and some of the best agencies of the nation are addressing themselves to the task of solving it, so far as it is possible to solve it. Farmers have not been exempted from the draft. I know that they would not wish to be. I take it for granted they would not wish to be put in a class by themselves in this respect. But the attention of the war department has been very seriously centered upon the task of interfering with the labor of the farms as little as possible and under the new draft regulations, I believe that the farmers of the country will find that their supply of labor is very much less seriously drawn upon than it was under the first initial draft, made before we had had our first experience in these perplexing matters.

"The supply of labor in all industries is a matter we must look to and are looking to with diligent care.

"And let me say that the stimulation of the agencies I have enumerated has been responded to by the farmers in splendid fashion. I dare say that you are aware that the farmers of this country are as efficient as any other farmers in the world, They do not produce more per acre than the farmers of Europe. It is not necessary that they should do so. It would perhaps be bad economy for them to attempt it. But they do produce by two or three or four times more per man, per unit of labor and capital than the farmers of any European country. They are more alert and use more labor-saving devices than any other farmers in the world. And their response to the demands of the present emergency has been in every way remarkable. Last spring their planting exceeded by 12 million acres the largest planting of any previous year and the yields from the crops were record breaking yields. In the fall of 1917, a wheat acreage of 42,170,000 was planted, which was one million larger than for any preceding year, three millions greater than the next largest, and seven millions greater than the preceding five-year average.

What Hour Demands.

"But I ought to say to you that it is not only necessary that these achievements should be repeated, but that they should be exceeded. I know what this advice involves. It involves not only labor, but sacrifice, the painstaking application of every bit of scientific knowledge and every tested practice that is available. It means the utmost economy, even to the point where the pinch comes. It means the kind of concentration and self-sacrifice which is involved in the field of battle itself, where the object always looms greater than the individual. And yet the government will help and help in every way that it is possible. The impression which prevails in some quarters that while the government has sought to fix the prices of foodstuffs, it has not sought to fix other prices which determine the expenses of the farmer is a mistaken one. As a matter of fact, the government has actively and successfully regulated the prices of many fundamental materials underlying all the industries of the country and has regulated them not only for the purchases of the government, but also for the purchases of the general public and I have every reason to believe that the Congress will extend the powers of the government in this important and even essential matter, so that the tendency to profiteering which is showing itself in too many quarters may be effectively checked. In fixing prices of foodstuffs the government has sincerely tried to keep the interests of the farmer as much in mind as the interests of the communities which are to be served, but it is serving mankind as well as the farmer and everything in these times of war takes on the rigid aspect of duty.

"I will not appeal to you to continue and renew and increase your efforts. I do not believe that it is necessary to do so; I believe that you will do it without any word or appeal from me, because you understand as well as I do the needs and opportunities of this great hour when the fortunes of mankind everywhere seem about to be determined and when America has the greatest opportunity she has ever had to make good her own freedom and in

(Continued on page 13)

A Revolution In Beet Culture

To Farmers in the Territory of the Utah-Idaho Sugar Company:

Labor Saving Devices.

All have heard no doubt that John Devey & Sons of Lehi, Utah, in connection with the Utah-Idaho Sugar Company, have produced a splendid beet topper. Many tests have been made and it has been pronounced by those who have witnessed the machine operate at the recent demonstrations, that it is a thorough success, some of the most conservative of our large beet growers stating that it would save one-half ton of beets per acre over that of the average hand topping, and at least one-half the expense of harvesting and the trouble of securing hand labor.

Will say for your information that our Company has furnished considerable money to develop this machine; also the use of its machine shops and mechanics in years past. We have taken over the patents from Mr. Devey and will place the topper on the market for the 1918 harvest, and just as soon as the manufacturers can give us the cost price we shall advise you and take contracts from our growers to furnish them the machine practically at cost. A topper will be placed on exhibition in each factory district as soon as we can get sufficient of them manufactured. It will be sold to the farmers so that all who desire may purchase one on the installment plan, viz.: 25 per cent of the price to be deducted from the proceeds of the 1918 beet crop and 25 per cent each year for three years thereafter, at 6 per cent interest on deferred payments. The one row topper will top from 2 to 2½ acres per day.

Mr. Devey is now working on a two row topper and he is confident that he will perfect this within the next few weeks, and, no doubt, we will be able to manufacture a few of these for the larger growers.

It will be a very easy matter for the farmers to gather their beet tops for siloing, after the beets are topped with this machine. After four rows have been topped, by using a side delivery hay rake the tops can be put in a windrow ready to be taken into a dirt silo, or any other silo to be used.

Another very important thing accomplished by Mr. Devey is the production of a device that can be attached to the present riding beet puller of the John Deere type. It is a small scroll about 18 inches in length attached to the heel of the puller, which works the beets out on top of the ground quite free from dirt ready for loading. This is very important because it saves the pulling of the beets by hand and removes the dirt, and no doubt every farmer who buys the beet topper will want the new device for pulling. This pulling device and the topper will eliminate the hand work except that of throwing the beets into the wagon. To reduce this work to a minimum the farmer could get from 50 to 100 baskets, (the number to be regulated according t the size of his wagon), each basket holding about 100 pounds. These baskets distributed along the beet rows could be filled with beets by small children if necessary, and then the contents of the baskets could be dumped into the wagons by older persons. One man and the driver could load a 4-ton wagon of beets by using baskets in about 20 minutes. Tied to the baskets should be a small piece of burlap or old filter cloth so that if for any unavoidable reason the beets were left out over night, these covers could be thrown over the beets in the basket, which will protect them from the frost, and the sun, as against leaving them scattered over the ground. Sun and frost shrink the beets considerably, if they are allowed to lay long,—possibly 2 to 3 per cent and sometimes more. This creates a loss of possibly 25 cents to 40 cents per ton to the farmers if they are careless in this regard; and beets do not work up as nicely in the factory, nor do they store as well.

The use of the baskets will not only facilitate the loading, but it will be a great saving against the old methods which have been in use. Hand loading is very hard for children and is slow and expensive for grown-ups. We like to encourage our growers to use the most successful methods in the handling of the crop.

The basket method of beet loading was used by Mr. Isaac Goff of Midvale, Utah, for many years, very successfully on about 40 acres of good beets each year. His experience proved this method most profitable and economical.

Feeding On Beet Tops and Factory By-products.

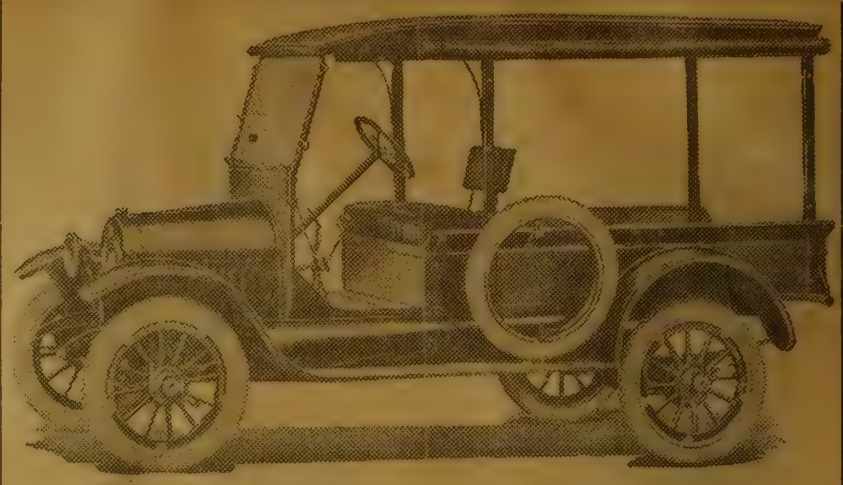
The siloing of beet tops is another matter that should be brought forcibly to the attention of all beet growers. Sufficient tops have been siloed in the States of Utah and Idaho this season to thoroughly demonstrate that this is one of the most profitable items connected with the beet business. We find there are about six to eight tons of tops per acre, according to the crop of beets, or about half as many tons of tops as beets; two tons of beet tops siloed equal one ton of the very best alfalfa hay, for feed to dairy stock, beef cattle, and sheep. It has been demonstrated by Mr. Geo. W. Wilcomb of Marysville, Idaho, that beet top silage can be used with straw for dairy purposes and the flow and quality of milk is equal to that when the very best alfalfa hay is fed. This gentleman states that he did not give his cows a bite of hay during last winter and has not done so to date this winter but simply fed straw and beet top silage. It works equally as well for fattening beef and mutton. Five acres of beet tops siloed, yielding six tons per acre, or a total of thirty tons will feed and fatten 20 steers at 30 pounds per day, for one hundred days. Ten to fifteen pounds of hay per day would be sufficient with the beet tops to feed to the steer. It can thus be seen that beet tops are worth from $30.00 to $40.00 per acre, according to the yields and prices of other feeds.

The proper ration for sheep would be about 3 pounds of beet top silage and ½ pound of alfalfa hay daily.

In addition to the siloed beet tops there is the pulp and syrup; pulp can be used by growers who live near the factory and syrup by those who are too far away from the factory to haul pulp. It has been estimated that the by-products of the factory and the siloed beet tops from an acre of beets will feed one and one-half times as many livestock as the average acre of alfalfa hay. Therefore, the farmer has more feed for his animals from his beets than from his alfalfa, acre for acre, in addition to which he has the sale of his beet crop. This cannot be said of any other crop. It is only recently that we have discovered the feed value of syrup and beet tops when siloed. We are deluged with orders for our syrup to be shipped to Middle West and Coast points, where it is made into stock feed. These people are willing to pay $30.00 per ton for the syrup and surely if it is worth that much to them, f. o. b. our factories, it is worth a like amount to our farmers to feed on their own farms, yet we are offering it to our beet growers at 1 cent per pound or $20.00 per ton. Our growers are entitled to purchase at this price 3 tons of syrup for every 100 tons of beets delivered to us, or 3 per cent of the weight of their beets. Three or 4 pounds of this syrup is sufficient each day when fed to cattle, and about one-half pound each day when fed to sheep, thus reducing other feeds. It is estimated that one pound of syrup is equal in feed value to a pound of grain.

There is an immense acreage of alfalfa and other lands that if devoted to sugar beet growing, would be much more profitable to the farmers. Every farmer who has five acres of beets or more and who has not sufficient livestock to consume his beet tops and the factory by-products available to him, should purchase some steers or sheep for fattening purposes; this would be found very profitable not only from a standpoint of feeding, but the fertility of the soil could be kept up, which is one of the most important things connected with farming.

UTAH-IDAHO SUGAR CO.



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There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending February 5th.—Cattle—Receipts, 875; market, steady; choice steers, $9.00@10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $7.00@7.75; fair to good, $6.00@7.00; canners, $4.00@5.00; feeder cows, $5.00@6.00; veal calves, $9.00@10.00.

Hogs—Receipts, 1,373; market, steady; tops, $15.75; bulk of sales, $15.75.

Sheep — Receipts, 3,917; market, steady; lambs, $14.00@15.00; ewes, $9.00@10.00.

North Salt Lake, Feb. 6—Cattle—Receipts, none. Market steady. Choice steers, 9.25@10.25; good steers, $8.25@9.25; fair steers, $7.25@8.00; choice cows and heavy heifers, $7.25@7.75; fair to good cows and heifers, $6.25@7.00; cutters, $4.75@5.00; bologna bulls, $4.50@5.50; fat bulls, $6.25@7.50.

Hogs—Receipts none. Market 25c higher. Choice fat hogs, 175 to 250 pounds, $16.00; mixed fat hogs, 160 pounds and up, $15.50@15.90.

Omaha, Feb. 6.—Hogs—Receipts, 16,500; market 5 to 15 cents higher. Heavy, $16.20@16.65; mixed, $16.25@16.55; light, $16.15@16.50; pigs, $10.00@15.50; bulk of sales, $16.25@16.55.

Cattle—Receipts, 5300. Market steady to lower. Native steers, $9.00@13.00; cows and heifers, $7.00@10.50; western steers, $8.50@11.50; Texas steers, $7.50@10.25; cows and heifers, $7.00@9.25; canners, $6.50@7.25; stockers and feeders, $6.50@10.75; calves, $9.00@13.25; bulls, stags, etc., $7.00@10.00.

Sheep—Receipts, 9,600; steady to lower. Yearlings, $12.00@15.00; wethers, $11.00@13.00; ewes, $10.75@12.50; lambs, $16.25@17.25.

Dairy Dollars

Dairying demands the same attention as any other business. Profits depend on producing the most milk of the best quality, at the least expense.

Proper feeding is one of the big problems, which may be solved by

SUN RIPE

Stock Feed

This highly nutritious mixture of grain and grain products, cotton seed meal and beet sugar molasses increases quality and quantity of milk, improves the health of the herd—and is economical to feed.

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VOLUME XIV. LEHI, UTAH, SATURDAY, FEBRUARY 9, 1918 No. 28

Legumes and the Nitrogen Supply of the Soil

By Dr. J. E. Greaves of the Utah Agricultural College.

From time immemorial it has been considered a self-evident fact that where crop rotation is practised there is a bigger and better yield. And the farmers of ancient Rome understood that crops following beans, peas, and vetches were usually better than those following wheat or barley. But it was not until the last quarter of the nineteenth century that it was learned that the leguminous plant with the aid of associated bacteria has the power of feeding on the free nitrogen of the air, while the none-leguminous plant has not and requires a supply of combined nitrogen. Today we find the best farmers practising some system of crop rotation. For they have observed from experience that where crop rotation is practiced the crops are bigger and better than where the single crop system is practiced. This is usually interpreted as indicating that crop rotation has increased the fertility of the soil. And we find many farmers planting legumes for a number of years on run-down soil, each year removing the entire crop and feeling confident that their soil is becoming richer in plant food.

Plants are composed of ten elements, each one of which is absolutely essential to their growth and formation. Only two-carbon and oxygen—are secured from the air by all plants; only one—hydrogen—from the water; the other seven are secured from the soil by all plants. One class of plants—the legumes—may under appropriate conditions obtain their nitrogen from the air. Six elements—phosphorus, potassium, magnesium, calcium, iron, and sulfur—are obtained entirely by the growing plant from the soil.

The great majority of agricultural soils contain large quantities of all of these essential elements with the exception of nitrogen, phosphorus, and potassium,—and these are used by the growing plant in larger quantities than are any of the other elements which are obtained direct from the soil. In the great majority of soils nitrogen, phosphorous or potassium is the limiting element in crop production. Therefore, our problem resolves itself into the question:—Can crop rotation maintain these elements in the soil in quantities sufficient for maximum yields. Phosphorus and potassium is obtained by the growing plant only from the soil; therefore, it is self-evident that no simple system of crop rotation can maintain the phosphorus and potassium, as the quantity within the soil must of necessity be reduced with each crop removed,—the extent depending upon the specific crop grown. Hence, nitrogen is the only element which we can hope to maintain by crop rotation. But this is the element that is found in the soil in smallest quantity and removed by most plans in larger quantities than the phosphorus or potassium. Moreover, large quantities of this element are lost from the soil by leaching. Therefore, it is of the greatest importance that this element be supplied to the soils in sufficient quantities for crop production and that in the cheapest manner possible.

Nitrogen exists in the atmosphere in inexhaustible quantities, every square yard of land having seven tons of nitrogen lying over it, or if the quantity covering one acre could be combined into the nitrate it would be worth as a fertilizer $125,000,000. Now, it has been demonstrated that the legumes—peas, beans, alfalfa, etc.—when properly infected have the power of feeding on this limitless supply of atmospheric nitrogen, while the non-legumes—barley, wheat, oats, etc.—must depend upon the supply within the soil, and the farmer must take advantage of this fact to supply nitrogen for his crops. But will the legume draw nitrogen from the atmosphere while there is a supply in the soil, or will it follow the line of least resistance and turn only to the atmosphere when nitrogen is lacking in the soil? If it does, it must first drain the soil of its valuable nitrogen and thus leave it no richer than it was before the legume was grown upon the soil.

Experiments which have been conducted at the Utah Experiment Station during the last twelve years have demonstrated that even on soils poor in nitrogen the legume first feeds upon the combined nitrogen of the soil. It is known that plant residues and other complex nitrogen compounds found in the soil are transformed by bacteria into ammonia and this in turn by another class of bacteria into nitric nitrogen, and it is mainly on this nitrogen that the growing plant feeds. The quantity of this found in the soil at different periods under different plants has been measured at the Utah Experiment Station and the average results

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Cost of Various Fuels Used In Pumping for Irrigation

By Prof O. W. Israelsen of the Utah Agricultural College.

Many inquiries come to the Agricultural College weekly as to the cost of pumping water against different lifts, and under various conditions with different kinds of fuel. The unusual interest expressed in this subject urges a statement through the columns of the Farmer which will, it is hoped, answer questions of the kind referred to. The material which follows should be of value to all farmers who plan the installation of pumping plants during the coming year.

Consumption of Fuel.

Most gasoline engines are expected to deliver to the pulley of a pump, or other power device in use, in the consumption of ⅛ gallon of gasoline, about one brake horsepower per hour. However, this is a little higher than what can be expected in general practice, since after engines have been operated for some time, their consumption increases somewhat, when they use an average of about 1-6 of a gallon of gasoline or distillate per brake horse power per hour.

The fuel consumption of steam engines varies according to the type of boiler or engine, also according to the size of engine. A general figure on consumption for small pumping plants, using an engine of 25 h. p. or less is about 10 pounds of coal or 6 pounds of oil per brake horse power per hour.

In the use of electric energy, measurement is made in kilowatts, one kilowatt being equal to 1 1-3 horse power. Since, however, there is some loss of energy in the motor, one kilowatt will usually give about 1 1-10 brake horse power. Therefore, one brake horse power is equal to about 9-10 of a kilowatt hour.

Summarizing the above data, indicates, then, that one brake horse power per hour requires one-sixth gallon of gasoline or distillate, about 10 pounds of coal, 6 pounds of oil or 9-10 of a kilowatt hour of electricity. Based on these values, the figures submitted below taken from "Irrigation Practice and Engineering,"

COST OF FUEL PER BRAKE HORSEPOWER PER HOUR

Equivalent Unit costs of fuel					Fuel Costs in (cents)	
					Per acre-foot of water lifted on foot high	
Cost of gasoline in cents per gallon	Cost of crude oil per (335 lbs)	Cost of coal per ton	Cost of electric power per kilowatt hour in cents	Per Brake H. P. per hour in cents	50% efficiency	75% efficiency
6	$0.55	$2.00	$1.11	$1.00	$2.75	$1.83
8	0.75	2.66	1.50	1.33	3.70	2.45
10	0.93	3.33	1.85	1.66	4.60	3.05
12	1.12	4.00	2.22	2.00	5.50	3.65
14	1.30	4.66	2.60	2.33	6.40	4.25
16	1.50	5.33	3.00	2.66	7.30	4.90
18	1.67	6.00	3.33	3.00	8.25	5.55
20	1.85	6.66	3.70	3.33	9.15	6.10
22	2.05	7.33	4.10	3.66	10.10	6.70
24	2.25	8.00	4.35	4.00	11.00	7.35
26	2.42	8.66	4.80	4.33	11.80	7.95

Volume I, "Use of Irrigation Water," by Etcheverry, show the equivalent cost of the various fuels used per brake horse power per hour and also the cost in cents per acre foot of water lifted one foot high, ordinarily spoken of as per foot-acre-foot.

It will be noted from the above table that gasoline at 6 cents per gallon is equivalent to crude oil at 55 cents per 335 pounds, or about 0.16 cents per pound and that these are equivalent to coal at $2.00 per ton and electricity at 1.11 cents per kilowatt hour. From the basis of fuel cost alone, the above table makes it possible to determine very readily which the cheaper fuel will be. For example, suppose that gasoline costs 26 cents per gallon, whereas coal costs $6.00 per ton or electricity 3 cents per kilowatt hour. It will be noted in this that electricity is the cheapest, since electricity at 3 cents is equivalent to coal at $5.35, or is equivalent to gasoline at 16 cents per gallon.

Furthermore, the table shows clearly how to determine the cost of lifting one acre foot of water one foot high. For example, if gasoline costs 20 cents per gallon, the above table shows that if the pumping plant were 50 per cent efficient, it would cost 9.17 cents to raise one acre foot of water one foot high, or in other words, if an irrigator desires to lift his water 10 feet high, it would cost 91.5 cents per acre foot. Assuming that he would use 2 acre feet per acre per

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The Question of The Hour

Harden Bennion, Secretary of State.

The Government has called upon the Extension Division of the U. A. C., U. S. D. of Agriculture, the public school system etc. to make a farm and labor survey of the State and in addition has sent into the State quite a number of specialists charged with the duty of investigation and report along special lines such as hogs, sheep, dairy products, sugar beets, etc. All these forces and agencies have, very wisely in my opinion, come together and decided that they would co-ordinate their efforts in one grand drive to secure the most complete and effective survey that has ever been made in any state. A moments thought will convince even disinterested observers that such combined effort will be vastly less expensive yet much more complete and reliable than could possibly be obtained if all these various agencies should work separately; but I want to emphasize the fact that in adopting the proposed method we will immeasurably conserve the time and attention of the general public. Just think what it would mean to have, during the late winter and spring months, a dozen different agents calling upon you for statistical information in regard to your lands and water your livestock, your crops of 1917 and what you would produce in 1918, your requirements for labor and your surplus labor, seed required and seed that could be spared, and dozens of other items that will be required in order that every possible provision may be made for the planting, raising, and harvesting of the great crops that the world emergency and our own favorable situation demands shall be produced in Utah this year. I need not dwell upon this phase of this subject other than to urge with all the earnestness and force at my command that every citizen, and especially every producer, and in this day we ought all to be producers, give every possible effort and encouragement to this ambitious program. Our beloved STATE has stood in the van of every movement to which we have been called, and let us now augment the proud record rather than detract from it. And what is the purpose of this great effort? And to what use will the mass of statistics collected be put when the object is achieved? The tabulated results will be forwarded to Washington so that the National Government, like a wise general, may know, as nearly as possible, what its resources are; what it must do, and what provisions make, in order that the national safety may be assured, and the people fed and other wise provided for as the needs of the hour

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DAIRYING

PRESSING NEED FOR DAIRY COWS

Mr. Herbert Hoover.

The dairy problems confronting us this fall depend for their answer largely on an understanding of world conditions. Usually in planning ahead we consider local and state—and possibly national—supply and demand for dairy stock and their products. On the basis of such conditions a dairyman has in the past been justified in increasing or decreasing the size of his herd and making his plans for at least a year ahead.

But this fall thoughtful dairymen are pondering over such questions as these: How will the war affect me personally tomorrow, next month and next year? How can I adjust my dairy operations to meet future needs? And what can I do within my ability and resources to put my work in harmony with the plans of the government.

To better understand our personal part in the great struggle that involves about half the population of the earth and threatens to starve the continent of Europe, we must try to think in terms of world figures. Nor is this difficult when we are content with round numbers. Carrying away an idea of the general situation will be of greater value than attempting to study statistics. Roughly speaking, the world's population is about one and two-thirds billion, or sixteen times the number of people in the United States. Let us remember that all of these folks are built along the same general pattern as ourselves, and, regardless of the language they speak, they require food, and children require, for their best development, the great universal liquid food—milk.

Earth Has Become Crowded.

Furthermore, the earth, which sometimes seems illimitable in size, is after all none too large for its present population. Altogether it has only 56,000,000 square miles of land area, and when we count out the polar regions, deserts, steppes, mountains, cities and towns, scarcely 29,000,000 square miles of land are left for agricultural purposes. And a large proportion of that is unimproved; nor can it be improved except at prohibitive cost.

In terms of more familiar figures, this condition means that, taking the world as a whole, fifty-eight people must live off the products of every square mile, and when the improved land is considered there are only about seven acres of it per person. The world is now about thirty times as densely populated as at the time of the Roman conquests.

Taking the figure,fifty-eight persons per square mile as a starting point, no doubt some who read this may be inclined to think it is impossible to live under such crowded conditions. And so it may well appear here in America. The density of population in North America is only sixteen people per square mile, but over in Europe the number is 120 per square mile—about seven times as dense. Consider how the population of the United States has steadily increased within your own memory and you will understand why Europe, which is a much older country, comparatively, is so crowded. This helps to explain in connection with the ravages of war why there is such a crying demand for food, and especially dairy products and meat.

Accurate foreign figures for 1917 are, of course, unobtainable, but before the war began five of the principal livestock countries of Europe—Russia, Germany, France, Austria Hungary and Italy—had nearly half again as many cattle as the entire United States. Furthermore, European dairymen imported a considerable percentage of their fodder-grains, nearly a third of it on an average.

So in spite of the dense human popualtion, it has paid those people to keep cattle. How many dairy cows have been killed in Europe since the war began no one can tell. But we have authentic figures on the total food animals of the allies. The decrease in the number of these since 1914 is about 33,000,000 head, equal to more than half the total number of cattle in the United States. But even in the absence of such a figure we have other means of knowing that the slaughter has been heavy. This source of information is the enormously increased export trade of the United States in butter, cheese and condensed milk.

Before the war our exports of butter ranged between 3,000,000 and 5,000,000 pounds annually, and our imports were only 1,000,000 pounds less than our exports. In 1916 our exports were over 13,000,000 pounds, and for 1917 they were nearly 27,000,000 pounds, which means that butter exports have increased nearly sevenfold, while our imports have fallen to less than 1,000,000 pounds.

Cheese exports, which since 1905 have fluctuated between about 3,000,000 and 17,000,000 pounds, increased this year to 66,000,000 pounds, while our imports, which were 53,000,000 pounds yearly before the war, were only a little over 14,000,000 pounds in 1917. The biggest increase in any class of dairy products has, however, been in the exports of condensed milk, which have increased from a scant 17,000,000 pounds to 259,000,000 pounds in 1917 and are still increasing. More milk would have been condensed during the past season had it been possible to secure equipment.

Animal Breeding a Slow Process.

Judging from the figures you have just read, the depletion of herds in Europe is probably greater than has been generally supposed and also greater than the warring nations care to admit. And while airships, submarines and munitions can be produced in a relatively short time in unlimited numbers, apparently, to fill military urgencies, practical dairymen know that animal breeding is a slow process.

The ruined cities of Europe will be restored much sooner than her ruined farms can be restocked. So even in the fact of the uncertainties of war and whatever may happen to the geography and political history of Europe, here are a few facts that serve as a foundation on which American dairymen can build their plans:

Until at least the end of the war, butter, cheese and condensed milk will be in enormous demand for export. After the war, desirable dairy animals—cows especially—will be required in almost unlimited quantity to restock the farms of Europe. The governments there, which are now buying tractors and improved machinery for their people, do not need to be taught the value of dairying. Europe knows better than we that the restored vigor of her people must come through plenty of dairy products and meat in their diet. Nor will Europe look farther than America for her chief supplies if we are prepared to furnish them.

The blood of her best herds is here. She is well aware that for more than a century her breeders have been sending choice stock to America and that we have used that foundation stock wisely and well. The United States has developed all of the great world's champion dairy cows. So at least for the duration of the war we are the custodians of the world's most valuable breeding animals, and from an economic standpoint it is highly desirable that we maintain such custodianship indefinitely.

Looking at the matter in an altruistic way, we can not escape the truth that the development of large numbers of choice breeding animals is a distinct service to the present and future generation the world over. The cost of feed, labor and housing may to an extent limit the scope of our operations; but the principles governing profitable production are now so well known that a wider application of them will in a measure offset the costs.

The more general use of dairy sires from high producing blood lines, replacing poor cows with better ones, more silos and labor-saving equipment —all these things help to increase dairy farm efficiency. They increase it in much the same manner that new and better machinery, wisely arranged, enables a manufacturer to increase his returns even in the face of costs that rise more rapidly than the market price.

There seems to be an excellent opportunity also this year for farmers who have heretofore kept but a few cows for family use to enter the dairy business seriously. In a recent visit to the office of the U. S. Food Administration, Mr. Hugh G. Van Pelt, and Iowa breeder, told how dairy cows enabled alfalfa growers in Arizona to secure better returns from their hay in the face of discouraging railroad rates.

"An incident of this kind," remarked Mr. Van Pelt, "may encourage good farmers elesewhere to take up dairying in a serious manner and help to relieve the world shortage of dairy products.

"When I first visited the river valley in Arizona of which I speak," he continued, "alfalfa hay was being offered at $5 a ton with no buyers. Hay where I live in Iowa was worth $17 a ton at that time, but even at that price it was cheaper than to ship in the Arizona hay. Freight rates and the cost of handling more than made up the difference.

"This is for you, girls!

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed *to a trace* when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed *faster* when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight *tube* with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

Sharples Separator Co. - West Chester, Pa.

Ask for Catalog "Velvet for Dairymen."—addressing Dept. 104

Branches: Chicago San Francisco Toronto S29

Looking Forward into 1918

While there is much in the way of uncertainty, one thing is sure—close association with a strong bank having a stable policy will be of benefit to you.

This bank has been giving dependable service to customers for nearly 59 years.

Take up with one of our officers now the advisability of bringing your account here.

Walker Brothers Bankers

SALT LAKE CITY

Fewer Cows in Proportion to People.

"Later I learned," he went on, "that those alfalfa growers had taken up dairying, and I made a trip to see them. Hay was no longer begging a buyer at $5 a ton. Instead it was fed to dairy cows and shipped out in the form of butter and other concentrated dairy products. There are now 65,000 cows in that valley."

Here was merely a case of intelligently installing a suitable machine—the dairy cow—in the midst of abundant raw materials and allowing her to convert it into products for which there is a world demand. Supporting this same trend of thought an expert in dairy production, associated with the Food Administration, believes that the hope of a greater dairy supply lies in the general farms which are growing forage not readily salable otherwise. Our cow population has gradually been increasing, but our human population has increased much faster. Listen to this:

In 1890 there were slightly less than 16,000,000 dairy cows in the United States and a trifle less than 63,000,000 people. In 1916 the dairy cow population increased to 22,108,000, but the human population had exceeded 101,000,000. To have as great a supply of cows proportionately as in 1890, there should now be 26,667,000 cows. So it can be seen we are about 4,559,000 cows short, considering simply our own requirements. And in the face of these figures we are asked to board Europe as well.

The immediate task before us is, of course, to make what dairy product we have go as far as possible, and to that end the Food Administration offers a few recommendations.

Use all of the milk and its by-products, endeavoring to prevent waste in the dairy, in shipping, in manufacturing and in the home kitchen.

Reduce as much as possible the feeding of skimmed milk to pigs. Some will naturally be needed to start them off strongly, but to nourish them largely on skimmed milk is a war-time waste. Only about 20 per cent of the food value of skimmed milk fed to swine is converted into pork, according to Professor Washburn, a Minnesota feeding specialist. The remaining 80 per cent is lost in converting it.

The most practical method of utilizing skimmed milk with the least waste is to make it into cottage cheese for human use and feed the resulting whey to swine. One hunded pounds of skimmed milk will make 15 pounds of cottage cheese, which is equal in food value to 15 pounds of ordinary meat. And the whey left from the skimmed milk still has about half as much food value for livestock as the skimmed milk itself.

If we can learn to utilize the proteins of milk in this manner we shall be able to export, without hardship to ourselves, much larger quantities of meats and butter—products both of which are sorely needed in Europe. Furthermore, meats and butter are concentrated and do not take up much room aboard ship. Every American understands the shortage of vessels and the need for making every trip count.

Perhaps you may not be able to put all of these suggestions into effect. Their application is largely a personal matter; but having these facts before you may, we hope, bring home to you a renewed confidence in the dairy cow and a greater sense or responsibility to mankind.

Oasis, Utah.

Utah Farmer:

Will you please tell me if mangles will make good feed for my cows? Will they have any bad effect upon her next lactation period?

Answered by Dr. W. E. Carroll.

You need have no fear of mangles being injurious to your milk cows. They have no tendency to dry cows up, but on the other hand are considered a speindid feed for heavy milking cows. They can be fed in quantities up to 75 pounds per head daily with no injury to the animals. This is usually more, however, than will be profitable under most conditions. You will also find no difficulty with the cows during their next lactation period. Mangles have been fed with good results to cows for hundreds of years. They are considered one of the very feeds where they can be grown successfully and kept without too great cost.

PRODUCTION OF DAIRY BREEDS

In farmers' Bulletin 893 of the United States Department of Agriculture, "Breeds of Dairy Cattle" the average productions of five breeds most generally known in the United States are shown. For Ayrshires the average of the 2,598 cows that have completed yearly records for advanced registry is 9,555 pounds of milk testing 3.95 per cent of butterfat, amounting to 337.51 pounds of fat. The ten highest milk producers of this breed range from 25,329 to 18,745 pounds of milk and the average of these ten highest producers is 21,538.8 pounds of milk. The ten highest butterfat producers among Ayrshires range from 955.56 to 744.78 pounds, with an average, for these ten, of 855.4 pounds of butterfat.

Brown Swiss Records.

In the Brown Swiss breed the average of 199 cows that have completed yearly records for the register of production is 10,868.7 pounds of milk, testing 3,995 per cent, amounting to 433.45 pounds of butterfat. The ten highest milk producers of the breed range from 19,460.6 to 16,496.7 pounds of milk with an average, for these ten of 17,373.2 pounds. The ten highest butterfat producers of the Brown Swiss range from 798.16 to 647.30 pounds, with an average, for these ten, of 683.72 pounds of butterfat.

Guernsey Records.

In the Guernsey breed the average of 6,200 cows that have completed a year's record for advanced registry is 8,934.44 pounds of milk testing 4.99 per cent, amounting to 446.01 pounds of butterfat. The ten highest producers of this breed range from 24,008 to 17,297.51 pounds of milk with an average, for these ten, of 19,337.9 pounds of milk. The ten highest Guernsey butterfat producers range from 1,098.18 to 910.67 pounds, and average, for these ten, of 976.75 pounds of butterfat.

Holstein Records.

Among Holsteins, 3,220 cows that had completed a yearly record for advanced registry averaged 14,622.7 pounds of milk, testing 3.424 per cent butterfat, amounting to 500.7 pounds of fat. The ten highest producers of this breed averaged from 31,246.9 to 28,826.4 pounds of milk, an average, for these ten, of 29,898.34 pounds of milk. The ten highest Holstein butterfat producers averaged from 1,205.09 to 1,017.28 pounds, an average, for these ten, of 1,090.89 pounds of butterfat.

Jersey Records.

In the Jersey breed, the average of 5,244 cows that had completed yearly records for the register of merit was 7,792 pounds of milk, testing 5.35 per cent, making 417 pounds of butterfat. The ten highest milk producers ranged from 19,694.8 to 16,633.2 pounds, an average, for these ten, of 17,703.4 pounds of milk. The ten highest butterfat producers range from 999.1 to 875.2 pounds, an average, for these ten, of 943.1 pounds of butterfat.

HE COULDN'T EXPLAIN

The Sunday school teacher was explaining to the children how Sunday came to be instituted.

"The Lord worked for six days," she said, "and rested on the seventh day. Therefore the Lord blessed the seventh day and hallowed it. Now has any child a question to ask?"

Willie put up his hand.

"Willie wishes to ask a question. What is it, Willie?"

"Why did th' Lord pick such a dead day as Sunday for a holiday?" asked Willie.

ANDREW CARNEGIE'S QUESTION

Andrew Carnegie, who since his retirement from active life has devoted himself to the study of human relations, was recently asked which he considered to be the most important factor in industry—labor, capital or brains?

The canny Scot replied with a merry twinkle in his eye, "Which is the most important leg of a three-legged stool?"

TODAY *versus* YESTERDAY

Little more than a decade ago, giant steam tractors represented the highest achievement in mechanical farm power—and Holt steamers then held a place in the lead. Today, the old steamers have been almost entirely displaced by gas tractors, but Holt still holds the lead. Thirty-five years' manufacturing experience, combined with correct design and choice of materials, have made the "Caterpillar" Tractor first in strength, power and endurance. This superiority results in longer tractor service, lower operating and upkeep costs, larger profits.

The "Caterpillar" Tractor's achievements on European battlefields and the satisfaction it has given thousands of farmers, freighters and contractors are your safest guide to the right choice.

Send today for complete "Caterpillar" Tractor information

CATERPILLAR

Reg U S Pat Off

Still Better Tillage Tools

Deering—McCormick—Osborne

HAVE you seen the **New Third Lever on a Deering, McCormick, or Osborne** Three-Lever Disk Harrow? It is a depth regulator. With it you raise and lower the inner ends of the disk gangs to meet *all* field conditions. You do this quickly and easily, without in any degree destroying the rigidity of the gangs, for which International Harvester disks have always been famous.

Have you seen the **New and Exclusive Attachment of the Tandem?** This is another feature we are proud of. The connecting braces tie to both leading gangs, extending from the tandem in such a way that the gangs *must* cut the ridges left by the leading gangs. In turning corners, the sliding connecting braces allow natural flexibility and following of the tandem without crowding sidewise.

International Harvester disk harrows have done top-notch good work for many years. They have built-in weight boxes, adjustable forecarriage, 4-wear wood bushings, tall hard oilers, etc., etc. This year they are simply unbeatable.

When you want seed beds that are right, be sure your tools—disk harrows, peg and spring-tooth harrows, cultivators, etc.—are **Deering, McCormick** or **Osborne.** Write us.

International Harvester Company of America

(Incorporated)

Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Why not encourage your boy or girl to earn a Thrift Stamp and send in a new subscription.

Many a young man will become a good mechanic if given plenty of machinery with which to work, and a good repair shop in which to take care of it. A farm machine shop is a good investment for any farm.

Many of our readers may not know that Utah and Southern Idaho has more surplus feed than any of the western states. If we can produce the feed we should grow more livestock. Poor plan to ship the feed away and let the other fellow make the profit on it.

AN INCREASE IN BEET ACREAGE

From the reports that come to us there will be an increase in the sugar beet acreage this year. Every farm bureau so far has endorsed the work of their representatives who went to Logan to meet with the sugar companies and secure the best possible price for 1918. Our government is asking for an increased production of sugar and we are sure that our growers will answer the call as they have done before.

Everything possible is being done to help the labor situation and relief can be expected from the government in helping to solve this problem this year.

The siloing of beet tops for feed, the use of pulp and syrup, will help to increase the profits from an acre of beets.

Now that the price of beets has been settled, both farmers and manufacturers should co-operate together for an increased acreage and a better tonnage.

WHAT ABOUT POTATOES THIS YEAR?

When the call came last spring for a big increase in potato production, many of our farmers acted against their own judgment in paying such enormous prices asked for seed potatoes, and planted potatoes, to help solve the food problem. The results is that some farmers are not going to any more than brake even on the potato crop.

What about the potato crop for this year? Will the usual acreage be planted?

If the crop is light it will have a serious effect on the consumption of wheat.

Why not have a fixed price for potatoes and corn, oats and other staple products necessary to win the war. There are many things to be considered in the problem of potatoes. If we go to the other extreme this year and but few potatoes are grown prices will be high.

DID YOU MAKE AN INVENTORY

If you failed to make an inventory at the beginning of the year do it now.

It is important for the guidance and encouragement of every farmer that he make an annual checking up to determine just where he stands. This annual inventory should be a detailed list with values of everything used in the farm business, including land, buildings, livestock, machinery and tools, produce for feed or sale, supplies, bills receivable and cash; also a list of all accounts and bills owing. The difference between the total assets and debts shows the net worth. If such a checking up were made on all farms there are many farmers who would be surprised at the poor showing they have made from the past year's work, others might learn they had done even better than they supposed. An inventory would give them something definite upon which to make a new start for the coming year and they could plan so as to make a better profit.

TIME TO CALL A HALT

For several months the people have listened to a few in every town talking against the government. Some people seem to have taken pleasure in starting false rumors about government work, about miss use of Red Cross money and other simular reports. Some times our good citizens will repeat these hear-says and pass them on, not thinking of the injury it will do.

It is time to call a halt, no one should repeat these German propaganda lies. Every loyal citizen will report these unpatriotic people who continue to help in this low down form of German methods. There are no half way Americans today, ever man is for or against the government. Time we were finding out where some of these men stand.

Any man or woman who does not get squarely behind the government and help win this war must be considered a friend of Germany. This war is a serious matter and should not be treated lightly.

It is time to call a halt on any one who talks in any way against the government.

PLANT ALL TILLABLE LAND

Nineteen eighteen will be one of the greatest agricultural years in the history of the State. Conditions are much more favorable than a year ago. With fall plowing done, we can do our spring work even under present conditions better than a year ago.

The call of President Wilson showing the need of every acre of tillable land being planted is given in this issue. Every farmer, every land owner should plant every foot of land so that something will grow and be produced.

Conditions are not as usual, they are unusual. We will have to work just a little harder. Even then we are not doing what the man in the trench is willing to do for our country.

We know that the farmers will answer the call of our leader and President.

This is the year when every foot of tillable land must do its duty. When every farmer must answer the patrotic call to do his best and help win this war.

RAISE MORE CHICKENS

We are asked to produce more poultry this year. Upon the farms is the best place to secure this increase. Hundreds of farms do not have any poultry on them and nearly all could support an increased number of chickens. All the meat and eggs will be needed for food. A frying chicken can be produced in a few weeks and a roaster in just a few weeks more.

Many people have reduced their flocks because of the high price of feed, this will make the available egg supply for hatching all the more scarce.

Plan now what you are going to do with poultry, get the incubator ready, learn where you can secure the eggs you will need. If eggs do seem high it will pay you to set them. Money put into the business is quite certain to come back generously multiplied if the work is at all well done. Raise more chickens—because the country needs them, and because they are going to bring good money.

UNUSUAL CONDITIONS

Last year was unusual in many ways. Nearly all crops were produced under a handicap, still we raised an increased amount of food stuff. A late spring, poorly prepared seed bed, and other difficulties had to be over come by the farmer.

The average beet tonnage was the lowest for several years and the cost of production was higher than usual.

Now we have a shortage of good seed and it will influence our production unless some effort is put forth by every farmer to secure at once the seed he will need.

We are asked to increase our livestock with a shortage of breeding stock. Many farmers hesitate to increase their number of hogs or cattle because of the high cost of feed.

These are some of the unusual conditions we must meet. We did our part well in 1917 and will do it again this year.

The way to meet these unusual conditions is to plan well your work, make every minute count, and from all of your equipment get a maximum result.

ORDER FARM MACHINERY EARLY

The importance to farmers of early ordering of both new farm machines and repair parts for old ones can not be too greatly emphasized.

Because of the prevailing high prices for farm implements and repair parts, there is a natural tendency on the part of retail dealers to maintain a very meager stock in order to avoid finding themselves with a large supply of high-priced material on hand in case a decline in price should occur.

This situation makes it exceedingly important for farmers to place at the earliest possible date all orders for new machines and repair parts which may be needed during the coming season in order to insure having the machines in time for farm operations next season.

Numerous instances have already occured where local dealers did not have a stock of repair parts on hand which were needed to meet requirements of farmers in the neighbornood and excessive delays were encountered in getting these parts from the factory.

ALL WILL WORK FOR LARGE CROPS

Last year we made a excellent record for our State in the increased production of food stuff.

We should be impressed with our opportunity to produce large crops and get the benefit of good prices this year. We have never had such an opportunity before. We have never before felt safe in producing all that our land and our equipment would permit, because we have never had a satisfactory market. Often in beginning the year's work and making our plans for crops we have hesitated because of unsatisfactory markets. No such danger now threatens us. The people of this country are urged to produce every pound of food and feed possible.

Labor is scarce and difficult to obtain. Lack of transportation has hindered in some instances. But what great victory was ever won without difficulties? Who would expect conditions to be entirely favorable when the opportunities are so great?

We have the utmost confidence in the farmers, we can testify as to their courage and their industry. These difficulties are not going to stop them in doing every thing possible for large crops and satisfactory returns. The nation will not be disappointed with our contribution in food and feed. Nor will it be disappointed in the assistance of our business men in cities and towns. United in faith, hope and courage our people will help win the war. And the world will realize our strength and patriotism when peace is made.

Utah's Experimenters In Agriculture

Elmer George Peterson.

Elmer George Peterson, now President of the Utah Agricultural College, was born in Plain City, Utah, in 1882. He is of pioneer heritage, his grandparents having settled in Weber Valley in the early 60's. His early schooling was received in the public schools of Utah, Idaho, and Oregon. In the order named he attended Oneida Stake Academy at Preston, the Utah Agricultural College, the University of Chicago, and Cornell University. From the latter institution he received the degrees of Master of Arts and Doctor of Philosophy. In 1909 he was appointed to a fellowship at Chicago University, but did not accept on account of promotion at Cornell. During his last year at Cornell, 1909-10, he was instructor in Bacteriology.

Upon graduation in 1910, he received the appointment as Professor of Bacteriology at Oregon Agricultural College, and was at the same time Bacteriologist of the Oregon Experiment Station. At the termination of the first year of his work there he was appointed Professor of Bacteriology and later Director of Extension at the Agricultural College of Utah, which position he held until his appointment to the Presidency of the institution in 1916.

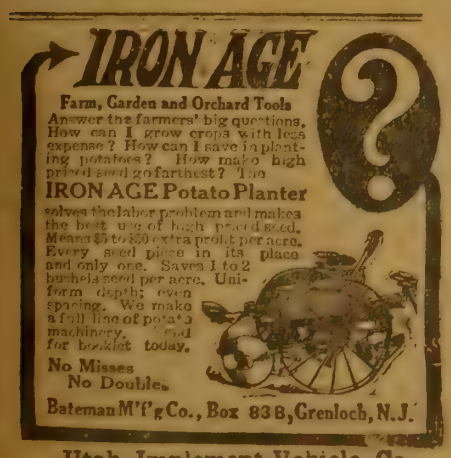
Doctor Peterson has done his research work in lines of insect control, soil bacteriology, pathogenic bacteriology, and physiology. As soil bacteriologist of the Oregon Experiment Station, experiments were outlined aiming at a determination of the relation of liming, (a common practice is Oregon) to the activity of soil bacteria and the resultant effect upon crop growth. In Utah research has been conducted to show the nitrogen fixing power of the bacteria in Utah soils with the aim of helping to establish thoroughly our knowledge of the activity of bacteria in arid soils, and of the effect of irrigation on bacterial activity. He contemplates the continuance of these experiments as time permits. He has said that "the whole future of the agriculture depends upon our establishment knowledge of soil processes and the degree to which this knowledge can be brought to the farmers of the State."

He is not slow to recognize the importance of the work of the man in research, a sympathy developed undoubtedly from his own hours spent in progressing along the unknown paths. In his present high position he lends support to research work and encourages in every way possible scientific experimentation. His whole attitude in this respect may be summed up in the following statement recently made by him:

"The quiet scholar is a world benefactor. The many kind and wise men whom we never or seldom hear of in the press but who painstakingly are pursuing their worthy work are among the choicest of the world's citizens. My admiration goes out to these leaders of high intellectuality who see the harmony in the world about us, who see God in nature, and who reverently search for the truth which will guide men forward toward the Creator.

"The loud, the irreverent, the merely curious—these we also have in many of our laboratories and colleges, but they fall far short of the ideal of education, which is wisdom, not merely knowledge. Such jacksnipers of education who dogmatically proclaim their partial conceptions, who confuse philosophy with science, who are intolerant—these are the false prophets of modern learning.

"Real learning is patient, reverent, and calm."



Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

THE QUESTION OF THE HOUR

(Continued from page 3)

shall demand. The information will be in the hands of the State and local units of Government so that these servants of the people may know where and how best to utilize every power and agency at their command for the production and conservation of the necessities of life, now so sadly depleted by the ravages of war. Corporate and private enterprise will be able to supply, as nearly as is possible, their requirements—in fact the two great fundamental elements of supply and demand, upon which all production must ultimately depend, will be brought into close communion and each minister to the efficiency of the other.

And now, taking it for granted that the survey will go through and be consumated in a grand success, I want to say a final word to the farmers themselves from the standpoint in which it affects them. Upon the farmers and their families must the nation depend in this crucial hour. The city man may raise a little garden stuff in his back yard, the novice in the great art of agriculture may have high aspirations and get out and plant a large acreage; but when it comes to putting the wheat in the bin we must look to the experienced farmer for results. It is therefore, all important that the farmer shall see the situation from the proper viewpoint. During the past year some of our people have met with disappointments. We were advised, in the spring, to plant as many beans as possible and in order to get seed paid from fifteen to eighteen cents per pound. Now the Government has fixed a price of 7¾ cents as the price it will pay for the army supply and we are consequently compelled to sell our crop at not more than half the price we expected to get. It was said that if all the potatoes in the United States were planted not more than half the nation's supply could be raised, but we raised so many potatoes that in some parts of the State they have gone begging. In the carrying out of unyielding military regulations young men have been drafted into the army who, in all common sense and equity, should have been left on the farm.

There can be no doubt in individual cases injustice has crept in, but when we come to look the whole situation over, taking into account the immense field of activity, the lack of governing precedents, the inexperiences of the agents charged with the execution of the law, and when we know that the plan of the Government has been worked out with the utmost desire to do justice to everybody and to reach the highest degree of production, while also meeting the national requirements from a military standpoint; we can surely afford to put aside our individual grievances and get into this game with all our might, mind, and strength. May the men of Utah do so.

Emerson Foot-Lift Plow

The Emerson Foot-lift Plow

Both levers on the Emerson Foot-lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow, leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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Are You Doing Your Bit?

Our Big Seed Catalogue Will Help You

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PLACE YOUR SEED ORDER EARLY

Vogeler Seed Company

SALT LAKE CITY, UTAH.

Gingered Apples—Use five pounds of tart apples, five pounds of light brown sugar, two lemons sliced thin, and one-half pound of preserved ginger cut into thin slices. Put sugar into enameled kettle, with one cupful of cold water, boil up and skim, and put in apples, pared, quartered, and cut in pieces about three-fourths inch. Add one-half teaspoonful of salt, lemons, and ginger, and boil until the apples look clear, yellow, and rich. Pour into pint jars and seal as any preserve.—Farm and Fireside.

HOME

WE ARE AT WAR AND THE U. S. FOOD ADMINISTRATION SAYS:

Fully 90 per cent of human food consumption in this country is under the control of the women of the country. Therefore, if we can mobilize the devotion of our womenfolk to methods of thrift the elimination of waste and economy in consumption, we shall not only have been able to increase enormously our exports to our allies, but we shall have at the same time reduced our national expenditures and made a large contribution to the saving of our people and their ability to carry a share of our war load.

After the war we must maintain our foreign markets if our working people are to be employed. We shall be in no position to compete if we continue to live on the same basis of waste and extravagance on which we have lived hitherto. Simple, temperate living is a moral issue of the first order at any time, and any other basis of conduct during the war becomes a wrong against the interest of the country and the interest of democracy.

RECIPES

Cabbage Roll.

Prepare and season meat just as you would do if you were going to make hash browned in the pan. Make into a roll. Parboil the outside leaves of cabbage for a few minutes, drain them, wrap the roll in them. Put in a kettle, cover with tomato sauce and cook 15 to 20 minutes and serve quickly.

Minestrone.

One pound white beans soaked over night. Cook slowly three hours. Mash through sieve and return to water in which they were cooked. Then add one-half onion, half bud garlic, one stalk celery, parsley. Chop fine and fry brown in a little oil with half pound of bologna sausage sliced thin and cut into quarters. Add at same time one and one-half cups chopped cabbage, two sliced potatoes, one-half cup raw rice. Boil slowly until everything is thoroughly cooked.

Pocohontas Pudding or Rice Bread

Boil one cup of rice until tender. Shake but never stir rice whilst cooking. Strain and add butter the size of an egg and a pint and a half of milk. Have ready a half-pint of fine yellow cornmeal (or bolted even meal) which has been scalded with a little hot water. Mix with rice and add two tablespoonsful of sifted flour, salt to taste, and two eggs beaten separately. Pour into well-buttered pan or baking dishes, having it not more than two inches thick, and bake in moderate oven about one hour.

If only half the quantity is necessary, it will take about 35 minutes.

Saving for Soup.

After cooking my potatoes for mashing I drain the water off in a bowl and set it aside. Then when we are through dinner I put the left-over potatoes, also the water (which I had saved), back in the kettle in which the potatoes were cooked, add a sliced onion or onion salt, and proceed as for cream potato soup. This served with croutons makes a very economical supper.

Apple Crisp.

This recipe requires 8 apples (or 1 quart), 1 teaspoon of cinnamon, ½ cup of water, 1 cup of sugar, ½ cup of flour and 5 tablespoons of butter. Butter a pudding dish and fill it with cut up apples, water and cinnamon mixed. Work together the other ingredients, mixing them gently with finger tips until crumbly, then spread over apple mixture. Bake 30 minutes uncovered. Serve with whipped cream.

Eggless Pumpkin Pies.

To 1 quart of cooked pumpkin add 1 quart of milk, 4 rounding tablespoons of flour, ½ cup of sugar, ½ teaspoon of cinnamon, ¼ teaspoon of allspice, ⅛ teaspoon of cloves and a pinch of salt. Mix well. Fill in an unbaked crust. Grate nutmeg over the top and bake in a moderately hot oven.

Delicious Apple Pudding.

Prepare apples as for pie, put in granite pan, season with cinnamon or nutmeg. Then pour over the apples a batter made as follows: 1 tablespoonful lard, ½ cupful sugar, pinch of salt, 2-3 cupful water, and 1 cupful flour into which has been sifted 1 teaspoonful baking-powder. Make the batter rather thin, bake in moderate oven until of a light brown color, and eat while warm with cream and sugar.

Good Apple Dumplings.

Pare and core apples (dried apples or other fruit) cook until very tender, mash and sweeten to taste, spread a white cloth with well-cooked rice ½ inch thick, put 2 large spoonfuls of fruit in center, draw close and tie cloth firmly, drop into boiling water, boil 3 minutes, turn out on a dish and serve with whipped cream. This is delicious and saves both flour and shortening.

Baked Apple Tapioca.

Cut 8 or 10 good cooking apples in halves. Remove cores, but do not peel. Soak 1 cup pearl tapioca 3 or 4 hours (or over night), or let 1 cup of minute tapioc stand in water to cover for several minutes. Put apples in a shallow baking dish, pour tapioca over them, add 1 cup of sugar (or more according to apples), a pinch of salt, ½ teaspoon grated nutmeg and a few lumps butter. Cover apples with plenty of hot water and bake in oven until apples are done and tapioca is clear. Serve with cream or the following sauce:

Cream 1 large tablespoon of butter and 1 cup sugar (brown, granulated or powdered) and add 1 teaspoon vanilla and a pinch of salt. Serve on top of the hot tapioca.

Rice Muffins

1 cup of cooked rice, ½ teaspoon of salt, 3 teaspoons of baking powder, ½ teaspoon of sugar, ½ teaspoon of butter or lard, 1 cup of sweet milk, 1½ cups of flour. Mix all together and bake in hot muffin pans which have been well greased.

Eggs and Cheese.

6 eggs slightly beaten, ½ cup grated cheese, pinch of salt and dash of pepper. Pour eggs and cheese into frying pan with 1 tablespoonful of butter. Stir constantly over moderate fire until eggs are cooked and cheese melted. Serve hot.

ECONOMICAL WEATHER STRIP

By cutting up into strips about an inch wide any old felt or beaver hats you will find you have some good weather strips without cost. Steam the strips and stretch them out straight.

THE PROPER FOOD FOR CHILDREN

Many persons believe that the chief aim in feeding children is to keep their hunger satisfied. Yet in every school there are found pupils who seem to have enough food to satisfy their appetites, but who are doing poor mental work largely because of the lack of proper food. In order that the mind may be kept alert and permitted to accomplish its best work, the body must be supplied with food that is nourishing and that does not put too severe a strain on the digestive system. Listlessness may often be due to a meal that is too heavy or that is hurriedly eaten. Headaches are frequently the result of improper eating, says a U. S. Agricultural bulletin.

The breakfast menus that follow are merely suggestive; one shows certain defects in meeting the dietary needs, and the other shows how these needs may be met with simple, easily prepared food.

A type of breakfast unsuited to a child:

Griddle cakes and sirup, susage or fried meat, fried potatoes, bread and butter, coffee.

Although this meal may not be bad for a healthy adult, it is unsuited to a child of school age for various addition of an acid fruit in order to be easily digested by even a grown man doing heavy work. Griddle cakes are in the class of hot breads, which are not suited to the diet of a child; they are often swallowed without much chewing, and hence are digested with difficulty.

A vigorous adult may be able to digest fried food without much difficulty, but it places too great a tax on the digestive system of a child. Coffee is a stimulant, therefore, it should not be used by school children.

A type of breakfast suited to a child of school age:

Rolled oats, with cream or milk; apple sauce, bread and butter, milk to drink, egg (not fried) if desired.

This meal is well suited to the needs of a growing child. The rolled oats should be cooked in a double boiler for several hours or in a fireless cooker overnight. Tissue-building foodstuffs are generously furnished in the rolled oats, the milk, the bread and the egg. Energy-giving foodstuffs are abundant in the rolled oats, the bread, the butter and the cream. Lime, which is needed for the growth of bones, as well as for other purposes, is supplied by the milk and the cereal. Iron, which helps to make red blood cells, is found in the egg and the rolled oats. Phosphorus, which is needed by the tissues of the body and which also helps to keep the body in good running order, is furnished by the apple sauce, the rolled oats, the egg and the milk. The apple sauce and the rolled oats are valuable in stimulating the activity of the intestines and thus preventing constipation. The apple sauce is also valuable in helping to neutralize certain substances that might otherwise cause trouble. Besides furnishing in a simple meal the requirements for growth and activity, this breakfast does not overtax the stomach and hence draw to it some of the blood needed by the brain for thinking.

TO KEEP A STOVE CLEAN

A plain blackboard eraser is splendid to keep near a stove. By using it to wipe off the top the stove is kept clean and does not need to be washed or polished but once or twice a week. These erasers can be made from pieces of wood covered with carpet at a very small cost.

"Refreshments will be served"

IT makes little difference whether it's a dance, a school or church social, a Red Cross Chapter meeting, a "get-together" meeting of the Farm Bureau or a big rally—

Chances are Ghirardelli's will be "among those present." And—for very good reason:

It promotes sociability. It provides added cheer and comfort. It is a delicious, refreshing food-beverage that is always in order at *any* social function.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

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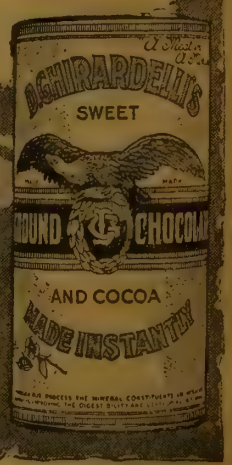

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Made in 2, 4 and 6 horse sizes; can be used with tractor. Works equally well on side hill or level, or in wet or dry soil. Handles rocks and cuts alfalfa roots without plowing. Cuts or cleans ditches down to 4 feet deep. *All Steel, Reversible and Adjustable. Investigate the Martin NOW.*

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BEST USE FOR SKIM MILK

All skim milk should be used—none wasted. It should furnish the maximum of food to human beings and does this better when used direct, as cottage cheese, prepared buttermilk, or other by-products, than when fed to animals and converted into meat. Surplus skim milk, of course may be used economically to feed hogs, yet 100 pounds of it, which will produce 15 pounds of cheese, produce only 4.8 pounds of dressed pork if fed with corn. Skim milk, if made into cottage cheese, furnishes nearly seven times as much protein and nearly as much energy as the dressed pork it would produce. Of course the most nourishment is obtained when skim milk is used direct, either for drinking or cooking. As far as possible, therefore, skim milk should be used for human food and only the excess fed to livestock.

WHAT SHALL WE PLAY?

Estella Cook.

The Wedding Trip.

This game is so amusing that it will repay one for the trouble it takes to prepare it, two suit cases are packed with the most out-of-date clothing that can be found. Each one should contain a hat, coat, pair of gloves, and rubbers for a gentleman and the same articles of clothing for a lady. An old umbrella should go with each suit case. Two couples are then selected to go on the wedding trip. They start at a given signal, unpack, the suit cases, take out the clothing, put on the coat, hat, gloves and rubbers. The gentlemen open the umbrellas and, holding them over their partners, make the circuit of the house. They must then take off the clothing, and pack the suitcases. The pair that completes the trip first, wins the contest. The more old-fashioned and ridiculous the clothing, the more amusing the game.

Getting the Wedding Ring.

The guests sit in a circle. To start the game, the game leader goes into the middle of the ring. A plain, gold ring is slipped on a stout cord. This cord must be long enough to extend around the circle. The ends are tied so that the cord forms a ring. Each person in the circle holds this cord, and the ring is slipped around the cord, while the one in the center tries to find it. The one in whose hands she discovers the ring, becomes an "old maid," and must go in to the center to find the wedding ring.

Clothespin Race.

Sides are chosen as for a spelling match. They stand in line, facing each other, the leaders at the end. At the head of each line in a basket containing twelve clothespins. At the given signal, the leaders begin passing the pins, one at a time, down the line. When the first pin reaches the end of the line, the last player places it one the floor beside him, and so on, until he has the entire number. Then he starts them back over the line to the leader. The line that succeeds in getting the pins all in the basket first, wins the game.

Poor Pussy.

The players sit in a circle. The leader takes a pillow, and kneeling before one of the players, says in a pitiful voice, "meow." Without smiling the player must say, "Poor pussy." If she can say it three times without smiling, the leader must try some other player. If she laughs, she must take the place in the center.

Putting Tail on Donkey.

The picture of a donkey without a tail, is pinned to the wall. One of the players is blindfolded, and a tail with a pin stuck in it is given to him. He is turned around three times and told to pin the tail on the donkey. The second player does the same. The winner is the one who pins the tail nearest to the place where it belongs.

Last Couple Out.

Parners are chosen and take their places in a line of twos. The leader stands at the head of the line without a partner. When she calls out "Last couple out," the couple at the end of the line separate, one runing forward on the left side of the line, the other running forward on the right of it, they pass the leader and try to touch each other before the leader can catch one of them. If the leader is a gentleman, he tries to catch the lady before her partner can touch her. If he succeeds in doing this, she becomes his partner, and her partner must take the place at the head of the line and call the last couple. If he does not catch the lady she and her partner take their places at the head of the line of twos, and the leader must call out the last couple again.

Black Art.

This is a very old trick game. The game leader selects a helper who, she says, has the power to read her mind. The helper leaves the room, and the game leader asks the guests to choose some article in the room. The leader then seats herself in the middle of the room, and the helper is called in. She places her hands on each side of the game leader's head who then questions her about the object selected. Is it the table? Is it that vase? Is it the cushion? etc. Just before the leader asks her about the object that has been chosen, she asks if it is some article that is black. Is it the stove? Is it this picture? and the article is easily guessed.

The Fagot Game.

This game is played while seated around an open fire. A bunch of small sticks, or fagots is given to each member of the party. These in turn are thrown on the fire, and the one whose fagots are burning must entertain the others until her sticks are in ashes. She may speak a piece, tell a story, sing a song, ask riddles or do some "stunt."

The Continued Story.

The Continued Story is another delightful game to play while seated around the fire. The leader starts a story, introducing a setting and some interesting characters, then she calls on some one to continue it. When the next narrator reaches a thrilling situation, she is turn asks another to continue. In this manner it is passed from one to another until each member of the party has had a part in it. The last player completes the story.

NO SACRIFICE ASKED

As I think of the men I have known that are offering their lives, if need be, in this great struggle, I wonder if we who are left at home to wear good clothes, to have good meals, safe and serene from all danger, who are enjoying the comforts of life much as we always have, can not do something more that will justify our remaining here. We have a great opportunity and a great responsibility. We are not asked to sacrifice the least bit, we are only asked to be efficient.

While I hate that word efficiency because of its relation to the brutalities of kultur, the dairymen to be patriotic must become more efficient—efficient not only in the feeding and care of their herds, but in the production of their crops and the use of labor, and the cow testing association promotes efficienecy in all these lines. It aids in conservation of feed, conservation of labor, and increased production of food, and enables the dairyman to walk hand in hand with profit and patriotism.

In the last analysis, we are not in the dairy business for the profits alone, because the greatest thing on the farm is not the bank account, not the acres, not the fine buildings, nor the livestock—the greatest thing on the farm is the welfare of the husband, the wife, and the boys and the girls. The cow testing association enables the dairyman to so run his business that it promotes the welfare not only of himself and family but at this time is an important factor in insuring the welfare of all.—Noel Negley.

Shortage of wheat in France is becoming more alarming each week. Pastry is now classed as a luxury and its manufacture or consumption is now suppressed except on Sundays and holidays.

HARVEST NATURAL ICE; SAVE AMMONIA FOR FERTILIZERS AND EXPLOSIVES

Farmers and others who harvest natural ice this winter and store it for summer use will aid greatly in the conservation of ammonia, vitally important at this time, it is pointed out by the United States Department of Agriculure.

Ammonia is a necessity in the manufacture of ice. Every ton of natural ice harvested means a certain amount of ammonia saved. Ammonia salts are regarded as an essential in the manufacture of certain fertilizers and the cost of fertilizers is dependent to some extent on the market value of ammonia. Of extreme significance at this time, however, is the fact that the most important chemicals used in making ammonium nitrate and other explosives are readily made from ammonia and every quart of America's already small supply of this substance that can be saved means more power to America's Armies.

Thus the farmer is interested in the conservation of ammonia not only from a national standpoint but because of his personal interests. Ammonia saved through harvesting of natural ice means more ammonia for fertilizers and more ammonia for ammunition. The man who harvests ice now and stores it in pits or ice houses, next summer may have the satisfaction of helping out his neighbor who depended on an ice plant.

In addition to the saving of ammonia, conservation of coal is to be effected through the harvesting of natural ice. American ice factories and refrigerating plants, according to figures of the United States Fuel Administration, use annually 15,000,000 tons of coal.

WANT TO BUY

Sweet Clover and Alfalfa Seed

Utah-Idaho Sugar Company wishes to purchase 2,000 pounds of good grade tall sweet clover seed, also 5,600 pounds good grade alfalfa seed. Will purchase in smaller quantities if obtainable.

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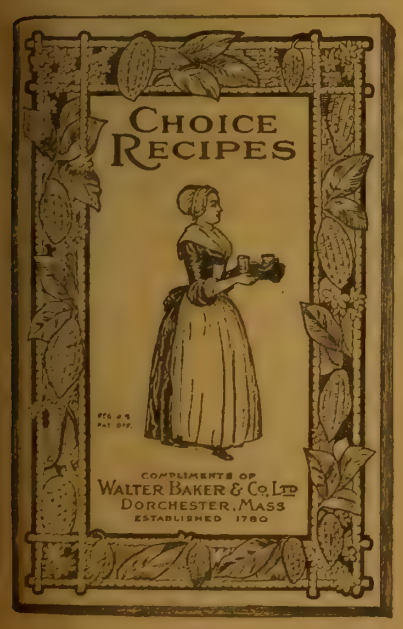

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Snap Shots In The Feed Lot

Written for the Utah Farmer by J. C. Wheelon.

Horses At Work.

There is occasionally a farmer that feeds his horses with the same attention to their feeding requirements as a builder will calculate the sizes and domensions of the timbers he uses in the construction of a bridge; the timbers are increased in size to obtain more strength for a wagon bridge than for a foot bridge.

A horse that works ten hours a day is an entirely different animal from an idle one; he is a factory that is being speeded up to a greater output and, like any other fatcory, requires a larger amount of raw material.

Nearly all good feeders give their horses the same quantity of the same rations during the idle days, say Sundays and rainy days, as they do on the days that they are worked; while the poor feeder gives his horses only the same amount of feed at work as they have when idle. They are both wrong.

We have worked hundreds of horses in construction camps during the past twenty years and it took a long time to learn that the horses stood up to the work better and less sickness when the feeding was taken away from the owners and drivers and one man employed to do all the feeding by a standard of weights, and when a horse was idle a half a day his grain ration was cut down to ¾ and if idle a whole day to ½ the working ration.

We are again indebted to "Wolfe's" and "Stewart's" standards for the knowledge that a horse working ten hours a day requires a feed that contains over one half more protein and nearly a half more fat values than when he is idle.

It is well to remember that:

Protein furnishes material for flesh, blood, skin, hair, muscles, tendons, nerves, horns, wool, casein and milk.

Fiber for cellelose, etc.

Carbohydrates for starch, sugar gums and heat, etc.

Fat for fat and is stored up for heat.

Ash largely for bone.

The following suggestion for compounds of rations are adapted to our western grown produce and calculated upon the standards as near as may be and based on the requirements of horses of 1,000 pounds weight per day.

	lbs.		per ton		per day
1.					
Alfalfa hay	30	@	$15.00	=	22½c
2.					
Alfalfa hay	20	@	$15.00	=	15c
Beet syrup	12	@	20.00	=	6c
					21c
3.					
Alfalfa hay	15	@	$15.00	=	11¼c
Beet syrup	12	@	20.00	=	12c
	27				23¼c
4.					
Alfalfa hay	10	@	$15.00	=	7½c
Wild hay	15	@	8.00	=	6c
Beet syrup	9	@	20.00	=	9c
	34				22½c
5.					
Alfalfa hay	20	@	$15.00	=	15c
Oats	5	@	50.00	=	12½c
Wheat bran	5	@	34.00	=	8½c
	30				36c
6.					
Wild hay	25	@	$ 8.00	=	10c
Wheat bran	10	@	34.00	=	17c
	35				27c
7.					
Alfalfa hay	10	@	$15.00	=	7½c
Wild hay	15	@	8.00	=	6c
Oats	10	@	50.00	=	25c
	35				38½c
8.					
Wild hay	15	@	$ 8.00	=	6c
Oat straw	10	@	5.00	=	2½c
Wheat bran	12	@	34.00	=	20½c
	37				29c
9.					
Wild hay	25	@	$ 8.00	=	10c
Rolled barley	10	@	45.00	=	22½c
	35				32½c

We have learned that:

Beet syrup should be fed as a ration in an individual feed box just as we would feed bran or grain, and fed raw without diluting it with water or mixing with any other feed.

That if fed in open barrels or troughs and letting the horses help themselves some horses will eat as much as 16 or 18 pounds a day when 10 or 12 pounds will do them as much good.

That when starting out on feed we should begin light on the syrup just as we should in the case of grain.

That when started out properly the syrup should not scour when fed with straw or wild hay, and if fed with alfalfa and scouring results, we reduce the alfalfa hay instead of the syrup.

That beet syrup is a concentrated feed and is fully equal in digestible nutrients to grain and can be substituted, pound for pound for bran, oats or barley, at about one half the cost.

That we like to feed every alternate feed of syrup and grain.

That farm work, as a rule, is not so heavy as construction work, and the average farm horse of 1200 to 1400 pounds will do well when at work on 4 pounds of syrup at morning; 3 pounds of grain at noon and 4 pounds syrup at evening and the next day use grain, syrup and grain, and so on.

That syrup is not an unhandy feed when handled in barrels and stored on a platform about as high as the floor of a wagon box and drawn by the use of 1½ inch iron faucet.

That alfalfa at $15.00 per ton will furnish the necessary protein and fat at less cost than any other feed with which we are acquainted, and while it is really a very unbalanced ration if fed alone, the animals body seems to be able to adjust a very fair balance, as we know many farmers whose horses do well on alfalfa hay straight the year round and never see a pound of grain.

I should say that syrup is the next cheapest feed with a rather better balance in the protein and fat than either alfalfa or bran. Bran I think comes next to syrup in cost with oats and barley much more expensive.

Some importers of Pure Bred Percheron and Belgan horses lay in a supply of beet syrup when shipping their stock from the old country and replace at least one feed of grain per day with the syrup. They tell me that the use of it improves the horses skin and coat and minimizes the "ship-sickness" (sea-sickness) so common on board ship among horses.

We should not forget for a moment that the careful preservation of the manure is no small part of good feed lot management. One of the natural laws that is nothing short of Providential is; that from the foods that the animals consume about 90 per cent of the mineral and organic elements required to produce the food consumed is returned in the manure.

BETTING ON A SURE THING

The town boaster had just finished telling how good a shot he was with a rifle. The Oldest Citizen declared that he would bet a ten-spot that he couldn't hit a barn-door at one-hundred yards. Soon afterward the boastful young man returned from from the vicinity of the barn-yard with a disgruntled look.

"What's the matter, Tom-" asked a friend. "Didn't you hit it?"

"Now!" exclaimed the shooter. "He turned the door edge-wise."

In planning ornamental plantings for home grounds, remember that both the picture you see from the home and the picture the passer-by sees from the street must be considered.

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Light Weight Cushman Engines

Built light, built right—for farmers who want an engine to do many jobs in many places, instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. Throttle Governed. Schebler Carburetor. Friction clutch pulley. Runs at any speed.

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Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is original and successful engine for Binder. Also used on Corn Binders and Potato Diggers. Engines distributed from Salt Lake City. Engine book free.

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HINTS TO FARMERS

H. A. Regler.

If you haven't secured your next year's seed supply do it now, many varieties are a short crop, plant your early cabbage and tomatoes now in flats, and transplant them a few times, this means early cabbage and tomatoes for you.

Farmers should plant more carrots and mangel beets, the latter are especially valuable as a feed for dairy cows, while the former are a healthy horse feed; half sugar and Mammoth long red mangels are the two best varieties, both are heavy croppers.

In baking bread you should at least use ten to twenty per cent potatoes, not only will the bread taste better, but remains moist, but the best part of all it saves high priced flour.

Speaking of potatoes, the present price is entirely too cheap compared with other products. Potatoes have a food value for hogs and cattle of 25 per cent the cost of grain, and as most grain is $3.00 to $4.00 per 100 pounds potatoes are worth 75 cents to $1.00 for 100 pounds as a feed, in other words, if you cannot realize from 75 cents to $1.00 per hundred as they are on the farm without sacks, you are loosing money. Mrs. Fred Massey of Idaho sold $200 of turkeys and geese recently which were fattened only on boiled potatoes, if you boil the potatoes use about 10 per cent grain and boil with the potatoes, you then have a splendid feed for all your stock.

Be sure and plant a few acres of field peas this year, your ground will be in better physical condition after you harvest the crop than before you planted them. They are a splendid hog or sheep feed, if you want them for dairy cows 40 pounds of oats per acre and 50 pounds of peas. Plant the peas first 3 or 4 inches deep, a grain drill is best for this purpose and sow the oats later which should not be planted as deep as the peas.

If some of the smaller calves are not doing well separate them from the herd, provide good comfortable quarters for them, and feed a little grain or potatoes night and morning and you will find that you are well paid for the little extra care.

Many people condemn hog raising when in reality they are to blame themselves. Hogs must have good shelter and clean dry beds and keep in good growing condition, otherwise, they will not prove profitable, see that they have proper exercise. An old hog raiser who had made a success of the business told me once, as long as my hogs walk about with a nice curl in their tail I know they are doing fine.

Recently at the State Farmers Convention at Idaho Falls, Idaho, there was a 14 year old girl who had canned 835 quarts of fruit and vegetables, another girl of 15 who had to her record 1,000 cans, a boy of 15 who had raised by himself 530 bushels of potatoes to one acre, he had a letter from the County Agent to prove his claim, not only the parents of these mere children, but the entire community have every reason to be proud of them. It is needless to say that the parents of these children took special interest in their work.

If you want early winter layers look after you chickens now, select your best breeders and dispose of the rest. Grain feeds are high and you should economize wherever possible boil a kettle of potatoes daily add to this the table scraps and a little ground corn or shorts, see that they have grit and oyster shell and plenty of good clean water and a dry place to roost, a damp wet place means roop and other diseases.

In the west swampy places where you have been growing grass of little or no value, sow a little Alsyke Clover and Red Top, both are valuable hay products, on the alkali spots where only a few salt weeds will grow plant some Sweet Clover, in other words, make the farm do its best in every nook and corner by doing this, you are performing a patriotic duty for your country.

RAISE MORE POULTRY

Our meat supply is short and more poultry will help solve the problem. More poultry means more eggs and more eggs and poultry meat means a greater food supply. Poultry can be raised at lower cost and brought to maturity quicker than any other kind of livestock.

* * *

House the flock comfortably; keep houses dry and well ventilated, allowing plenty of fresh air and sunshine.

Remodel the old house—stop cracks and eliminate drafts.

Give hens a good straw litter to scratch in during the winter months.

* * *

Early hatched pullets produce more winter eggs and return the greatest profits. Early hatched chicks have the advantage of a longer and better growing season.

Hot weather retards the growth of young chicks.

* * *

Never allow the mother hen to range with the young chicks until they are at least two weeks old.

Enormous numbers of young chicks are lost each year by allowing them to run in the wet grass during their early life.

* * *

Shade and range for chickens will give the best results. Hot sun retards growth. There should be trees, corn, sunflowers, etc., on the range to provide shade during the hot summer months.

Chickens on range pick up much of their food.

* * *

Eliminate the male bird at end of hatching season. Fifteen million dollars is lost each year by allowing the rooster to run with hens during the summer months.—Produce the infertile egg. Dispose of the male bird not later than June 1. Market a better quality of eggs.

* * *

Green feed is excellent for poultry and can be substituted for a considerable amount of the grain ration. Grow oats, vetch, and rape for summer use; cabbage and mangel beets for winter. Store cabbage and beets in a dry room or bury in a pit and cover with straw and earth.

* * *

Greatest returns are procured by feeding sour milk or buttermilk to both young and old birds. Results in greater gains. Will require less gain. Produces more eggs. Increases the profits.

Makes a home market for waste byproducts.

* * *

Save eggs during April and May for use by preserving in waterglass. Mix 9 quarts of water, boiled and cooled, with 1 quart of waterglass. Will preserve 15 dozen eggs.

Place the solution in a 5-gallon jar. Store in cool place for winter use.

* * *

Keep the hens confined to your own land.

* * *

If you can get them, purchase well-matured pullets rather than hens.

* * *

Start with pure stock—that will make the increase and eggs for hatching marketable at better prices.

* * *

Chickens never wash, as many other birds do, but cleanse themselves of insects by wallowing in soil. For this reason every poultry house should be provided with a dust box.

* * *

This war is a test of nations even more than of their material resources and strength. The issue of it depends on the relative intelligence, moral qualities and attitude of the people engaged.—Secretary Houston.

Bigger and Better Crops Mean Victory

DO YOUR SHARE—START RIGHT WITH

Bailey's Reliable Seeds

SEND FOR SAMPLES AND PRICES TODAY

BAILEY & SONS CO.

(Reliable Seedsmen)

SALT LAKE

Soy Beans

FOR SEED

Globe Grain & Milling Co.

SALT LAKE CITY, UTAH.

Another Bushel---Another Dollar

Western Pulverizer, Packer and Mulcher. Three Machines in One. Adds Bushels and Tons to Every Crop without Increasing the cost of Production.

Ask your Dealer or Write the

Utah Implement & Vehicle Co.

Salt Lake City.

RAISE MORE POULTRY

The U. S. Government appreciates the necessity of greater production of poultry and eggs and frequently sends out posters and bulletins urging greater production. The following is the subject matter of a bulletin recently distributed:

"Managers of 'munition plants' which turn out egg shells instead of sharpnel shells, that contain a highly concentrated food of national popularity, to say nothing of the wish bones and drum sticks to boot which are eagerly picked by soldiers and civilians alike, have been asked to help.

"'An Army of Poultry Will Help Win the War' is the catch line of the third emergency poster issued by the Agricultural Experiment Station. While addressed in the main to farmers, it contains an appeal to town folk to start flocks. It argues that by raising eggs and poultry on the home lot family expenses will be reduced and more of the commercial supply of poultry and other food products will be saved for other uses.

"The expense needed in starting a small but practical poultry plant is not necessarily large," the poster states, and much garden and table waste can be used to supplement the ration for the flock. By marketing or eating the poor laying hens at once and raising a new brood from the better stock at an early date a basis is laid for success.

"It is argued that women and young people on the farms and in towns can perform patriotic and economic service at present in poultry work."

LIVE STOCK

THE WORLD CALLS FOR MORE HOGS

Joseph M. Carroll.

The country is calling for more meat animals to make up the grave shortage shown by world crop figures. The latest report of census figures shows that the visible supply of the world is far short of the needed amount. To ward off what may be a famine in meat, quick action is necessary. That the hog breeders and feeders of the country can do most to build up the meat stocks is known because they can produce more animals in a shorter period and have them ready for market than can breeders or feeders of other livestock.

A man with a dozen good brood sows can produce and finish ready for market close to one hundred hogs within a period of six months after birth. To have the same number of cattle ready for the killer would require as many cows and at least a year's time and generally within that period most cattle are not ready for market.

Taken bushel for bushel of corn fed to hogs and settle, the former will make about twice the weight gains as the latter. It is the cheapness of production along with the speed of building up numbers that points to the raisers of hogs to do their share of the work to relieve the shortage that has been evident for some time past.

High priced corn last fall can be blamed as much as anything for the shortage of hogs during the year. Last fall when crop prospects looked bad and high prices were indicated, hog owners shipped very close, in fact many sent their entire holdings to market. This left the country with fewer brood sows than has been the case in many years and when spring came, the foundation was not there upon which to build a hog crop large enough to feed the country in normal times not alone take care of the war demand at the same time.

Now conditions have become so grave that authorities are unable to figure the ultimate outcome. They point out the quick action must be taken. If this is the case, the hog men of the country can do their share of the work and more at this time because they can produce a crop of pork in far less time than can feeders of cattle and sheep make a surplus of beef and mutton. High prices will undoubtedly cause a large number to breed for larger herds from now on, but even with a substantial increase over the present numbers it appears that the demand will be great enough to ward off what might be termed low prices.

Crop prospects point to a larger and better corn yield than last year. More corn will mean lower prices for the grain and at the same time mean cheaper production costs to the feeders. While cattle feeders along with sheep men can do their part to increase the shortage, the hog men can do most and accomplish their work in a shorter period and produce meat that ranks as the leader for a nation in time of war.

If corn prices are to be low, hog skins are good containers in which to market it. Thus when the government calls for an increase in a hurry, they are really talking to the hog men, because they can do the work as they have done it before.

THE COST OF A 225-POUND PIG

By John M. Evvard.

The cost of producing a pig will vary, depending upon such factors as the season, the feeds used, system of management, the price of feeds, the methods of feeding, the breed, and others. Generally speaking, however, the cost under a definite set of conditions averages about the same one period of years as compared with another.

To take a pig from farrowing to 225 pounds in weight means that we feed him for a couple of months with his dam; and then after weaning, the rest of the time with his mates.

Some figures covering both these periods of development are to the point. The sows fed were gilts. They were fed a ration of shelled corn, plus 50 per cent as much of a mixture of middlings 4 parts and meat meal tankage 1 part. Or, to put it more plainly, 50 per cent as much of the supplementary mixture was fed, as of corn, which was allowed according to appetite. The pigs were given both shelled corn and the supplement mixture in separate self-feeders arranged in a creep, they having all they wished at any time.

Seven of these gilts on alfalfa pasture suckling their spring litters started with 51 pigs and at the end of 60 days ended with 44, and average of 6.3 pigs saved to the sow. At weaning time these pigs averaged close to 30 pounds. Counting the total grain per group, that is the gain on the gilts (which really was a loss) plus the gain on the pigs, we find that for every hundred pounds of gain made there was fed 240 pounds of corn, 97 pounds of middlings, and 24 pounds of tankage. This charges the loss on the seven pigs that died, they dying early. In other words it represents actually in practice how many pounds of feed it takes on alfalfa pasture to make a hundred pounds of gain on the swine. The pasture charges on each hundred pounds of gain made on the basis of a $10.75 charge on the pasture was a little over 21 cents. On the basis of corn costing 50 cents, middlings, $29.00 per ton; tankage, $50.00 per ton; and pasture, as stated, the total cost of a hundred pounds gain was $4.42. Inasmuch as these pigs weighed around 2 pounds at the beginning of the suckling period the total cost per pig when weaned (not including the farrowing cost which really means the cost of carrying the sow through the pregnancy period) is $1.24.

Now what is the record when the weaned pigs are placed on alfalfa pasture and allowed to husle for themselves? The pigs were fed a 3 percent shelled corn ration during the forage season, the alfalfa being splendid. Of meat meal tankage they received not quite 2 pounds daily on the average for the entire period. This meat meal tankage, however, was not fed while the alfalfa was exceptionally good; namely—from June to September. On November 5th, at the end of the pasture season, the pigs weighed 196 pounds; at which time they were put on self-feeders in dry lot, they receiving corn and meat meal tankage separately. Here they continued for 22 days until they reached the 225 pound mark.

The feed required for a hundred pounds gain was 389 pounds of shelled corn and 17 of meat meal tankage. Very little salt was consumed, or only .2 pound for each hundred pounds of gain made. On the basis of feeds priced as above, the cost of grain and forage for a hundred pounds gain was practically $4.00. To make these 30 pound pigs therefore at weaning time weigh 225 pounds they would necessarily have to gain 195 pounds, which, at $4.00 per hundred, would necessitate a cost of $7.80.

Add the suckling cost of $1.24 to the after weaning cost of $7.80 and we have a total feed cost of $9.04 to produce a 225 pound pig after farrowing.

Some of our records show that on the basis of 50 cents corn a new-born pig from gilts will cost approximately 40 cents. If seven are farrowed and six live this will make the cost of the pigs that live 53 cents. Add this to the $9.04 and we have a total cost of $9.57 to cover the feed cost of a 225 pound pig, or $4.21 a hundred pounds when corn costs 50 cents; meat meal tankage, $50.00; wheat middlings, $29.00 a ton; and alfalfa pasture, $10.75 an acre.

Understand that this is feed cost, and does not include interest on the investment, labor, and other charges.

Had these sows and pigs been self-fed during these periods of the pig's development the cost would have been a little less than the above figures.

(Cost of feeds today must be taken into consideration also the price at time of selling.)

CO-OPERATIVE BULL ASSOCIATIONS

There is a lack of definite purpose in the breeding of livestock on the part of the American farmer. The farmer who has only a few cows usually has them bred by the nearest available bull, often without regard to breed or breeding. The result is a promiscuous admixture of breeds and lack of improvement.

The cost of bull service also falls heavily on the commercial dairyman with a small herd as bulls must be changed every two or three years to avoid inbreeding. He therefore, as a rule, buys a bull calf from the nearest farmer who keeps purebred cows of the breed in which he is interested. Too often cost is the first consideration. Too seldom is any authentic production record of the bull's ancestors available. The result is lack of improvement. Though a great bull may occasionally be secured in this way he will in nearly every case have been disposed of before his heifers come in milk and his value has been determined. In this way many of the greatest bulls have been lost to the dairy industry. A Co-operative Bull Association will remedy these difficulties.

A co-operative bull association is a farmers' organization whose purpose is the joint ownership, use and exchange of three or more high-class purebred bulls. The territory covered by an association is divided into three or more breeding blocks, and a bull is stationed in each block for the service of the 50 to 60 cows in the block. Every two years the bulls are interchanged. Thus at the initial cost, a bull for every 60 cows is provided for six or more years. The cost of bull service is thus greatly reduced, the very best bulls can be obtained, and the man with limited means and only a few cows is enabled to improve his herd. Bulls of outstanding merit are preserved for their entire period of usefulness. Associations of this kind teach co-operation, encourage careful selection of cows and calves, introduce better methods of feeding and management, intelligently fights infectious diseases of cattle, and assists in the marketing of dairy stock and dairy products. Assistance in organization may be obtained by writing to the Dairy Division, Federal Building, Salt Lake City, Utah.

VACCINATION FOR THE PREVENTION OF BLACKLEG IN CATTLE

By Dr. L. S. Campbell, United States Inspector, Bureau of Animal Industry.

Following out the policy of our President in conservation of our resources, and especially our food supply, the Livestock Sanitary Board of Utah in co-operation with Bureaus of Animal Industry represented by Dr. F. E. Murray, of Salt Lake City, inaugurated a campaign against the disease commonly known as 'blackleg" among cattle in the State of Utah. And an order, or Proclamation, was issued requiring the owners of all cattle between 6 months and 2 years of age to have them vaccinated as a means of preventing the loss occasioned by this disease.

Blackleg, or symptomatic anthrax, is an infectious disease of young cattle caused by a bacillus called the blackleg, or symptomatic anthrax bacillus and the disease is very wide spread on the farms, pastures, and ranges of the United States and causes an annual loss of from 1 to 2 per cent, and in some sections where vaccination, as a means of prevention is not practiced it reaches 5 per cent or more. Only young cattle in good condition are af-

YOU SAVE

FROM $7.00 TO $15.00

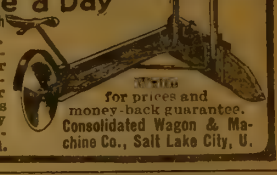
on every saddle. Send for our free catalog from maker to consumer.

The Fred Mueller Saddle and Harness Co.
1413-15-17-19 Larimer St., Denver, Colo.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.
A. J. PLATT, MFR.
BOX 0 STERLING, ILL.

DITCHING A Mile a Day Is Easy With This Simplex.



Unequaled on irrigated farms for cutting or cleaning laterals. War time tool. Equals 100 men. Mostly all steel. Reversible. 10 days' trial. Write for prices and money-back guarantee. Consolidated Wagon & Machine Co., Salt Lake City, U.

USE THE WESTERN PULVERIZER, PACKER AND MULCHER
3 MACHINES IN 1

for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.
MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS
1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information.
Western Land Roller Co., Box 322 Hastings, Neb.

IRON AGE GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 30 combinations, $4.50 to $30.00. Write for booklet.
Bateman M'f'g Co., Box 83C, Grenloch, N.J.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

fected and the first sympton is usually lameness in one leg; usually one front leg, though the disease may develop in a hind leg, or in the muscles of the back or loin. In a short time the animal refuses to rise and upon passing the hand over the affected part you hear a crackling sound caused by gas bubbles just under the skin. The disease progresses very rapidly and in a few hours the calf usually dies. Upon examination, the muscles of the afflicted part will be found to be very black—hence the name of "blackleg, or black-quarter."

No cure for the disease has ever been discovered but it may be prevented by vaccination, if this is done before the calf contracts the disease. It requires from 5 to 8 days for the vaccine to take effect and there may be some loss for that length of time following vaccination. Forest Officials and others estimate that the loss from blackleg on the Forest Reserves is at least 1 per cent during the time the cattle are on the Reserves.

141,545 doses of vaccine has been issued by the Salt Lake Office of the Bureau of Animal Industry, since the Proclamation was issued on August 28th, effective September 15th, 1917. Figuring a 1 per cent loss, without vaccination, we find that 1,415 cattle would have died, and valuing this 1,415 head of cattle at $50.00 per head the loss would have amounted to $70,700.-00—saved to the stock growers of Utah by vaccine issued through the Salt Lake Office alone. Besides this the Live Stock Sanitary Board issued about 75,000 doses and a great many doses were purchased from drug companies, making a total saving of at least $100,000.00 to the stock growers of Utah, in consequence of the Proclamation of the Live Stock Sanitary Board and assistance of the Bureau of Animal Industry.

"Hurry! Flee! The boat is torpedoed!"

"Just a minute, dear; you wouldn't want me to go on deck with my hair like this!"—Le Rire (Paris).

FOOD ANIMAL SITUATION

Dr. H. J. Frederick, Utah Agricultural College.

About two-fifths of the farm products are represented by animals and their products. The Food Administrator's estimate, as regards animals, is shown in the following table:

United States

Cattle increased	7,090,00
Sheep decreased	3,000,000
Hogs increased	6,275,000

Western Allies

Decreased	8,420,000
Decreased	7,500,000
Decreased	7,100,000
Total	33,020,000

Before the war the wool was strained to meet the demand for animal products because of the ascending standard of living. The war has caused an already difficult situation to become more difficult.

The diversion of productive labor into war channels has greatly diminished the production of fodder in all of the countries at war; its importance has been curtailed or checked because of shortage in shipping, etc., with the result that, for lack of feed and shipping, many animals have been killed, and those that survive because of reduced and inferior rations, have greately diminished their output. In face of this dimunition, there is an increased demand for animal products on the part of millions of individuals, who must have them by necessity of extreme physical labor in the production of war materials. Again, the supply of wool and leather has decreased at a time when there are additional demands for these supplies which must be met, for clothing and materials for the soldiers.

Outside of the United States there has been a decrease of 39,525,000 hogs. This number has been exceeded only by sheep. Cattle are not far in the rear of the hogs in their diminishing numbers.

The problem is not only to supply the needs of the allies, but to face an increasing demand for a diminishing supply while the war goes on, and safeguard as far as possible against animal bankruptcy after the war is over. The candle is burning at both ends and will so continue until peace arrives. The earlier the victory the sooner the adjustments can be made.

United support is essential to suppress the downward tendency of the animal bankruptcy after the war is that the United States stands not only for the United States, but for united support, and that means US—all of us.

BUY A PIG

C. L. Bray.

If you want to burn the road,
Buy a Pig.
If you want to raise the load,
Buy a Pig.
Oh, he's little, but he's wise,
He's a terror for his size,
And he's quick to advertise—
Buy a Pig.

If you want the cheapest board,
Buy a Pig.
If you want to own a Ford,
Buy a Pig.
He is solemn but he's fat,
And he knows just where he's at,
And he always comes to bat.
Keep a Pig.
He makes sausage, ham and sich,
Pickeled feet and bacon flitch,
And he makes him owner rich.
Keep a Pig.

HE DIDN'T CARE

"John, John," whispered an alarmed wife, poking her sleeping husband in the ribs.

"Wake up, John; there are burglars in the pantry and they're eating all my pies."

"Well, what do we care," numbled John, rolling over, "so long as they don't die in the house?"

FARMER ASKED TO HELP WIN WAR

(Continued from page [illegible])

making it good to lend a helping hand to men struggling for their [illegible] everywhere. You remember that it was farmers from whom came the first shots at Lexington, and set aflame the revolution that made America free. I hope and believe that the farmers of America willingly and conspicuously stand by to win this war also. The toil, the intelligence, the energy, the foresight, the self-sacrifice and devotion of the farmers of America will, I believe, bring to a triumpant conclusion this great last war for the emancipation of men from the control of arbitrary government and the selfishness of class legislation and control, and then when the end has come, we may look each other in the face and be glad that we are Americans and have had the privilege to play such a part."

QUITE UP-TO-DATE

"Well, what sort of wedding presents did you get, girlie, the usual assortment of berry spoons and pickle forks?"

"Not on your esteemed life. I got a sack of potatoes, four dozen fresh eggs, a peck of onions, and a liberty bond."

"SPARE THE ROD," ETC.

Mrs. Hive—Why are children so much worse than they used to be?

Mrs. Bee—I attribute it to improved ideas in building.

Mrs. Hive—How so?

Mrs. Bee—Shingles are scarce, and you can't spank a boy with a tin roof.

EAR TAGS PERFECT
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

Where Can I Buy 500 Pullets?

Here is only one of the many, who are interested in increased poultry production. Have you any

GOOD BREEDING FOWLS
HATCHING EGGS
BABY CHICKS

Now is the time to advertise them. The Utah Farmer is making a special rate for poultry advertising for the next month or two in order to help get buyer and producer together. The way to sell pure bred poultry, hatching eggs and baby chicks is by advertising them, let the other fellow know what you have for sale.

Send coupon today. Write for rates and how we can help you.

UTAH FARMER

Kirkham Building **Lehi, Utah**

The Utah Farmer, Poultry Adv. Dept.
Kirkham, Building, Lehi, Utah.

Gentlemen: Send me your advertising rates to Poultry Breeders and oblige.

Name .....

Town .....

State .....

R. F. D. .....

LEGUMES AND THE NITROGEN SUPPLY OF THE SOIL

(Continued from page 3)

for twelve years are given in Table I.

Table I. Nitric Nitrogen Found under Various Crops at Different Seasons of the Year Pounds per Acre to a Depth of Six Feet.

Crop	Spring	Midsummer	Fall	Average
Alfalfa	22.3	15.8	32.8	23.6
Oats	35.7	14.1	20.6	23.5
Corn	24.8	18.9	22.0	21.9
Potatoes	81.1	60.8	54.2	65.3
Fallow	81.5	53.6	62.6	65.9

Here we find the legume, alfalfa, removing the nitric nitrogen from the soil just as fast as do the non-legumes. Yet this soil was well inoculated with the symbiotic bacteria which undoubtedly assisted the alfalfa in obtaining free nitrogen from the air when needed, but not until the soluble nitrogen had been drained from the soil to its full extent, as is shown by the fact that alfalfa soil never contains more than does oats and corn land and is very poor as compared with potato and fallow soil.

It may be argued that the small quantity of nitric nitrogen in the alfalfa soil is one to a lack of its formation as it is not needed by the legume,—hence not formed; but this conclusion is not warranted by the facts in the case as may be seen from the results obtained where the speed of formation of nitric nitrogen (nitrification) was measured. These also are the average results extending over a number of years and obtained at the Utah Experiment Station.

Table II. Milligrams of Nitric Nitrogen Produced in 100 Grams of Soil in 21 Days.

Crop	Spring	Midsummer	Fall	Average
Alfalfa	3.15	7.48	3.08	4.56
Oats	2.40	4.00	3.00	3.13
Corn	2.18	3.50	1.48	2.38
Potatoes	3.00	15.55	5.60	8.04
Fallow	1.30	5.50	2.48	3.09

Here we find the quantity of soluble nitrogen being produced in the alfalfa soil greater than that produced in either the oat or alfalfa soil and there is no doubt but that this is one reason why an increased yield is obtained the year following the plowing up of an alfalfa field, for this increased action is noted the next year after an alfalfa field is planted to some other crop. This is due to the alfalfa plant stimulating bacterial organisms of the soil so they make available faster the nitrogen of the soil, but this only depletes the soil of its nitrogen more readily than the non-legume as it is the nitrogen already combined in the soil on which the nitrifying organisms act. Hence, we must conclude that alfalfa not only feeds closer on the soluble nitrates of the soil, but it also makes a greater drain upon the insoluble nitrogen of the soil by increasing the nitrifying powers of the soil, and would therefore deplete the soil, if the entire crop be removed, more readily than would other crops, a conclusion which is borne out by the direct analysis of the soil. For the analysis of a great number of Utah soils which have grown various crops for a number of years—some of them having been into alfalfa or wheat for upward of thirty years—revealed the fact that almost invariably the alfalfa soil contained less total nitrogen than did the wheat soil. The average for a great number of determinations made from alfalfa soils was 7,232 pounds per acre of total nitrogen, while the average for a great number of wheat soils was 7,398 pounds.

These are average results from a great number of determinations made on adjoining alfalfa and wheat soil and they clearly indicate that in ordinary farm practice the alfalfa is making just as heavy a drain upon the soil nitrogen as is the wheat.

From a consideration of the feeding and stimulating effect of the alfalfa upon nitrates, and the actual quantity of total nitrogen remaining in the soil after wheat and legumes, we must conclude that the legume does not increase the nitrogen of a common agricultural soil—even in the arid region where the nitrogen is low—when the entire crop is removed.

This conclusion does not, however, mean that crop rotation should not be practiced, for there are many reasons why crop rotation commends itself to the careful farmer, but it must not be used and the legume removed with the intention of maintaining soil fertility. This may appear to be an unfortunate conclusion, but it is just the reverse, and if its teachings be heeded it means a fertile soil and an economic gain to the farmer from the system of farming which it requires him to adopt.

There are two practicable methods of maintaining the nitrogen content of the soil. First, planning systems of crop rotations with legumes, the legumes being plowed under and allowed to decay thus furnishing nitrogen to the succeeding crop. Second, practicing a combined system of crop rotation and livestock farming.

Three tons of alfalfa contain 150 pounds of nitrogen, all of which we could assume came from the atmosphere; assuming the quantity found in the roots as coming from the soil seventy-five bushels of wheat is equivalent to the nitrogen found in the grain and straw. If the alfalfa is plowed under some of the nitrogen would be lost to the growing plant in the processes of decay and leaching, but that the total nitrogen of the soil may actually be increased by the turning under of the legume is certain from field experiments.

The second method of maintaining the nitrogen and organic matter of the soil—the combined rotation and livestock method—is the more practical and if systematically practiced will not only maintain the nitrogen of the soil but will prove of great economic value to the individual following it. For it consists of a rotation in which the legume plays a prominent part. The legume to be fed and all the manure returned to the soil which would mean the selling from the farm the hay crop in the form of butter, milk, or beef which carries from the soil only a fraction of the nitrogen stored up by legume; moreover, it brings for the producer much greater returns than does the system in which the legume is completely removed from the soil.

It must, however, be remembered in this system that only about three-fourths of the total nitrogen of the feed is recovered in the dung and urine. So that in place of three tons of alfalfa adding 150 pounds of nitrogen to the soil from the air, it would add only 120 pounds and this is where all of the liquid and solid excrements are collected and returned to the soil. But where the alfalfa is to be fed and the manure returned to the soil, the legume can occupy a much longer period in the rotation and that with greater economy than where the legume is to be plowed under directly.

TO AVOID CAN SHORTAGE

Shortage of tin for commercial purposes threatens to make the dairy industry more and more dependent on the present supply of cans. The Food Administration recommends that all shippers of milk and cream locate and bring into use as soon as possible all cans along the highways and byways of traffic and keep them in good condition by thorough drying after washing, and by careful handling.

Managers of dairy establishments and shipping stations are asked to discontinue the practice of loaning cans. Experience has shown that loaned cans as a class are especially subject to rough treatment and are consequently short-lived.

Dairymen who ship cream—the Food Administration suggests—can market as much butterfat as formerly in fewer cans by skimming the cream richer. Ten cans of 35 per cent cream contain, for instance, as much butterfat as 17 cans of 20 per cent cream. The richer cream leaves more skim milk on the farm and makes shipping charges considerably less per pound of butterfat.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS.

IN THE BEAR RIVER VALLEY, one mile from Tremonton, 36-acre farm in high state of cultivation. This farm has a five-room frame house, barn and other outbuildings. We also have 18 acres of land adjoining this property that is also in a high state of cultivation. We have another 16 acres just across the road from the above mentioned two pieces of land, which is in first-class shape. All three of the above properties have a full water right in one of the best systems in the state. They are located on the main county road. They produced in rent to the owner last year $32.50 per acre. This is 6 per cent interest on $500 per acre after paying all expenses. When you take into consideration the location of this property, the improvements upon the same, the high state of cultivation which the land is in, together with the price of $195 per acre, I think that you will agree with us that it is one of the best buys that has ever been offered. We can sell these properties all together or any one separate, with reasonable payments down and long-time payments on the balance at reasonable rate of interest. This property is owned by a man living in Colorado, and for that reason he is wishing to dispose of same.

2½ ACRES, 1½ blocks from the street car line. This property has a good water right and is all under cultivation. Also flowing wells. The soil is of a black loam nature, some of the best we have in the county. There is a six-room house on this property, barn and other outbuildings. We can take an auto in as part payment on this property. Purchase price $2,800, $200 down and $20 per month at 6 per cent interest.

160 ACRES OF LAND IN THE BEAR RIVER VALLEY, 80 acres of this being irrigated and 80 acres of it being dry. We can divide this 160 up to suit the purchaser. We can either sell the 80 acres of watered land separate, the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of dry together. We can sell the 160 acres at a cash payment of $3,000 down and any reasonable length of time on the balance, at 7 per cent interest. The purchase price for the 160 would be $10,500.

50-ACRE DAIRY FARM in Salt Lake county. This is one of the nicest dairy properties that we have adjacent to Salt Lake City. Anybody desiring to go into the dairy business would do well to investigate this. This land is some of the best land we have in the county and is all under cultivation and all under irrigation, having a good water right—in fact, more than is needed. The soil on this farm is a dark sandy loam, rich and fertile. There are some very fine improvements both in the line of barns and residences; however, the residence is hardly completed at the present time. Has the light, power, telephone and all modern conveniences that go to make dairying easy and pleasant. We can sell this farm at $252 per acre, $2000 down and easy terms on the balance.

160-ACRE FARM IN CACHE VALLEY. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres of this that are tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre; the pasture land at $10 per acre, or, if party does not wish to purchase the pasture land, we have now a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary as part payment.

60 ACRES OF LAND IN THE BEAR RIVER VALLEY, all planted to fall wheat. The soil is of a sandy loam nature, with full water right from the Bear River canal. We can sell this at $115 per acre on any reasonable terms, at 7 per cent interest. If you are looking for a nice farm that will pay for itself, it would pay you to investigate this.

KIMBALL & RICHARDS,
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT.

HAVE BUYERS FOR GOOD FARMS
AT RIGHT PRICES
List your farm with us
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

AN IDAHO RANCH BARGAIN

160 acres that now produce 100 tons of hay. Can be made to cut 500 tons. Near town, railroad and adjoins one of the best ranges in the state of Idaho. An abundance of timber and water. This ranch is ideally located. Fair improvements with some machinery. Price $7500, one half cash, balance terms at 7 per cent.

FEDERAL LAND COMPANY
Ogden Utah

PERSONAL ATTENTION

Is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.

BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, December 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, White Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.

BATES & SONS
Guhama Farm
Provo Utah

HOOVER SAYS:
A hen in every Home.
The Best is wise economy. Arcady Place Hennery booking orders for day old chicks.
Shoot in your requirements.
Tremendous demand.
A. T. SMURTHWAITE
Wellsville, Cache County, Utah.

MANN'S BUFF LEGHORNS
FINEST QUALITY
BEST LAYERS
Eggs $1.50 to $4.50 per 15.
M. H. MANN
Woods Cross Utah

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS
Breeders of Percheron Horses and Ramb ullet Sheep.
W. S. HANSON, Prop.
Collinston Utah

FOR SALE
Span large registered Perchon mares, 2 and 4 year old, beauties. Dam imported from France. Must sell, price right. Write or call on
C. A. PARRISH
Centerville Utah

Registered Holsteins For Sale
A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.
LELAND STEVENS
Oakley Utah

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

FARM SURVEY IN UTAH COUNTY

Farm management specialists of the U. S. Department of Agriculture who have investigated conditions prevailing on the irrigated lands of Utah Lake County, recommend general farming, with orcharding as a side line, as the system most likely to prove successful on these lands. They urge the small fruit farmer to get more land and to farm more extensively, or at least to practice greater diversification on his present acreage. Sugar beets and beans are suggested as crops that may serve to give stability to the business of the small fruit farm.

These recommendations are based on a farm management survey of 106 representative farms of the district. This survey, made in 1914, was undertaken to determine, approximately, the profits that farmers receive or may reasonably expect to receive in the irrigated sections of the west.

Summarizing the facts brought out by the survey and the conclusions drawn from them, the specialists say:

1. The size of the farm business, the type of farming followed, and the diversity of income, each has an important bearing on profits. As regards size, the labor income from 26 small fruit farms and general farms averaged $350; for 29 large fruit and general farms, $598; and for 20 livestock farms, $1,394. As regards type of farming, the labor income of 16 small fruit farms averaged $302; of 18 small general farms, $383; of 17 large fruit farms, $611; and of 24 large general farms, $646. Eighteen dairy farmers made an average labor income of $1,427, and three small poultry farms averaged $483.

2. The greatest need of the small farmers in this district is more land to work. Failing this, outside labor is a necessity if a good living is to be secured.

3. Although in many cases a greater diversification is needed, on the small general farms this is not nearly as important as an increase in size of farm.

4. The small orchardist should increase the area of his farm if possible and should also diversify. When he diversifies the fruit grower should do so with a crop or crops the market for which is more certain than for fruit. Under existing conditions one of the best methods for doing the latter is by the growing of sugar beets. Beans would also appear to merit much attention in this area.

5. In general, so far as practicable, the farmer taking more land should do so by rent or lease, rather than purchase subject to a mortgage, as he can usually secure the use of the land for little more than half what must be paid on a mortgage. The money saved can be used for subsequent purchase. This, of course, does not apply to the man with cash in hand for immediate purchase.

6. Some operators live in town and travel many miles a day to and from the farms. From a farm-management viewpoint this is an inefficient system.

7. With land values and labor cost so high, and the marketing situation so complicated, farmers in this area should make every effort to keep at the maximum that part of the family living which is secured directly from the farm. The garden should be one of the regular enterprises and should be given adequate care.

8. A further increase in the number of very small farms in this region would seem to be unwise. The operators of such units have not land enough to keep them busy at profitable work. About 30 acres seems to be the smallest size for efficient management without much reliance on livestock. Forty or fifty, preferably about 50 acres, seems to be the smallest unit for efficient management where livestock enterprises are given a prominent place by the typical farmer. This is especially true of dairying.

9. When feasible, livestock enterprises may well be made a part of the farm business. The kind and extent will depend on conditions. Men at present engaged in dairying should replace poor cows with better ones. Pork production merits more attention than it now receives.

10. In general, owing to market conditions, the proper place for orchard and truck products in this region is on general farms where they are used as fillers in the business as a whole. Certainly fruit should be produced only on farms where the orchard enterprises are supplemented in a substantial way by more extensive activities. The general farms which grow truck and fruit as secondary enterprises approximate the ideal cropping combination for this region.

COST OF VARIOUS FUELS USED IN PUMPING FOR IRRIGATION

(Continued from page 3)

year, it would cost him $1.83 per acre for fuel. Furthermore, it can easily be shown from the above table, that with a plant which is 50 per cent efficient, it will require 0.46 gallons of gasoline to lift one acre-foot of water one foot high, or 16.5 pounds of oil, or 27.5 pounds of coal, or 2.48 kilowatt hours of electricity.

It must be distinctly understood that the above cost data refers to cost of fuel only. The final selection of the pumping plant must be determined on the basis, not only of cost of fuel but of the cost of initial installation of plant, the attendance required during the operating season as well as on other less important features. Where electric power is available, the choice is between a steam engine, a gasoline engine, and an electric motor. The electric motor usually requires a minimum of attendance, is reliable, and the first cost is less than that of the other forms of power. In figuring on the cost of pumping, the following units are found convenient:

At 50 per cent efficiency, one horse power will lift one second foot 4.4 feet high or 2.27 horse power will lift one second foot 10 feet high.

Don't keep a male bird unless you want fertile eggs. Hens lay just as well without a male.

Don't overstock your yard. Twenty to thirty square feet for each hen is an average allowance.

WE WANT FARM LANDS
IN EXCHANGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

PURE BRED DUROC JERSEY GILTS
I have 16 head of good Pure Bred Duroc Jersey Gilts bred to a Defender boar, whose sire was Grand Champion at Utah State Fair. These gilts will develop into fine brood sows, and by buying one or more you will make fine profit from them, as well as do a duty to your country in a time of urgent need.
H. A. FEAREY
Mosida Utah

ATTENTION FARMERS
Here is an opportunity for any farmer who needs a brood sow or two-bred and guaranteed safe with pig for an early spring farrow.
The Western Berkshire Congress and Sale will be held at Davis California on February 21 and 22, where pure-bred Berkshire sows and gilts the pick of the best herds in the West have been consigned and will be sold at public auction.
Also—a new idea will be introduced at this sale—the bringing out of a carload of especially selected bred sows from the greatest Berkshire herds of the East and Middle West under the personal charge of J. W. Clapp, the well known Superintendent of the Hog Department at Hamilton Farms, New Jersey. This will give buyers the greatest opportunity for purchasing the cream of the bred sows of both Eastern and Western herds that has ever been presented to buyers in any one sale anywhere in the world.
This sale brings the Golden opportunity of all the year to get that which they need in a bred sow or gilt, and at their own price.
Come to Davis if you can. If not send a mail bid to A. N. Blackmer, Dierctor, Midvale, Utah, or to F. R. Steel, President, Grants Pass, Oregon. If you wish to consult with either of these men as to what bid it would be best to send, write at once and they will be glad to advise you, and to do all in their power to help you get just what you need and want.
Don't pass up this opportunity farmers—pork is high and Uncle Sam needs all the pork it is possible to produce to help down the Kaiser.
A. N. BLACKMER
Midvale Utah

DUROC BOARS
A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.
Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

FOR SALE
Registered Hereford BULLS and HEIFERS $100 to $200 each.
20 Registered BERKSHIRE PIGS farrowed December ready for delivery at $15 each.
Registered ANGORA GOATS of both sex.
And a car of grade CALVES, Steers or Heifers.
Also some nice MULES.
My farm is located three miles north of Ephraim. But I will met you at Ephraim on an appointment, and you can inspect the stock before buying.
JAMES G. OLSEN
Ephraim Utah

DUROC JERSEY BOARS
Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.
ERIK W. OLSON
Virginia Idaho

ORDER SPRING PIGS NOW
Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.
VICTOR R. FISHER
Oxford Idaho

Poland Chinas
FOR SALE
1 yearling boar.
2 yearling tried sows, April farrow.
1 two year old sow, March farrow.
15 late Summer and Fall boars and sows.
All the big boned easy feeding kind, the best breeding that ever come out of Iowa. Address
EARL BENNION
Taylorsville Utah

$1000 Per Acre
Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.
H. A. PINEGAR
Wellington Utah

BABY CHICKS—BABY CHICKS
White Leghorns, Brown Leghorns
$10.00 per 100.
R. I. Reds, $15.00 per 100.
ORLAND HATCHERY
Orland, Glenn County, California

Preventing Potatoes From Freezing In Cars

Some very careful observations and investigations have been made by the United States Department of Agriculture for the preventing by freezing of potatoes in car load shpments.

Although the recommendations are subject to modification as the investigation develops, these suggestions are the best commercial practices, if followed will help eliminate a large percentage of the loss in shipment of potatoes.

In refrigerator and other insulated cars heated by stoves in center:

First—Always use a false floor. This floor must permit air to circulate freely under the load from the end of the car to the heater in the center so absolutely nothing should be permitted to block this space. The false floor should be supported and held in place by two by fours running lengthwise (never crosswise) of the car.

Second—The floor must be of strong enough lumber so that when the car is loaded the boards of the false floor do not sag and thereby cut off air circulation.

Third—If false side walls are to be used along the sides of the car they should reach to a point not closer than six inches from the roof of the car and yet must extend above the top potatoes. There must be free opening for air circulation from the top of the car at every point along the sides (and ends also) into the space between the car wall and this false side wall thence down the sides to the space between the false floor and the car floor.

Fourth—If the weather is not severe enough to warrant the use of the false side walls in refrigerator and other insulated cars, it is probably better to paper the car sides so as to afford some added protection.

Fifth—It is also of utmost importance that there should be an open and free space for large volumes of air to pass from the top of the car down at all points at each end of the car to the space between the two floors and thence back to the heater to accomplish this. False end walls may have to be built. These must extend from a point above the top potatoes and yet not closer than six inches to the top of the car down to the false floor. There must be at all points a space of not less than four inches between the car end and the false end wall. The two by fours to support the false end walls should never be placed with the four inch side flat. The two inch space is not sufficient and the two by fours should be put in so as to leave the full four inches for free air circulation.

Sixth—In most refrigerator cars it is not necessary to put in a false end wall. The bunker bulk-head usually performs all of the duties of a false end wall space, being provided at the top for air to pass freely into the ice bunker and at the bottom for it to pass out under the false floor.

Seventh....Never load the potatoes in any part of the car so that they can cut off the free circulation of the heated air from the stove up to the ceiling out over the top of the whole car down at the ends and back under the false floor to the heater again. This is fundamental in maintaining a more or less even temperature in every part of the car to prevent freezing the potatoes at the floor while at the same time overheating those at the top.

Eighth—If the potatoes are loaded less than three feet from the stove at the center from the direct heat of the stove by a sheet of asbestos or other non-conducting material.

Ninth—Do not waste space. Load just as many potatoes into every car as is consistent with safety.

In box cars heated by stoves in center:

Tenth—When loading box cars in cold weather never fail to thoroughly paper the bottom and sides and ends up to the ceiling, running an extra strip of paper along the junctions of the walls and floor and at the corners, then put in a complete lining consisting of false floor, side and end walls. This lining should be made up of at least one thickness of boards and paper as with the false end walls described in paragraph 5 above. They (both side and end walls) should end from the top of the false floor to a point above the potatoes and yet not closer than six inches of the roof. At no point should the space between the false walls and the car walls be less than four inches at the ends and 2 inches at the sides.

Eleventh—Protect the potatoes near the stove from direct heat as in paragraph 8 preceding.

General Recommendations.

Twelfth—In loading all cars avoid the possibility of any potatoes or sacks working down between the false lining and the floor and walls of the car. In refrigerator cars particular care should be used to prevent them getting into the lower opening of the ice bunker thereby retarding the free circulation of air back to the heater.

Thirteenth—False doors (or fire boards) should be tight and well fitted when used in refrigerator cars. Always make the false door take the place of the door at the left as one faces the car from the outside by extending the false door several inches beyond the center of the door sill and padding this extension with burlaps. The door on the right may then be closed and a tight joint made but do not nail the false door and other together. Then the latter can be opened and the fire tender can get into the car from either side, an advantage that all readily appreciate.

Fourteenth—As far as possible paper all openings or cracks in refrigerator cars. See that all ventilaters are closed, ice plugs tightly in place, and the drain pipes stopped.

Fifteenth—Never load potatoes into a cold car; heat it for at least two hours directly before loading.

These recommendations apply primarily to cars of potatoes for relatively long shipment in cold weather.

KEEP THE COWS

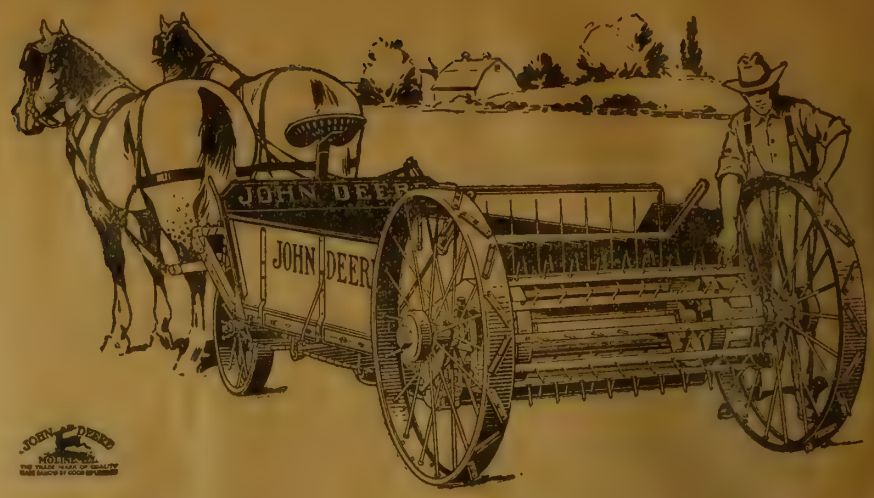
These are trying times for those who milk cows. Though the price they get for milk and butterfat has gone up a little it has not equalled the rise in the cost of production. With the scarcity of feeds, and the high values of the same, many are tempted to go out of the dairy business.

Though grain may bring more as cash than as dairy products, some change of plans should be made so the cows can be kept. A poorly fed cow is not a money maker, yet it is better at times to merely maintain life and wait for a change of conditions than to sacrifice that which will take years to rebuild. Instead of feeding as much mill stuff as formerly, it may be necessary to feed more fodder, or if fortunate enough to have silage, more of that, with hay and straw. The cows will not yield much milk on a poorly balanced ration, but is it not better to keep on raising dairy calves, and plan next year to raise more home grown dairy feed like silage, clover and alfalfa.

True, these hays and feeds have a market value that is tempting, but remember that this war is not going to last forever, and in two or three years those who have sold their herds will be mighty sorry.

The thing to do is to weed out the poor cows, breed up the herd to better production, and stay in the business. A cow testing association is needed in every community now, as never before. High priced feeds should be counted as a blessing if it drives cow keepers to become real dairymen.

Cull potatoes make profitable pork.



"The beater on the axle construction saves dollars for me in time, labor and cost of upkeep." —An excerpt from a user's letter.

JOHN DEERE SPREADER

Mounting the beater on the axle is the keynote of this better spreader. With this exclusive construction there follows distinctive savings that can be gained in no other way—advantages that mean more years of service, lower cost of maintenance, greater ease of handling and better quality of work.

Exceptional Spreader Value in These Features

EASY TO LOAD from the front to the rear—only 38 inches to the top of the box. You see where every forkful goes. A boy can load it.

THE DRIVE WHEELS ARE HIGH. The draft is not sacrificed. High drive wheels save horse flesh.

THE BEATER DRIVE is durable and strong. It has the same principles and is as simple as the triple-geared horse power. Gears are enclosed in a dust-proof case. They run in an oil bath. No dust or dirt can reach them.

THE JOHN DEERE is the simplest spreader built. Only half the castings on it necessary on other spreaders. No clutches or chains. Main working parts mounted on the rear axle. They can't get out of line, cause binding, heavy draft and breakage.

A BOY CAN OPERATE IT. Tell him where to set the feed lever and he only needs to put the machine in and out of gear. That's all there is to it.

REVOLVING RAKE INSURES even spreading. No bunching or choking. Every foot of ground is covered—heavy or light to meet field conditions. Wide spread attachment and straw spreading attachment can be furnished.

Books That Mean Saving and Profit on Your Farm—FREE

$15.00 a Day for Four Days

Tells the actual experience of a man and his two sons who made $60.00 extra money in four days on the White Rock Farm in Pocahontas County, Iowa. Interesting reading based on facts. Get this little booklet. Profit by this man's experience.

John Deere Spreader Booklet

Tells all about manure, how and when to spread it. Shows how spreading methods affect the value of manure. It's a real treatise on manure. Worth money to you. It also illustrates and describes the John Deere Spreader. Shows how simple and easy to operate it and why this machine will give better and longer service than other spreaders.

Better Farm Implements and How To Use Them

A 156 page text book for your library. Worth dollars. Contains a number of splendid authoritative articles on better farming methods. Tells how to adjust and operate many kinds of implements. Illustrates and describes plows of all kinds, disc harrows, corn planters, cultivators, listers, cotton tools, alfalfa and beet tools, mowers, rakes, stackers, loaders, grain and corn binders, corn cutters, grain elevators, shellers, manure spreaders, drills and seeders, lime sowers, hay presses, wagons, trucks and buggies.

To get these books, indicate the implements in which you are interested and ask for Package MS-242

JOHN DEERE
Moline, Illinois

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 24 LEHI AND SALT LAKE CITY, UTAH. FEBRUARY 16, 1918

Agricultural Needs of Utah

F. S. HARRIS, DIRECTOR UTAH AGRICULTURAL EXPERIMENT STATION

THE farmers of Utah are progressive and, as a rule, prosperous; yet a number of changes resulting in good might be made.

On the fifty-four million acres of land in Utah, only a few million are susceptible of intensive cultivation; much of the other land is mountainous or desert and can serve only as range for cattle and sheep. This means that the State will never support the agricultural population of a state like Iowa where 98 per cent of the land can be plowed. In spite of this apparent handicap, Utah has wonderful agricultural possibilities. Her rich soil, her streams of irrigation water, and her favorable climate insure a production of crops unsurpassed both in quantity and quality. None the less favorable are conditions for a prosperous livestock industry, which will help in maintaining a proper balance.

DR. F. S. HARRIS.

More Capital

Probably the Utah farmer has no more insistant need than that for more capital. Almost every farmer in the State could use more capital to good advantage. Profits would usually be greater if the farms were larger and had more livestock and better equipment. The farmer should not be satisfied with a "peanut stand" farm business when he could handle one of the proportions of a department store; but if he does not have capital he must confine himself to the small business. Certainly in the past he has not been able to get increased money without paying excessive rates of interest and crippling himself in giving security.

There is a popular fallacy that the "little farm well tilled" is the thing to have. This may apply to a few limited areas around the larger cities, but it certainly should not be taken too seriously for the State in general. The farmer simply cannot make a large income unless his business is large, and a large business in general farming cannot be conducted on a few acres of land. The land must not be sub-divided into tracts that are too small to produce a good income. If there is not enough land to go around, some of the would-be farmers must take up other work.

Cropping Systems

Utah must from now on give more attention to systems of cropping. During early days the land was fertile and but few crops pests and diseases troubled. Today a change in these conditions is demanding that crops be rotated, just as they have had to be in all the older agricultural countries of the world. No one rotation will serve all conditions; each soil type and each set of climatic conditions calls for its own system. No one knows just what systems will be best for the various conditions in Utah, but it is very certain that a great deal of attention must be given this problem by Utah farmers in the very near future.

Better Livestock

As the agriculture of the State intensifies, the quality of stock must improve. When the range was free and abundant the type of animal was not so important, but as forage becomes limited animals that will use this forage to the best advantage must be produced.

Range Management.

This also calls for better methods of handling the range. In a state where so large a percentage of the surface is used for grazing, more attention should be given to keeping the range productive. The proper distribution of stock so that no sections will be over grazed, the building of drift fences, the development of watering places near the feed, the eradication of poisonous plants, the introduction of better forage plants, and many other improvements will add greatly to the effectiveness of Utah's grazing lands.

Reclamation

Millions of acres of land now idle can be made to produce crops by reclamation through irrigation, drainage, and dry-farming. At present only a little more than 2 per cent of the area of the State is irrigated. This amount can be very much increased by storing water in reservoirs, by improving canals, and by a more scientific application of the land. Drainage in the State is only in its infancy. Many small tracts have been drained; a few large drainage districts have been organized; but the work must be extended to practically every valley in the State before its full possibilities will be realized. Dry-farming has developed rapidly during the last decade, but many tracts of land that can produce crops without irrigation still await the plow.

Manufacturing of Farm Products

Doubtless agriculture will be improved as much by the introduction of factories as by any other means. If farm products can be manufactured into the finished articles of commerce instead of having to be sold in the raw state the industry of farming will be greatly stabilized. Sugar factories, cheese factories, milk condenseries, creameries, canneries, pickle factories, and meat packing establishments, help to insure good markets and dependable prices.

The New Farm Life

The future farmer of Utah is destined to occupy a very prominent place in the life of the State. Whereas in the past he has probably been behind those of some other occupations in prosperity and in general standards of living, in the future

(Continued on page 9)

Inspection and Repair Week

Machinery and implements are going to play an important part in the increased production of food this year.

Our government and state officials recognize this and they are back of the movement for an "Inspection and Repair Week."

The week beginning March 4th has been designated as a time when every farmer and owner of machinery should inspect and carefully go over all his machinery, implements and tools to find out the needed repair parts, so that every one can be put in good working order and ready for the spring rush.

When a careful inspection has been made and a record made of repair and extras needed, an order should be placed for them so that there will be no delay in getting them.

This inspection and ordering of repairs is even more important to the man who owns machinery that is not handled locally, than to the man who purchased his machinery from a local dealer. Some of our larger dealers have expressed a willingness to help such farmers secure the needed repairs and extras. This is being done with a desire to help in the work of increased production of food stuff.

It takes time to secure repair parts for this intermountain country and the farmer or owner who delays the work of inspecting his machinery is making a serious mistake. Do not wait until "spring brakes" and think that you can secure on a day or two notice any extra you will need.

These are unusual times, transportation is uncertain, factories are working to the limit and we must consider these and many other conditions that effect the regular methods of doing business.

Inspection and Repair Week has the endorsement of the United States Department of Agriculture, U. S. Food Administration, the Utah Agricultural College, State Food Admisitration and the Utah State Council of Defense.

The larger implement and machine companies as well as the local dealers in all the small towns must co-operate with the farmers and owners of machinery to make the work a success.

Hand labor is going to be short and modern machinery of all kinds are going to help.

The main purpose of the inspection is to ascertain what broken parts, or nearly worn-out parts, of their machinery will have to be replaced to put them into workable condition by the time the spring work begins. To determine what of their machinery is so nearly worn out as would make it perferable and profitable to replace with new machinery entirely.

ORDER REPAIRS NOW

In the tremendous demand for farm implements that is certain to come this spring more than one farmer will be caught short and will have to scurry around in the junk yard to haul out the old machine he discarded last year because the boxings were worn so badly that the wheels would not run true. The machine is probably a little out-of-date and won't work quite as rapidly as a brand new one, but with a few new parts it will work very satisfactorily indeed.

The rub comes when the repairs are ordered. The number of farmers disappointed at the last minute in getting the new implements and who have to resurrect junked machines will be so great that the repair supply houses will be swamped. Even in normal times the repair proposition is a hard one to handle, but this year it will be found to be almost unmanageable.

When the delinquent finally realize that if they are going to get their crops raised this year they had better be hustling about it, repair orders are going to overwhelm the supply houses, there is going to be delay in filling them, there will be delay in shipment, and the farmer is going to be unavailably late.

Most of the repairs needed for farm implements are distributed from big centers, and an unusual demand for repairs is certain to cause a shipping congestion. This is going to be worse this year because of the serious situation already at hand. Freight shipments, always slow, will be slower than ever. Post offices are overcrowded, and the transmission of parcel posts packages is not going to be expedited to any great degree. Express companies have more to do normally than they can well take care of, and the average expressman has little appreciation of the importance of the farmer and even less sympathy for the farmer's needs.

The whole transportation system of the nation is seriously handicapped by the added demands due to the war, and it is the patriotic duty of every one to avoid causing any further exceptional demands upon it. There is no promise of immediate relief—the probabilities are that it will be worse instead of better.

So the logical thing for the farmer to do now is to get busy, look over his stock of implements, inspect them carefully for necessary repairs, and order the repairs now. By so doing he will give the supply house time to select and pack the proper parts, the transportation company will have a chance to deliver them, and the farmer himself will have time to attach them so that the machine will be in operating condition when the time comes to use it.

When the last snows of winter are gone is no time to wonder if the bottoms of the gang plow need sharpening or repointing. The time to attend to things of this kind is when the machine is put away for the winter, or at some slack time during the dull season. Some farmers make a practice of putting every implement in tip-top shape at the time it is put away, and this is indeed a good idea. On the other hand, it may be just as convenient to wait until all the field work is done, then at some time when other duties permit, have a repairing "bee" in which every machine is given a thorough overhauling. The ordering of new parts to replace worn or broken ones must, however, be done in ample time.

Nothing is so discouraging or annoying as to have to delay in the spring when all the neighbors are out in their fields, the gorund is fine and mellow, and is all ready for the plow. A day's delay may mean a hundred dollars lost. Time is money, indeed!

The wise farmer is not caught napping. He is in the field the first fit day. No time is wasted in driving back and forth to the express office, no extra men have to be put to digging post holes because there is nothing else to do, no days are slipping by, cutting down the growing season of the crops. The farmer is not lucky—he's simply businesslike—he ordered his repairs in time!

E. J. K. Ekblaw.

THE USUAL PLACE

A boy developed a sudden pain about 8:15 Monday morning. His mother, naturally solicitous, asked "Where do you feel sick, dear?" He considered a moment, then replied: "I feel sick in school."

Under new food regulations, the Swiss people are allowed only a pound of sugar per month per person. The butter ration is one-fifth of a pound per month.

This Sign has helped to sell over $10,000,000 worth of "Z" Engines to 150,000 farmers of America who demand the best for their money

FAIRBANKS-MORSE "Z" FARM ENGINES

LOOK FOR THE DEALER-WHO DISPLAYS THIS SIGN

SEE this sign at your local dealer's where this $10,000,000 "Z" Engine is in action. Get acquainted with the famous "Z" Engine for which 150,000 farmers of America have paid over $10,000,000 in backing their judgment.

They had seen all engines — *they decided* — and "Z" engines are proving the wisdom of their choice everywhere today on their work.

3 & 6 H.P. Use Economical Kerosene

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Both With Throttling Governor
1½ H.P. (Gasoline) $48.50 on skids
All F.O.B. Factory, With BUILT-IN MAGNETO

—These 150,000 practical Farmers saw the advantages of the "Z" Built-in Magneto, everything complete, no batteries to fuss with or buy.

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—They bought on *demonstrated* performance in action—regardless of price to get the biggest dollar-for-dollar values per H. P. ever built into an engine. **They acted wisely.**

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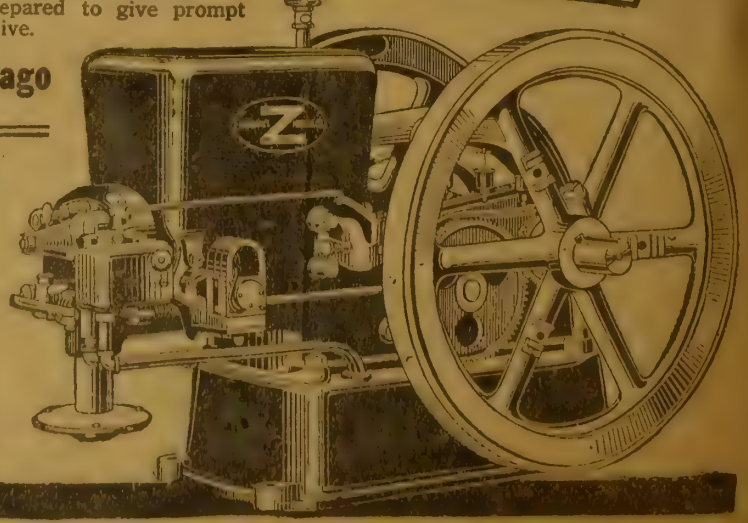

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3. Simplicity and Staunch Durability.
4. Light-weight, Substantial, Fool-proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

Don't think of Buying ANY Engine Till You See the "Z" in Action.

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PUBLISHED EVERY SATURDAY

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FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, FEBRUARY 16, 1918 No. 29

More Potatoes Should Be Used

Written for the Utah Farmer.

Possibly there is no other food product in Utah that should be used more than potatoes.

Potatoes have been placed on the list of official substitutes for wheat flour.

We have one of the largest surplus crops of potatoes ever produced in Utah.

Our government realizes the potato situation and have just issued this special:

Under existing and prospective conditions no material quantity of potatoes can be exported or converted into non-perishable products this season. The crop can not be carried over. It must be consumed or wasted. The food situation throughout the world demands that it be consumed effectively to relieve the existing strain on the supply of cereals. It is the one great food resource of the world upon which there is now danger of a heavy loss and the Department is of the opinion that the situation demands that farmers sell freely; that the larger dealers move their stocks rapidly; and that the retailers content himself with the smallest possible margin of profit, realizing that he is now the most important factor in speeding up potato consumption.

The farmers are asked to sell at a reasonable price which they are willing to do but they do not favor the idea of the consumer being charged more profit on a bushel of potatoes for selling them than the farmer received for producing them.

It will be a splendid idea to have a potato day each week and urge the need of using more potatoes every day of the week. It will help stimulate consumption and help save the wheat which we need so much to send abroad.

In order that the surplus crop of potatoes can be marketed without a loss to producer, a close co-operation of buyer and seller is necessary.

Each month Uncle Sam makes an agricultural survey—appraises his crops and calculates just what yields he may expect. He has just found that he has more potatoes and less wheat than earlier inventories had indicated. He has also found that the potatoes are being consumed very slowly, that much of the supply remains in storage, and that there is a prospect of considerable wastage unless marketing of potatoes becomes more general.

So Uncle Sam urges you to eat more potatoes and less bread. Thus, instead of being wasted, the big potato crop will release wheat for the use of men who are fighting in France for your liberty. If the potatoes are not eaten this winter they may glut the market next spring, and when the new crop comes on we will have more on hand than can possibly be eaten. If that happens the man who has been holding will lose, as will the producer. And, what is of vastly more importance than any individual's financial loss, our food resources needed to win the war will be diminished.

Will you do your part? It is simple enough. Just eat more potatoes than you have been eating, and eat less bread. If you are holding potatoes, commence to market them—gradually and in a way to protect your own interests, but with sufficient rapidity to insure your stock being consumed before the new crop begins to move next June.

The use of potatoes in bread making is urged. We offer this suggestion and ask the housewives to try it.

A recipe that will aid in potato consumption and save in the use of wheat is this for yeast potato bread.

½ cup liquid (milk and water).

1 tablespoon salt.

4 cups mashed potatoes.

1 cake yeast, compressed or dried, softened in ¼ cup water.

8 cups flour.

Directions for making yeast potato bread using compressed yeast: Combine liquid, salt, potatoes, and compressed yeast softened in ¼ cup warm water. Mix into a dough with about 6 cups of the flour and knead. Let rise until double original bulk. Knead and add remainder of the flour. When again double in bulk, bake about one hour.

Directions for making yeast potato bread using dried yeast: Make a sponge at night of 1 cake of dried yeast, ¾ cup water, and 1½ cups white flour. Cover and let stand in a warm place over night. In the morning combine salt and potatoes with the sponge, and mix into dough with about 4½ cups of the flour and knead. Let rise until double original bulk. Knead and add remainder of the flour (2 cups). When again double in bulk, bake about 1 hour.

Note:—A half pint measuring cup is used and all measurements are leveled. The flour is measured after sifting.

Soil Preparation for Beet Land

By Mark Austin.

We are very glad to know that the farmers throughout Utah, Idaho and Washington are signing beet contracts and preparing for a large acreage of beets. The indications are that the acreage will be much larger this year than last, stimulated no doubt by the good price being paid for beets, the great need for sugar, and the fact that the farmers have demonstrated that beet top silage and the by-products of an acre of beets will produce more meat than an acre of alfalfa hay.

We want to congratulate the farmers for getting most of their land fall plowed, possibly more than ever before. So that the farmers may get the benefit of this important work, would like to urge upon them to get their harrows and levellers in shape at once, so that as soon as the weather and soil conditions are right(before it gets too dry) they can harrow and level their land and make a fine, dust mulch on top so the moisture will be retained near the surface to bring up the seed after planting. It would be a great shame and loss if the land were allowed to get too dry before it is worked. Where the soil dries unevenly, it will be found profitable to work the land in small patches as fast as it gets dry enough, because if the work is left until the whole field gets dry enough to work, possibly some parts will become too dry. My opinion is there is nothing as important in beet growing as that of being careful to see that the moisture does not escape from the soil.

There is no reason why the farmers should not get a good stand of beets on every acre of land, if the proper care is taken in regard to its preparation. I think there is more money lost by the farmers by carelessness in the working of their soil, in the spring, thereby, in losing the moisture, than any other one thing.

The soil throughout Utah and Idaho this year is in excellent condition for moisture; if it is too early to plant, and the soil is worked down to a perfect seed bed as fast as dry enough, it will hold the moisture, until the time of planting arrives, in most cases. Of course, if the planting is not done the weeds get sprouted, the soil could be re-worked to kill the weeds before it is planted. The soil is not likely to be over-worked, but very often is not worked enough. The report is that we have an abundance of snow in the mountains and the prospects for water are very good. We may have an early spring so that we can start to work early, therefore we should prepare at once and have everything in readiness so there will not be a minute lost when the time comes to go to work. Many of our farmers neglect their tools and do not get them in shape until they get ready to use them, then several days are lost besides a great deal of money.

Want to emphasize again, where the farmers have land that is to be spring plowed, the advisability of harrowing and leveling it, just as soon as it is dry enough. It will plow better, and the fine, damp soil will go to the bottom of the furrow; the seed bed will be better prepared and the crop will grow better, because the roots of the beets can work better in fine soil than in cloddy soil and it will hold the moisture much longer both before and after plowing, if the harrowing and leveling is done, just as soon as it is dry enough. This is one of the most important things in connection with farming and should be followed by every farmer. You can generally harrow and level the ground if you get ready, before it is dry enough to plow; of course, you would not want to go in on the land when it is wet. Great care should be exercised in regard to that matter. Land spring plowed should be harrowed and levelled as fast as plowed, and a good seed bed made at once while the land is damp, before it gets too dry, otherwise a poor stand of beets will be the result.

Early preparation of seed bed means early planting, early planting, nine times out of ten when other conditions are equal, means larger tonnage. Early planting means earlier maturing and earlier maturing means earlier harvesting. Earlier planting means earlier thinning, when this work can be done early it is very important because it can be done before other work becomes pressing, such as haying.

There is an advantage to those who can get ready early to thin their beets, because there is always plenty of labor for the early work.

Sincerely hope the farmers will have a bumper beet crop this year, because we had a rather light crop last year and generally a heavy crop follows a light one; this has been our experience in the past, especially when we have had such a splendid winter.

Everybody Use Potatoes

By Dr. F. S. Harris, Director Utah Agricultural Experiment Station.

The war has caused a great scarcity in many kinds of food; it has made the price of everything so high that people could hardly afford to live if it were not also expensive to die. Many food producers have been called into the trenches, and many productive acres have been rendered desolate by the ravages of war. These conditions have so completely upset the food supply of the world that deep distress, if not actual famine, has knocked at the doors of many who previously had never known what it was to want.

This is a war in which food takes its place in the battle line with the musket and the cannon in deciding who shall be the victor. Not alone will the "fire superiority" of shot and shell determine the advance of the troops; the "fire superiority" of bread will dictate in tones of an absolute monarch which regiments shall advance and which shall retreat. As a factor, therefore, in winning the war the nation must take every possible step to conserve the food supply.

Wheat, the most indispensable of the foods, is scarce. The world's reserve has gradually decreased during the period of the war, till now a shortage seems inevitable. This condition would be very serious were it not for the fact that the potato crop is exceptionally large. Unlike wheat, potatoes cannot be stored from season

(Continued on page 7)

Save The Seed Corn

Written for the Utah Farmer.
By Wm. Olson.

The fact that an embargo has been placed on seed corn, that none can be shipped from certain states, ought to bring home the fact that good seed corn is scarce.

Eastern conditions are really serious, not near so bad here if we will save what mature seed corn we have.

Seed corn that is grown here, of a known variety, will be the best for us to plant.

The State Council of Defense would like to have any farmer or concern that has any seed report to them so they can help the buyer and seller get together. The best way to do this is to make your report to the County Agent tell him the amount and kind you have and he may be able to get local buyers and sellers together. When some of our farmers awake to the fact that good seed corn is scarce they will find that they have a job on their hand to buy the kind they want.

So much of the corn last year was unmatured, the season was so short. Unless a test is made before planting you may only get a partial crop. By all means get busy at once and test your seed corn.

Make Preliminary Seed Corn Test.

A seed corn test will detect poor seed. A simple preliminary test should be made first. Take two hundred ears at random and remove six or eight kernels from various

(Continued from page 15)

DAIRYING

CARE OF THE SEPARATOR

W. H. Underwood.

All users of cream separators who have not tested their skimmed milk for butterfat recently should make this test at once, for it is probable that they are not getting as much butterfat from their milk as they can and should obtain. Cream separators, like all other kinds of machinery, sometimes get out of adjustment. When the separator is in good working order not more than .02 of one per cent of fat ought to be found in the skimmed milk, but there is no question but that on a great many farms as much as .05 of one per cent of fat is left in the skimmed milk and this means a heavy waste.

If a separator is not skimming as close as it ought to it is well to see whether it is standing level or not. If it is not standing level it must be leveled up. A separator cannot be expected to do good work unless it stands perfectly level. The bowl must be in balance. If it is not in balance clean skimming cannot be obtained. If a level is not at hand one suitable for the purpose can be had by filling a glass vial nearly full with water.

But the main part of the separator may be standing well and still the bowl wobbles. This may be because the internal devices of the bowl have not been put in properly. The side of the bowl or the cover has been dented on one side. It may be that the cover of the bowl has not been screwed up sufficiently tight or a little piece of dirt has lodged on one side so as to make the bowl heavier on one side than on the other. The bowl spindle may be sprung and the bearings gummed up. No one can say just what may be the trouble without examining the machine in detail, but sure it is if the separator does not run smoothly there is something wrong. Besides not skimming the milk clean a separator that does not run smoothly will wear out much sooner than it otherwise would.

If the separator is not doing good work it may be because it is not being turned in accordance with the directions of the manufacturer. If the bowl does not revolve at the speed it should a portion of the butterfat is certain to be left in the skimmed milk. If the machine is being operated by hand it is well to check up occasionally to see whether the handle is being turned the proper number of times per minute.

If all the above mentioned conditions are as they should be and still the machine is not doing good work it will be necessary to look elsewhere for the trouble. Sometimes the cream outlet becomes clogged or partially closed. If this is the case it can readily be seen that less cream will flow through the outlet per minute than if it were larger. The result will be a thicker cream and the chances are that the skimming will be much less perfect than would otherwise be the case. Everyone who uses a separator knows that the percentage of butterfat in the cream can be regulated by turning the cream screw either one way or the other. By enlarging the opening the cream becomes thinner and by reducing it the cream becomes thicker, that is, the cream will contain a larger percentage of butterfat.

Some separators will not skim effectively when the cream contains as much as 40 per cent of butterfat or more, and the only way one can tell whether his machine is one of that kind or not is by testing the skimmed milk. A Babcock testing outfit should be on every dairy farm, but in the absence of this the proper thing to do is to take a sample of the skimmilk to a neighbor who has a tester or to the creamery and have it tested there. If one is not a regular patron of the creamery he may have to pay for the testing, but the cost will be nominal and should not be considered, for it pays well to know exactly whether or not all the butterfat is being gotten out of the milk.

SHIPPING COWS

Suggestions as to Handling Dairy Animals in Transit—Special Care Should Be Used.

The following information as to handling cows in transit was obtained from several prominent shippers, each of whom handles annually from 2,500 to 4,000 head of dairy cows.

1. Do not ship fresh cows long distances unless in express cars under particularly favorable conditions. The expense involved naturally limits such operations to valuable purebred individuals. Time and time again, as a result of being shipped shortly after freshening or so as to calve in transit, fresh cows have been ruined so far as the next lactation has been concerned.

2. Milk cows of grade breeding usually are shipped by freight, and the experienced shipper selects only dry cows and "far-springers" for long shipments. Heifers which have never dropped calves and which are not due to freshen until three or four weeks after arrival at destination make good "buys," as they are of a size and condition which permits of loading the car to capacity. Furthermore, immature animals are less susceptible to injury in transit and to damage as a result of a marked change of environment.

3. If possible, ship only animals without horns. In case horned animals are shipped they should be tied securely or penned off in one end of the car to preclude the possibility of injuring other animals during the trip.

4. Similarly, when bulls are shipped in mixed loads, they should be securely penned apart from the females.

5. Other conditions being equal, it is advisable to load a car to capacity, as the animals travel better where there is a minimum of space in which to move about.

6. So far as possible, the stock should be shipped during cool weather, as cows handled during hot weather are liable to shrink in milk flow during the successive lactation period as a consequence of such a trip.

7. Special precaution must be exercised in shipping cows during cold weather, to avoid exposure which will favor the contraction of pneumonia, usually a fatal disease among mature cattle. At best it takes an animal about a year to become thoroughly acclimated to a warmer or colder climate, and on that account the movement should take place when the temperature of the two points is as nearly similar as possible.

8. Dairy cows should be handled under normal conditions before and during the trip. They should be fed and watered at regular intervals; and if any of the animals are in milk, they should be milked on schedule. It pays to feed ensilage and hay during shipments if the cows are accustomed to these roughages. Simple provisi n for the feeding of these materials can be made by stretching small-mesh hog wire along the side walls and ceiling so as to form a wedg-shaped bunk which can be filled with hay and ensilage in proportion to the appetite of the cattle. Grain is a difficult material to feed in transit in a freight car where where no special provisions are made to prevent wastage as a result of the tendency of the animals to move about when not fastened in place. In long trips grain may be carried in the car and fed at the points where the stock is unloaded.

9. A competent attendant always should accompany the load of dairy cows. He should ride in the car with the stock, as often he can avert injury to an animal in case it gets down.

10. Several large barrels of water as well as plenty of feed should be carried in the car as protection against delay or accident which may detain the train and leave the animals hungry or thirsty for excessive periods.

11. Sand or cinders constitute the best bedding materials, and during long trips fresh supplies of those materials should be placed in the car at unloading points in case they are needed.

12. In view of the high price of dairy cows at the present time it is imperative that every stockman exert all efforts to make for cow comfort in transit and to move the animals with a minimum of loss as a result of carelessness, lack of attenti n, and inexperience in the cow-shipping business.

Every legitimate Utah industry has been aided by this bank, during its 59 years of existence.

Let us discuss YOUR problems.

Walker Brothers Bankers

SALT LAKE CITY

Three Important Reasons For Buying a

NEW DE LAVAL

CREAM SEPARATOR

At Once

THERE are three very strong reasons for the immediate purchase of an up-to-date De Laval Cream Separator.

In the first place, a new De Laval machine will now save its cost in a few months—in more and better cream and butter and in time saving—at the present very high butter prices and great need of every minute of time.

In the second place, the patriotic duty rests upon every producer of butter-fat to save every ounce of it, and nothing is of greater food value to a nation at war. All European countries are encouraging the sale of the best cream separators in every way possible.

In the third place, railway delays are such that you can't depend upon quick delivery, and if you don't order your De Laval now there is no telling when you can get it. Moreover, the supply of labor and material is uncertain and all last year De Laval deliveries were nearly two months behind.

Again, De Laval prices have advanced very little thus for but must go higher if present industrial conditions continue, let alone become more difficult. Present prices hold good until March 1st only.

There was never a time when the immediate purchase of a latest improved De Laval Cream Separator was more important to everyone separating cream, or when it could less wisely be delayed.

See the nearest De Laval agent at once. Arrange to try a new De Laval machine for your own satisfaction. See for yourself just what it will do for you. If you don't know the nearest agent simply address the nearest General Office.

The De Laval Separator Co.

165 Broadway, New York 29 E. Madison St., Chicago

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100 Butter Wrappers	$ .90
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Check or money order must accompany order.

ESSAY ON LIMBURGER CHEESE

Of course, there are different kinds of cheese; some are more distinct than others. Now, the cheese I have reference to is the kind you can find in the dark. There are lots of people who would like to know how this cheese is made. Now, I will tell you: In the first place, you want to hunt up a milkman that has been arrested four or five times for adulaterating his milk; you want to catch him in the evening after he has been out all day in the sun and his milk is good and sour, and he is about to throw it away; then you buy it cheap. You take it out in the country and bury it (that is, if the board of health don't object); then you take it out and beat it good. (Now, the lightning has been known to strike this cheese but the lightning got the worst of it.) Then take it and put it out all night, let the dew fall on it leave it there until the surface becomes good and mouldy; then you have Limburger cheese.—Exchange.

THE NUTRIENTS IN FEEDS

The following table, furnished by the Minnesota Agricultural College, gives the nutritive value of some of the principal feeds.

	Protein	Carbo-hydrates	Fat
Concentrates			
Corn	.079	.667	.043
Barley	.087	.656	.016
Oats	.092	.473	.042
Wheat	.102	.692	.017
Rye	.099	.676	.011
Millett	.089	.450	.032
Kaffir corn	.078	.571	.029
Sorghum	.070	.521	.031
Shorts	.122	.500	.038
Bran	.129	.401	.034
Peas	.168	.518	.007
Corn oil meal	.202	.445	.088
Gluten feed	.233	.507	.027
Oil meal	.293	.327	.070
Gluten meal	.322	.422	.025
Cotton seed meal	.372	.169	.122
Roughage—Green			
Fodder corn	.010	.116	.004
Sorghum	.006	.122	.004
Oats	.026	.180	.010
Timothy	.012	.191	.006
Red top	021	.212	.006
Clover	.020	.148	.007
Alsike	.027	.121	.006
Alfalfa	.039	.127	.005
Cow pea	.018	.187	.002
Soy bean	.031	.110	.005
Barley	.019	.102	.004
Silage			
Corn	.009	.113	.007
Sorghum	.006	.140	.002
Cow pea	.015	.006	.009
Clover	.020	.135	.010
Soy bean	.027	.087	.013
Alfalfa	.030	.085	.019
Straw			
Wheat	.004	.363	.004
Oats	.012	.380	.008
Barley	.007	.412	.006
Roughage—Cured			
Fodder corn	.025	.346	.012
Stover	.017	.328	.007
Sorghum	.024	.321	.016
Timothy	.028	.434	.014
Prairie hay	.029	.415	.012
Red top	.048	.469	.010
Oat hay	.043	.464	.015
Millet	.032	.485	.010
Marsh hay	.024	.299	.009
Soy bean	.109	.401	.015
Cow pea	.107	.382	.012
Clover	.068	.358	.017
Alsike	.084	.425	.015
Alfalfa	.110	.396	.012
Miscellaneous			
Potato	.009	.163	.001
Sugar beet	.011	.103	.001
Mangel	.011	.054	.001
Turnip	.010	.072	.002
Rutabaga	.010	.081	.002
Cabbage	.015	.008	.003
Pumpkin	.010	.058	.003
Rape	.015	.081	.002
Beet pulp	.006	.073	.000

Keep your pigs growing. They should weigh 200 pounds at six months of age and they are worth $20 a hundred now. Ten good pigs are worth $40.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate, A simple, strong, durable machine. Write for CATALOG, price, etc.

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IRON AGE
GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 50 combinations, $4.50 to $36.00. Write for booklet.

Bateman M'f'g Co., Box 830 Grenloch, N.J.

Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

WHY COW TESTING ASSOCIATIONS MAKE FOR LARGER DAIRY PROFITS

By F. W. Merrill.

If I were to name the factors that are contributing to profitable dairy development I would say that the cow testing association is the leading one. It is the one factor that puts dairy production upon a business basis. It is the one means by which a dairyman may know whether he is in the business for pleasure or for profit. Wherever cow testing associations are formed, an element of permanency is given to the dairy industry; better systems of feeding dairy cows prevail; better bred sires are invariably purchased. The men who are members and receive of these influences become better farmers, better producers, and better "all round" citizens.

A cow testing association is merely an organization of men who own and milk cows(organized for the purpose of determining profits and losses, and to determine ways and means of improving their industry.

The association generally requires a membership of twenty-five to thirty cow owners.

The number of cows owned by each man is not so important, as the rules provide that the official tester shall spend one day each month with each and every member, and he can test a large herd as well as a small one.

The business of the official tester is to keep an accurate account of every cow listed in the association. To secure this data the members are required to weigh the milk of each cow every day, and to take samples whenever required. The tester then tests the sample and determines the amount of milk and butter-fat produced, and the profit or loss of each cow for the month. He advises on the kind of food to be used and regulates the amount according to the manner in which the cow uses it.

Cost Small Compared with Benefits.

The cost of an association cannot be compared with its value to its members. Yet in round numbers it amount to from $2 to $3 per cow per year. Practically the only cost is in the salary of the tester, and this is usually quite low for the reason that young men take hold of the work merely to gain experience.

I hope the time is not far distant when the importance of an official cow tester will be appreciated more, and that attractive salaries will be paid and that more efficient, better equipped men will take hold of the work.

What One Western Association Has Accomplished.

A review of what has been accomplished by a cow testing association in a far western state will probably be of interest and lend encouragement to other communities where an association might be formed.

The Richmond-Lewiston Utah Cow Testing Association was formed in 1911. The first year 495 cows produced an average of 254 lbs. of butter-fat, which is 90 lbs. of butter-fat higher than the average for the county.

There are two reasons for this high yield above the average.

As it always the case the best dairymen entered the association and consequently the best cows were enrolled.

The second reason is that before the first year was completed 100 cows were found to be unprofitable and were discarded.

The average income per cow was $83.80. The cost of feed was $38.51, giving a profit of $45.29 per cow. This one lesson must have been a revelation to the dairymen of Utah, for the average production of the cows in the state is only 140 lbs. per cow.

The members soon discovered that forty-eight of the best cows would make as much money as 189 of the poorer ones, or one good cow would make as much money as four poor ones, yet it costs as much to keep a poor cow as it does a good one.

They learned another valuable lesson, too, and one that is adaptable to all of the Western country, namely, that "dairy bred cows show a decided tendency toward a longer lactation period than scrub cows."

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Famous Suction-Feed
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Over a million Sharples users in every dairying country of the world. Write for catalog to Department 104

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Bell rings when below speed.
Easiest to turn—Easiest to wash.
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Most Perfect Skimmer

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"U. S. Light Bright—white 'Just Right'."

Daylight all time in home. Will wash, churn, fan, toast, supply elecrric flat iron, save hundreds of steps, provide water all over house. Operating cost low. A comfort and a joy.

GREATEST THING OUT FOR THE FARM ASK FOR FULL PARTICULARS

VERMONT MACHINE CO.
Factory at Bellows Falls, Vt.
Salt Lake City, Utah. Box 964.
Franch Offices—Portland, Oregon; Oakland California; Chicago, Ill.

You can tell a body of dairymen that one benefit of dairy breeding is that the time of giving milk is lengthened and a consequent larger amount of milk and butter-fat, but too many of them are "from Missouri." The test association will convince the most skeptical.

Right here is the most convincing argument for an association, for such an organization invariably leads to dairy breeding, the selling of the scrub and the dual purpose cow and the adoption of a system of breeding which leads to profit.

Very often the question is asked, How long should a cow rest between lactation periods? This association proved conclusively that one month was not long enough, but that nothing was gained with a rest of two months or more.

"Cows which freshened in the fall produced on the average 45.1 lb. more fat and returned $9.43 more profit above cost of feed during the next twelve months than cows freshening in the spring. The cost of feed was only $5.33 more per head for the cows freshening in the fall."

This one association taught this truth, that if the same improvement made with one herd during two years could be made with all the cows in the state, it would mean an annual increase of $1,251,000 over the present value of the state's butter-fat.

If all the cows of the state could be brought up to the standard of production of the Richmond-Lewiston Cow Testing Association it would raise the value of the state's butter-fat $3,000,000.

This being true can anyone explain why cow testing associations are not formed all over the state? And yet this is true of every state in the Union where dairying is practiced.

If any of our big corporations could see an opportunity to increase the profits of their business with as little cost to the business as the cow testing association involves, they would jump at the opportunity.

The whole trouble lies in the fact that we have not learned the "business of dairying." We theorize and speculate, advise and exhort, preach and propound, but we don't get down to bed-rock principles of efficient business management in dairy production.

The cow testing association is paving the way. It is the cross-road sign pointing to better dairying.

From the mistakes of others a wise man corrects his own.

He who only hopes is hopeless.—Exchange.

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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

What did we talk and write about before the war began?

There is no money to be made, by under feeding or skimping the livestock.

The labor problem will be partly solved by the organization by the government, of all the boys between 16 to 21.

Now is a good time to sharpen the plows and put other machinery, to be used in the spring, in the best possible condition.

Another Liberty Loan is coming, also another Red Cross fund will be solicited. If the war continues we will be called upon to give until it hurts.

The suggestions offered by the U. S. Food Administration are not foolish, they are just plain common sense, and it is our patriotic duty to observe them.

Inspection and Repair week will begin March 4th. Why not look over your tools, implements and machinery and order your repair parts. Some farmers who are not in touch with the manufacturing conditions do not seem to realize the need of attending to this work now. It can not be put off and get results.

We were shown a modern catalogue this week, that is being send out by one of our implement concerns. The book contains so much information and presented in such a way that the book is well worth reading for what one can learn from it. We sometimes wonder why farmers do not read more, why they do not answer the advertisements and secure these modern books. Keep in touch with modern implement machinery and all other tools by sending for one of the modern catalogues.

WILL WE GET $2.50 FOR WHEAT

A law has been introduced into congress making a price of $2.50 for wheat, this will increase the price from 2.00 as now fixed by law.

Shortage of winter wheat and a desire to stimulate production is reasons given for the proposed increase.

The most important part of the new proposed law as it will concern Utah, is that the price will be at local markets, rather than at primary markets, as is now in effect.

LICENSES REVOKED

The Federal Food Administration have already revoked and in some cases fined those who have been unfair in the conduct of their business. This is true of business houses, produce men and others.

This should act as a warning to some. Complaints are being made about unfair practices and inspectors are going to check them up. The only way to play the game is to be fair and the man who will not, ought to loose his license and not be permitted to do business of any kind.

PLENTY OF SNOW

According to J. Cecil Alter, of the U. S. weather bureau, there is a good supply of snow in the mountains. Up to December 31st there was a shortage as compared to the year previous.

During January a great deal of snow fell. Here is the average fall of snow at the various watersheds. Great Salt Lake, 19.99 inches at valley stations, 54.3 inches in mountains. Same month last year, 23.5 at valley stations and 54.3 in mountains. Sevier lake, 5.3 at stations, 36.4 in mountains. Same month last year, 12.6 at stations, 35.5 in mountains. Green and Colorado rivers, 8.8 inches at stations, 12.7 in mountains. Same month last year, 20.5 at stations and 34.2 in the mountains.

GOOD SEEDS WILL HELP

We are asked to increase production, good pure seed will help.

Even the most fertile soil, the best seed bed and the most careful cultivation will produce less unless pure, live seeds are planted. It is safe to say that with the same acreage and with the same cultural methods, and with the same care in harvesting, the yields of our crops can be increased 10 per cent to 15 per cent by simply giving unusual attention to the use of pure, clean, sound and vigorous seed. Poor seed is often the only cause of crop failure.

Good seed costs more and is worth more. It will always pay to buy the best.

Clean your seed well before planting. This year more than ever before we should pay more attention to good clean live seed.

INCREASED BEET ACREAGE

Hundreds of farmers are sending in their pledge cards to the State Food Administration for an increase acreage of beets. The price of nine dollars with a split of fifty fifty means that the farmer is going to get a good price for his beets and will answer the call of the government for increased production of sugar with the greatest amount of sugar ever produced in this territory.

The reports so far show an increase of more than 30 per cent over last year.

The farm bureaus are pledged under the agreement with Sugar Companies to have their officers help make the canvass and do what they can to secure an increase of acreage this year.

It should be encouraging to Government and State officials to see how well the farmers are going to do their part for an increased production of sugar.

SAVE YOUR GOOD COWS

The high price of feed and the shortage of labor, may influence some owners of dairy cows to sell them. We believe it would be a mistake at this time to allow a good cow to be sold for beef making purposes.

The great shortage of dairy cows in Europe is sure to influence the price of our cows as soon as the war is over, for the French are now planning to come over here and buy a great many dairy cows.

Look a few years ahead, farming is a lifelong business. There is a greater demand for dairy products today than ever before. Our soil fertility must be maintained. Look ahead for two or three years and we believe you will see that it is good business on your part to save every good heifer, every good cow. Keep the best sire you can purchase and raise every calf that has the making of a good cow.

ARE YOU READY FOR THE SPRING RUSH

Help is going to be scarce this year and more careful planning will be necessary so that every move and every minute will count.

There should be no lost time, right now, preperations should be made and have every tool and implement sharpened and in good working order so that the moment you can get onto the ground, you are ready to go to work.

Secure your seed now, if you have grown it alright, see that it is cleaned and ready for treatment. Prompt seeding at the right time and when the land is in proper condition, often means a great deal to the amount of the harvest. A longer growing season of a week or two will often make the difference between a profitable crop and one that "just pays."

If you have your machinery and implements in good working order and your seed cleaned and ready for planting you have a good start towards the spring work.

Make use of these winter days and prepare now for the spring rush. We must do more this year, with less help. Every farmer has been called into the service of our country. Let us prepare for the spring work as the soldiers prepare for an offensive "to go over the top."

BEANS A GOOD FOOD.

In a pound of beans there is several times the food value that is found in a pound of beef steak.

Last year a surplus crop of pinto and pink beans were produced, about 50 per cent more than the crop of 1916.

Tests have been made by the U. S. Bureau of Chemistry and they have found that the colored beans, pinto and pink, have a food value that is not only equal but superior in many cases to the white varieties. They can in nearly every case be cooked by the same recipes. These colored beans are just as palatable as the white, it is only a notion we have that white beans are better.

An army officer said that the soldiers were so accustomed to white beans they did not like to make the change. We at home can just as well eat the pinto and pink varieties. If the boys at the front prefer white beans they should have them.

We are not using as many beans as we should for economy and a patriotic point of view. We have a surplus and beans will save both meat and wheat. Use less meat and more beans.

OUR FARMERS CAN BE DEPENDED UPON

In every test so for the farmers have done their part to help win this great war. When the appeal for more sugar came to us, as a beet growing district, a campaign was started for a larger acreage of sugar beets. A few days ago a letter was sent to thousands of farmers asking them to increase their acreage and sign a pledge card and return it to the State Food Administrator giving the number of acres they grew last year and how many they would plant this year.

Hundreds have already answered and the reports shows again that the farmers can be depended upon to do their part. The returns so far shows an increase this year over last of more than 30 per cent.

Every farmer should return his card and tell what he is going to do about beet planting. The government is pledged to help with the labor problem and it will greatly help the officials when they know just what the acreage is going to be.

The representatives of the Farm Bureaus of the State pledged, to the various sugar companies, their support and help in securing an increased acreage, from reports coming to us they are making good.

The farmers, their wives and their children are willing, yes, eager to learn their responsibility and can be depended upon to do their part.

CONSERVE YOUR STOCK

USE PERFECT EAR TAGS

The Perfect Ear Tag is being adopted by stockmen all over the United States, because it is so very light in weight—made of aluminum. It is non-corrosive and non-poisonous. There is liberal space for name and address of owner and number of animal. Attached instantly with one operation. Offers perfect identification. We own the patent and are sole manufacturers.

FOR CATTLE, SHEEP AND HOGS

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SALT LAKE CITY UTAH

SEND FOR FREE SAMPLES

Without obligation to me, please send FREE Samples of PERFECT EAR TAGS and Price List.

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3 miles of sod-grown ditch—3 feet deep—in one day—an **easy** job for

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Write for complete catalog and list of users near you. Postal will do.

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Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

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IT MAKES HENS LAY

POULTRY FOOD

HENS will help win the war. Egg production must be increased. Encourage your hens by feeding this scientific meat food —MOREGG.

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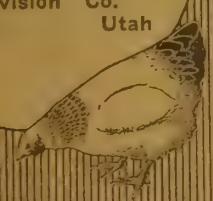


IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $10 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses No Doubles

Bateman M'f'g Co., Box 33 B, Grenloch, N. J.

Utah Implement-Vehicle Co.

Agents, Salt Lake City, Utah.

EVERYBODY USE POTATOES.

(Continued from page 3)

to season; this year's crop must be eaten within the year or it will be wasted. Nor can potatoes be transported great distances, for their high moisture content makes freight rates prohibitive. Since they cannot be shipped in any considerable quantity to our allies in Europe, they must be consumed at home. We must allow them, in part, to take the place of grain in our own diet, and reserve the more concentrated products for the men in the trenches.

Fortunately potatoes may, to a considerable extent, be substituted for wheat. Although they do not contain all the nutritive elements contained in wheat, they are rich in energy-giving starch and may take the place of at least part of the wheat flour in making bread. Indeed, bread containing a high percentage of potatoes if properly made, can scarcely be distinguished from that made from wheat flour. Furthermore in the hands of a skilled cook many palatable and nutritious dishes may be prepared directly from potatoes.

Since potatoes will be plentiful and cheap, since they are too bulky to ship long distances and too perishable to store from year to year, since wheat is scarce and is needed for the men in the trenches, since the success of the nation at arms depends in part on the conservation of food, and since every true American is anxious to demonstrate his patriotism, what citizen can allow to pass this opportunity to serve by giving potatoes a prominent place in his diet?

—o—

WINTER FEEDING

One of the most important things in winter about the poultry plant is a good supply of drinking water at all times. The water must be kept fresh in the drinking vessels every day for best results and on days that are very cold I warm the water up a trifle. In this way the chickens will drink all they require. If the water is ice-cold they will not. Drinking water is essential at all seasons of the year about the poultry plant, but especially is this true during the winter period and if the hens do not drink what they will actually require the egg yield will be greatly diminished.

I have found careful, uniform feeding pays. Eggs have been unusually scarce this season and only the experienced feeder seems to be getting eggs from his flock. Too much feed will not produce eggs, neither will too little, but a uniform ration fed regularly and changed about somewhat will surely produce results. During the early fall I procure a good poultry tonic. Many of them have been advertised in our farm papers from time to time. In feeding a tonic I always mix a little in the evening mash, feeding it every other day for a week, then in a month I repeat again. This will not only produce eggs but will keep the flock in a good healthy condition at all times and of course this is absolutely essential to profitable egg production.

During the winter the morning feed consists of four quarts cracked corn scattered all around in the litter. This amount is for 100 fowls. The noon-day meal consists of one quart corn and two quarts oats scattered as before. The evening meal consists of a mash made from corn, oats, bran, a small amount of beef scraps and occasionally a little oil meal. Sometimes this mash is cooked for a change. Another thing of importance is to have plenty of grit, oyster shell, cracked bone, charcoal, etc., before the chickens at all times. If these little things are carefully watched the chickens will not only be healthy but the egg production will be normal at all times.

H. W. SWOPE.

—o—

Give your hogs all the alfalfa or clover they will eat, winter and summer. Give them skim-milk, sweet whey, some grain or anything else you have; but be sure to give them all they can eat.—Exchange.

LOUDEN Litter Carrier

ROLLS UP PROFITS EVERY DAY

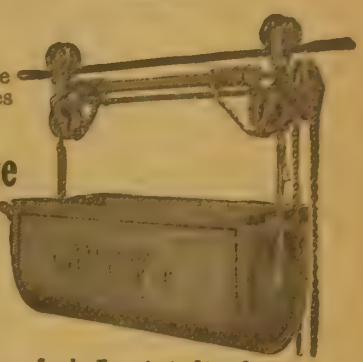
Saves half the time.

Cuts out back-breaking labor.

Makes the daily task of barn cleaning less disagreeable.

Saves the full value of wet manure and increases the fertility of your farm.

The man or boy doesn't shirk the job—keeps the barn more sanitary, the cows healthy, increases the quantity and quality of the milk yield.



Louden Emancipator Litter Carrier.

Good as New After Four Years Use

H. J. Slotten, owner of Walhala Stock Farm, Somers, Iowa, writes: "The Litter Carrier has been in daily use for four years and has not given us a bit of trouble—is as good today as when I bought it. It is surely a labor saver; can clean the barn in half the time and get the manure away from the building with little labor."

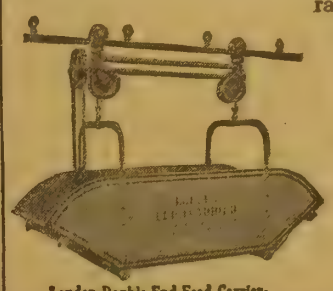
Louden Feed and Litter Carriers

Have wide roller-bearing trolleys, powerful lifting device—no hit-or-miss ratchets. A 10 or 12 year old boy can operate them easily and safely.

Built in various styles to suit every barn; tracks arranged to meet your special needs.

Cost of equipment is a trifle compared to the enormous saving effected by it.

A postal will bring you our big illustrated Barn Equipment Catalog—write for it.



Louden Double End Feed Carrier.

MILLER-CAHOON CO.

Murray, Utah—Idaho Falls, Idaho

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SALT LAKE CITY, UTAH.

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SALT LAKE CITY, UTAH.

HOME

INSTEAD OF MEAT

CHEESE BEANS
MILK PEAS
EGGS NUTS CEREALS

These make appetizing dishes to take the place of meat. Why not use them oftener? There are plenty of good ways of cooking them.

They give you a body-building material, the potein, and they give a lot of it.

The child to grow must have food that furnishes this kind of material. You need it too. Even if you are grown up, you must have it to renew parts of your body used by work and exercise.

Don't think you have to eat meat to get this protein. These other foods have it, too. Take cottage cheese, for example. It is richer in this material than meat. You can eat a third of a cup of it with pleasure, and this third of a cup will give you as much of the protein as a quarter of a pound of sirloin steak—a good, generous serving. Or if you like baked beans, eat a cupful to give you the same amount of protein.

Peas, Beans, Peanuts, Cereals

These are cheaper than meats and good. They should be used, but eat some milk or cheese besides.

Kidney Bean Stew.

1½ cups dried kidney or other beans, 2 cups canned tomatoes, ½ cup rice, 2 tablespoons flour, 1 onion, 1 tablespoon salt.

Wash the beans, put in covered kettle, and soak over night in two quarts of cold water. Cook the beans slowly in the water in which they soaked. If necessary, add more water to cover and combine the cooking until they are nearly tender, usually about two hours. Wash the rice, cut up the onion and add with the tomatoes to the beans. Cook until rice is tender—about 30 minutes. Mix the flour with a little cold water and stir in carefully to thicken. A small piece of salt pork cut up in cubes and added to the beans at the beginning of the cooking gives a pleasant flavor to the dish.

This stew will make a whole meal in itself, with bread and butter and fruit for dessert, to serve five or six people.

Pea Souffle.

4 tablespoons flour, 4 tablespoons fat, 1 cup skim milk, 1 cup mashed cooked peas (any kind), 3 eggs, 1 teaspoon salt, ¼ teaspoon pepper, few drops of onion juice.

Make a white sauce from flour, fat and milk, as in preceding recipe. Mash the cooked peas to a pulp. Beat white and yolks of eggs separately. Mix vegetable pulp, seasonings, sauce and well-beaten yolks. Fold in stiffly-beaten whites, put in greased baking dish and bake in slow oven until firm. Lima beans, split peas, cowpeas, or fresh or canned green peas may be used.

Cheese, Milk, Eggs, Meat

These give body-building material in a little better form than the plant foods do.

Creamed Peanuts and Rice.

1 cup rice (uncooked), 2 cups chopped peanuts, ½ teaspoon paprika, 2 teaspoons salt.

White Sauce.

3 tablespoons flour, 3 tablespoons fat, 3 cups milk (whole or skim).

Boil rice. Make white sauce by mixing with milk. Stir over fire until it thickens. Mix rice, peanuts and seasoning with sauce, place in greased baking dish and bake for 20 minutes.

Calcutta Rice.

2 cups rice, 2 cups tomatoes, ½ pound cheese, 1 tablespoon salt, peppers and celery or onions may be added, if desired.

Boil rice. Mix it with tomatoes, grated cheese and seasonings, and pour into baking dish. Bake half an hour. If peppers or celery are used, cut up and boil with the rice.

All of these four dishes except the pea souffle have as much building material, protein, as a pound and a quarter of solid meat. The pea souffle furnishes only about half as much protein, but is very good instead of meat at a lighter meal.

Cheese Is a Fine Meat-Saver.

There is a great deal of food in a little piece of it. Don't eat it at the end of a meal when you have already had enough. You would not eat a piece of meat then. An inch cube of American cheese contains a third more protein than the same sized piece of lean meat. Cheese is excellent food if eaten at the right time.

Use These Good Meat-Savers

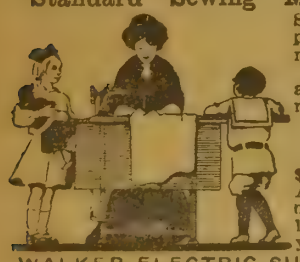
Cottage Cheese is a delicious and easy dish. You can buy it from almost any milkman or you can make it yourself. Add salt and pepper before eating, and if you prefer it more moist, stir in a little milk. It is good, too, served with applebutter, or a bit of jelly. While this is more of a dessert, it can still lessen the amount of meat you eat.

To make cottage cheese warm sour milk, whole or skimmed, on the back of the stove or put a bowl of it in a pan of hot, not boiling, water for about 20 minutes. Stir occasionally. When the curd and whey have separated pour off the whey through a sieve. Work the curd with a spoon and let it drain. When fairly dry work again until smooth. The whey is good to use in making bread.

Nuts are concentrated foods, too. Twenty single peanuts are about the same as the inch cube of cheese. Remember that nuts are good food. Chew them thoroughly or grind them up for a cooked dish and eat them as an important part of your meal.

Save Meat and Money.

Standard Sewing Machines



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Open a Saving or Checing Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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Uncle Sam Must Be Served First

The high development of telephone efficiency in this country gave the United States, when it entered the war, a superiority over all other nations for quick communication.
The nation's capital and the various military headquarters are linked with all the great industrial centers of the country by the long-distance lines of the Bell Telephone System.
Thousands of miles of special telephone wires have been turned over to the government for its exclusive use.
Right of way is given to government telephone calls over all lines.
In its prosecution of the war our government has the effective co-operation of the Bell Telephone System, which reaches 70,000 communities and extends to every military camp in the United States.
One man in every ten from the maintenance and construction forces of this company is now in the telephone signal corps of the army or in some other branch of the military service.
Not only have our men answered their country's call, but the telephone operators are "doing their bit" also. These faithful young women realize the tremendous dependence the nation places on rapid communication in this crisis, and are accepting cheerfully the heavy responsibilities thrust upon them.
In spite of the war and what it has meant to this company in the increased number of telephone messages to handle, the enlistment of so many of our trained employes, the shortage of equipment, and the high cost of telephone materials—
In spite of all these obstacles, we are meeting the needs of the public for telephone service in a remarkably successful way.

The Mountain States Telephone & Telegraph Company

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BECCO
BETTER THAN BEER

For entertaining friends --- for the family --- with meals or between meals---any time! There's no beverage that quite "hits the spot" as does BECCO---the true, pure food beverage.

If your dealer hasn't BECCO---order direct from

G. L. BECKER, Manufacturer, Ogden, Utah

SOME HOOVERISMS

Nut Roast

1 c. rolled peanuts, ½ c. dry bread crubs, 1½ c. milk, 1 c. potatoes, 2 eggs, 2 tb. grated onion, ½ tb. poultry seasoning, 1 ts. salt, ¼ ts. paprika ¼ ts. pepper.

Bean Soup.

1 c. cooked beans, 1½ c. milk, 2 tb. butter, ½ ts. salt, pepper.

Put beans through seive, add milk and seasoning; heat and serve.

Finely chopped onions browned in butter may be added if desired.

Chili

1 qt. Mexican beans cooked 1 day (Cook fast but do not brown). First par boiled in soda 15 minutes. Add 1 lb. ground round steak, 1 qt. strained tomatoes, 1 tb. Chili Powder (chili condiments), 1 tb. sugar, 1 tb. mustard, 1 ts. salt, ¼ ts. pepper.

Cream may be added. Cook 4 hours.

Meat Loaf.

1 lb. round steak, ½ c. bread crumbs or 1 c. mashed potatoes, 2 tb. onion juice, 1½ ts. salt, ½ ts. pepper, 1 ts. sage, 1 c. or more milk.

Grind meat; add other things (make moist as muffins). Bake in loaf pan 30 minutes.

Corn Chowder.

1 can corn, 4 c. potatoes, cut in ¼ in. slices, 1½ in. cu. fat salt pork, 1 slice onions, 4 c. scalded milk, 8 crackers, 3 tb. butter, salt and pepper.

Cut pork in small pieces and fry out; add onion and cook 5 minutes; strain fat into a stew pan. Add potatoes after having par boil 5 minutes, add 2 c. boiling water; cook until potatoes are soft, add corn and milk and heat to boiling point. Season with salt and pepper; add butter and crackers.

Rich Corn Cake.

1 c. corn meal, ½ c. white flour, 1 c. mashed potatoes, 2 tb. sugar, 1 ts. salt, ¾ c. milk, 2 eggs, 3 tb. melted butter.

Scald corn meal with hot milk, cool. Mix and sift dry ingredients, add eggs and potatoes and moisture, beat well. Bake in oiled muffin pans until well done.

Whole Wheat Bread.

2 sieves whole wheat flour, 1 seive white flour, 2 c. mashed potatoes, 1 pt. milk scalded and cooled with 1 c. ice water, 4 tb. molasses or sugar 1 tb. salt, ¼ c. fat or none, 2-3 c. "live yeast."

Mix dry ingredients—add moisture so that mixture is thick drop batter. Beat well with wooden spoon. Leave sides of pan smooth—cover. When double in bulk knead well. Mould. Rise. Bake 1½ hours.

War Time Uses of Different Cereals

Rice—Bread, muffins, hot cakes, fritters, croquettes, moulds, puddings, soups.

Corn Meal—Sausage, meat loaves, steam pudding, breads, bread crumbs, croquettes, fritters, cakes; puddings.

Oat Meal—Soups, gravies, breads, puddings, meats, croquettes, fritters.

Use left-over gravies in soups, vegetables or sauces.

Use left over hot cake batter in instead of raisin bread.

Graham Loaf.

1 c. sour milk, ¼ c. molasses, ¼ c. sugar, 2 tb. melted fat, 1 ts. salt, ½ c. flour, 1 c. graham, 1 ts. soda, 1 c. dates or raisins (chopped).

Sift dry ingredients. Add moisture and fruit. Beat well. Put in oiled pan. Let stand 15 minutes. Bake 1 hour. Nut loaf may be made by using nuts in place of fruit.

Some Corn Hooverisms.

With soaked and cooked dried corn try the following variations:

1. Add 1 c. milk ½ c. bread crumbs, 1 tb. onions or parsley.
2. 1 c. milk beaten egg & 1 tb. parsley.
3. 1 c. ground cooked meat.
4. 1 c. cooked beans.
5. ½ c. chopped celery leaves.
6. 1 c. cooked potato cubes, ½ c. flaked codfish or halibut, 1 c. milk.
7. Bits of crisp bacon or lean ham.

CLOTHING THE LITTLE GIRL

The characters of our children are often affected more than we realize by the clothes they wear, and tasteful and appropriate garments inspire a self respect that is good to see. Plan costumes that are suitable for entertainments, school and church wear, for they should learn early in life that the dress that is entirely proper for one occasion, may not do for another. Clothe the small daughter in the prevailing mode as far as the means will permit. Many a sensitive child has shed bitter tears because her clothes were not like those that others were wearing, and with the present simple styles it would be neither difficult nor expensive to have them up-to-date. Decide upon the most becoming colors, and buy the best material you can afford in these colors. Then choose styles that will enable you to make the changes necessary for the growing child without taking the dress apart. One piece dresses with deep hems are good, for there is no waist line other than that marked by the separate belt, and if the hems and tucks are put in by hand, they can be let out very easily. High wasted dresses with gathered or plaited skirts may be lengthened by putting in a wide belt. The middy blouse and full skirt make a good costume for the school girl; the blouse will need no change for a year or two, and if the skirt becomes too short, attach it to a longer underwaist. The middy may be of the same material as the skirt, or of white galatea.

Garments for the little girls are often made from the contents of the clothes bags if all the suitable materials have been carefully put away. It is surprising what excellent use may be made of the half worn garments if the mother is good at contriving, and can handle her needle skillfully. Many a woolen garment of the mother's has been remodelled into a pretty dress, and the light weight overcoat of the father's, transformed into a pretty coat for a little girl. If you wish to change the color, you can accomplish this very easily by the use of diamond dye. Blue green and deep toned reds and browns are good colors. Anything can be dyed black, and black dresses relieved by bright trimmings are pretty for children. Buy new and stylish patterns every season. They are a great help and a genuine economy. Frequently the only expense for the dress or coat is for the pattern, thread and a package of dye. If the buttons are taken off of the old garments and kept in a button bag until needed, it will mean the saving of a great many dimes during the year.

Shoes are quite an item of expense, and should be carefully looked after to keep them in good condition. Have the shoemaker straighten the heels, put on new soles and mend every break as soon as such work is needed. An occasional application of sweet oil or vaseline will soften the leather and make it wear longer. Good rubbers are a paying investment, for nothing ruins shoes so quickly as to get them wet.—E. J. C.

AGRICULTURAL NEEDS OF UTAH

(Continued from page 1)

he will occupy a very enviable position. The better education of the farmer, the improvements that will result from the application of modern science to agriculture, the advantages resulting from trolley lines, automobiles, telephones, and other conveniences, when added to the natural advantages of farm life will place the farmer on a level that he has never before been able to occupy. The future needs of agriculture in Utah are many, the opportunities are unsurpassed.

The U. S. Food Administration wishes to place the Irish potato every day in the year on every table in America. Potatoes furnish nourishment, bulk, mineral salts and a corrective alkalinity in the diet. They are plentiful this year and reasonably cheap.

THE FIELD PEA

The field pea, sometimes known as the Canadian field pea, deserves even wider use than has been given it.

Since the field pea requires a cool temperature during its growth it is well adapted for spring and summer growth in the northern portion of the United States and in the comparatively high altitudes of the Rocky Mountain region, and for winter growth in the lower South. It is useful on the farm as a rotation crop for hay, grain, silage or green manure, and the peas may be used in the green state as a vegetable like garden peas.

Time of Planting.

The rate of seeding varies with the size of the seed of the different varieties—from 1½ bushels for the smallest to 3½ bushels for the largest when broadcasted. When sowed with oats the proportion of peas to oats should be 2-3 or ½. The field pea is best sown with a grain drill.

Inoculation is necessary for field peas unless they are grown in ground in which bacteria are already present. In mowing the vines, attachments should be used on the mowers which will raise the tangled plants from the ground and prevent clogging the cutter-bar. Peas may be threshed in an ordinary grain separator with most of the teeth removed from the concaves and the speed of the cylinder reduced.

Harvesting for Various Uses.

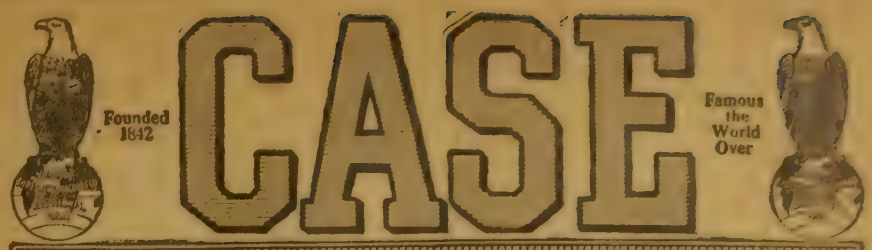
The vines should be cut for seed when the pods are fully mature and the peas firm. For hay they are cut earlier, when most of the pods are well formed. When grown for hay, peas are usually planted with oats or some other grain crop.

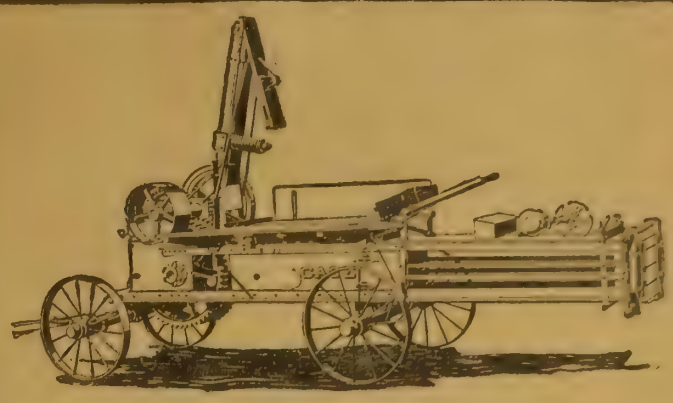
When intended for use in silos, peas usually are planted with bald barley and cut when the latter is ripe. Pea ensilage has a higher feeding value than corn ensilage, but should be fed in connection with a grain ration. It is especially good for dairy cattle but also has given excellent results in fattening beef cattle and sheep. When peas are grown for green manure, a large-vined sort should be selected. The most favorable time for plowing under is when the lower pods are well filled. It should be remembered that the use of a green-manure crop is profitable only in sections where sufficient soil moisture is present to cause the quick decay of the vegetable matter turned under.

Although peas are pastured in some regions, many farmers are discontinuing the practice because they consider it wasteful, and are harvesting all or a part of their crop and feeding it in a feed lot. The use of alfalfa or sweet-clover pasture in connection with the feeding of field peas noticeably increases the rapidity with which animals gain in weight.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.





Extra Strong Weighs Less Big Capacity

EVERY farmer owning a Tractor should also have a Baling Press It extends the use of your Tractor, and makes money where your engine would ordinarily stand idle. You can not only take care of your own hay, which brings more money when baled, but there is always an opportunity to do custom baling for your neighbors.

Case Baling Presses have extraordinary features not found in other machines. Case Balers handle extra large feeds without danger of breakage.

Case belt power Balers are built in two sizes, 14x18 inches and 17x22 inches. The former has a capacity of 3 to 4 tons per hour, and the latter 3½ to 5 tons per hour.

They are constructed entirely of the best steel, the frame extra heavy and hot riveted. This keeps all parts permanently in line, and eliminates an endless amount of trouble found in balers constructed of wood and cast iron.

In addition, we also manufacture a sweep power press for those who do not require the capacity of belt power balers. Write today for our booklet which describes Case Hay Balers in detail, with pictures. A copy will be sent free for the asking.

We also call your attention to the other Case power farming machinery named below, should you wish information regarding Tractors, Threshers, etc.

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Send For This Descriptive Printed Matter. All Free.
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6—Silo Fillers
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Or, if you wish, ask for our General Catalog, describing the entire Case line. It is free.

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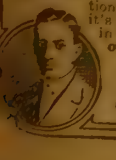
Men Mechanically Inclined, Your Services Are Needed.

NEVER before has the demand for Automobile, Tractor, Truck and Aeroplane motor Mechanics been so great. Your service is needed in the Army, driving and repairing Trucks and Ambulances; in the Aeroplane section repairing motors; on our farms using Tractors; besides, remember that this country has 4,000,000 Automobiles. Thousands of mechanics who formerly took care of them are in the Government service. **Somebody** must take their places. It is up to you to take the places in the garage, etc., of the men that must go. **Realizing** these conditions I have made preparation to train men to fill these important positions. The demand for men is here. I am ready to train them. If you are in the draft come here and **be trained** so that you can give a **special** service to your Country.

WRITE FOR FREE CATALOGUE.

I have written a catalogue that shows pictures of all departments and describes my school. I want you to have it. It will tell you how I teach the Automobile, Tractor business; open your eyes to the opportunities for splendid positions at good money. This Country **must** have trained Mechanics. Take advantage of present conditions, **write for my free catalogue;** it's a trip through the greatest school in the world. Today is the day of oppportunities, grasp them.



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Sweeney Automobile & Tractor School,
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P&O

No. 6 Success Sulky Plow

A frameless plow in which are combined simplicity, strength, durability, service and moderate cost. It has every feature essential to the performance of perfect work. "It's the Way We Build Them."

Made in 10, 12, 14, 16 and 18 inch, right or left hand, and can be equipped with the style of bottoms which will exactly meet the most rigid requirements of any soil. Hundreds of thousands of these popular plows are in use in all parts of the country.

Heavy high carbon steel beams; high throat gives great clearance for trash. In turning, the rear wheel castors automatically, going back to its natural position as the plow resumes a straight course. Hitch adjustable for 2 or 3 horses, and for different depths. Eveners can't drop down on heels of horses. Will plow from 2 to 8 inches deep. Cushion spring absorbs all jolts and vibration when working in rough ground. Conveniently placed levers give easy control of plow. Wheels equipped with dust proof boxes, with sand bands and screw caps for using hard oil. Bottom is built on heavy double ribbed frog. Alfalfa shares interchangeable with regular shares.

Rolling coulter has a chilled cone take-up bearings. Rear wheel adjustable up or down to throw the plow on the point. Heavy axle saddle securely bolted to axle and beam; can't slip. Tongue Attachment and Swinging Hitch Attachment can be furnished.

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is refined especially to meet conditions in the intermountain west. It reaches every moving part of the motor, and lubricates thoroughly. Save your motor and reduce the cost of oil and gasoline by using VICO exclusively.

Utah Oil Refining Co.
Salt Lake City, Utah.

Western Dairy Products Show

Program of the W. D. P. S. to be held at Yakima Washington, February 28 to March 2, 1918.

Febraury 28.

10:00 a. m. Address of Welcome: Mayor of Yakima.

Response: G. E. Frevert, Dairy Mfg. Specialist, U. S. Dept. Agri., Salt Lake City, Utah.

Address: Utilization of Creamery By-products, S. C. Thompson, In Charge, Dairy Mfg. Inv., U. S. Dept. of Agri., Washington, D. C.

Address: The Cheese Industry in the West, G. L. Martin, Prof. of Dairy Husbandry, University of Montana, Bozeman, Montana.

1:30 p. m. Address: Co-operative Marketing of Dairy Products, O. G. Simpson, Mgr. Oregon. Co-operative Dairy Exc., Portland, Oregon.

Address: Production of Clean Milk, F. H. Bothell, Supt. Milk & Cream Dept., Crescent Creamery Co., Los Angeles, Cal.

Address: Butter Standardization and State Brands, Dr. G. L. McKay, Sec. Am. Ass'n. Creamery Butter Manufacturers, Chicago, Ill.

Address: Need of Co-operation Among Dairy Interests of the West, F. M. Foulser, Field Agent Northwest Ice Cream Manufacturers Ass'n., Seattle, Washington.

March 1

8:00 a. m. Butter and Cattle Judging Contests.

1:30 p. m.

Address: Breeding for Higher Herd Efficiency, Dr. C. H. Eckles, Prof. Dairy Husbandry, University of Missouri, Columbia, Mo.

Address: P. M. Brandt, Prof. of Dairy Husbandry, Oregon Agricuutural College, Corvallis, Oregon.

Address: Dairy Farm Management, W. J. Spillman, Dean & Director, Washington State College, Pulman, Washington.

7:00 p.m. Banquet. Toastmaster, Dr. C. L. Roadhouse, Prof. of Dairy Industry, Univ. of Cal., Davis, Cal.

Announcement of Awards and Presentation of Medals.

March 2

10:00 a. m. Address: The Creamerman and his Patrons, J. R. Brown, Mgr. Payette Co-operative Creamery, Payette, Idaho.

Address: "The National Dairy Union," Dr. G. L. McKay, Sec. Am. Ass'n. Creamery Butter Manufacturers, Chicago, Ill.

Reduced railroad rates on the certificate plan have been applied for. Take a receipt for your one-way ticket to Yakima.

—o—

$63,000 WORTH OF GRAIN IS SAVED BY KILLING SPARROWS

With an expenditure of $37.13 for the purhase and scattering of poison wheat, a total of 31,249 bushels of grain, representing a value of $63,000, was saved in Salt Lake county last year from destruction by sparrows, according to a report made to the county commission this morning by Joseph W. Fox, county horticultural inspector.

In his reports Mr. Fox says, that with the trifing sum of $37.13 he had destroyed a total of 250,000 sparrows, or reduced the number of birds in the county from 500,000 to 250,000. He estimated that there are now one and one-half sparrows in the county for each citizen instead of three birds for each citizen, the ratio before he began his campaign of extermination.

Each bird will consume an acreage of four quarts of wheat each year according to reports and the figures were estimated. Had the bird lived this amount of wheat would have been eaten by them. It was estimated that the amount of money saved is sufficient to maintain the county farm bureau for fifteen years.

An appropriation of $40 was asked for the extermination of ground squirrels. The amount was appropriated without comment by the commission.

—o—

There's a Munition Factory In Your Back Yard

'Are you going to run it for "Uncle Sam" or shut it down for the Kaiser;
Being a red blooded American we know what your going to do, and our Seed and Poultry Supply Guide Book will assist you. It is the most instructive Book on Farming and Poultry Raising ever published for free distribution in the Mountain States.
Write for Your Copy Today

PORTER-WALTON CO.
Seed and Nursery Specialists for Western U. S. A.
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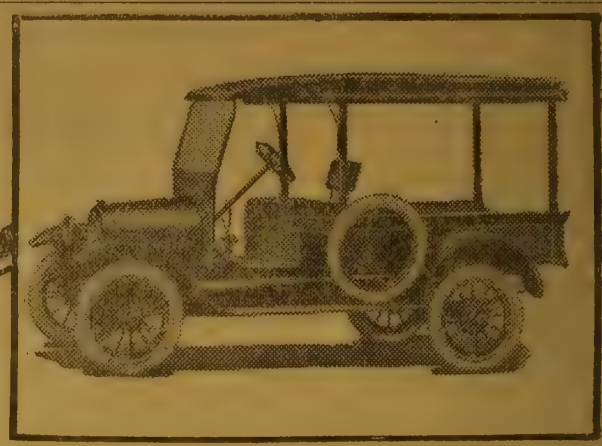

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That is why DEPENDABILITY is emphasized in the Buick Light Delivery Truck. To secure the dependability, the same high standards of scientific workmanship and rigidly tested materials that enter into the construction of Buick passenger cars are also found in this Buick truck.

The Buick valve-in-head motor insures ample power for every emergency and low gasoline consumption.

Stockmen and farmers throughout the west have found this light truck peculiarly adapted to their needs, and a big economizer of time and money.

Rated capacity is 1000 pounds. Price $895 delivered in Salt Lake. Write us for descriptive literature, if you cannot call to see us.

Randall-Dodd Auto Co.
53 WEST 4TH SOUTH SALT LAKE CITY

Hooper, Utah.

Utah Farmer:

Gentlemen—We hear a great deal about Utah wheat being not up to the government standard but little about the best variety, especially for spring planting on irrigated farms. Can you give any information as to the best standard varieties with records of production under such conditions?

Answered by Dr. Geo. Stewart Assistant Agronomist.

The New Zealand wheat is probably the most successful irrigated wheat for Utah. Defiance is also grown to a considerable extent, but it is gradually being replaced by New Zealand. Both of these wheats are white wheats and rather soft as they are grown under irrigation. This, however, is no exception since all wheats soon become soft after irrigation. It is not advisable to plant hard wheat unless the conditions are very extraordinary and those at Hooper I believe are not.

Hardware Tools, etc.
Carrying this brand are

Veribest S P

Veribest TRADE MARK

WARRANTED QUALITY TEST

Secure them from Merchants of your town.

STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.
S.P. 1

Store Some Ice Now

The following suggestions are taken from a bulletin issued by the Department of Agriculture. Because of the unprecedented demands for ammonia by our Army and Navy there may be an ice shortage during the summer of 1918. The thing to do is put away some ice now. Creameries and others who use any amount will do well to put away all the ice possible.

Ice Can Be Cheaply Stored.

Ice storage does not involve great expense. All that is needed is a running stream, an ice house and a few tools. Including hauling, packing and interest on the investment in the building it should be done for a dollar a ton.

Source of the Crop

In the northern part of the United States any lake or river will do; even a creek or a spring can be made to serve by building a dam. If you haven't a stream and have a good water supply it will pay you to bank up an artificial pond with earth or snow, filling to the depth of a few inches a day after a water bottom at least a foot deep is established. After each night's freezing add a few more inches of water.

Water Must Be Clean.

Be sure that the water is clean, free from vegetable matter, and is healthful. Nothing can save water that is polluted, but green algae may be cleaned out by trailing in the water a bag filled with copper sulphate crystals at the ratio of one pound to 100.000 gallons of water.

Good Ice At Low Cost.

You want to get good ice at low cost. For this reason you should follow a systematic method of harvesting and packing. Of course you can store your ice in an old shed, in a cellar or on the bare ground by covering it with layers of sawdust. But the loss under this system is very heavy. You want to employ methods that will keep your ice the longest time at least expense.

Harvesting The Crop.

Ice should be cut in regular sizes if possible. In the south where the ice does not get much more than four inches thick it may be difficult to cut into regular shapes. Make the ice cakes as regular in shape as you can and in packing fill up all spaces with broken ice or snow. In the northern states where ice runs from 8 to 16 or more inches the blocks should be of regular dimensions.

Size of Cakes.

The best size for cakes is either 22 by 22 inches, or 22 by 32 inches. There is some advantage in the latter size as it permits overlapping in packing and avoids air spaces. If you have not a slide with power for filling the ice house, 22 by 16 inches is a good size.

Suggestions for Harvesting.

Be sure that all snow is scraped from the icefield, as snow retards freezing. In cutting lay out one lateral line running to the landing or slide. Run another line at right angles to it. Follow these with a saw or with an ice plow with a width gauge. The ice plow should cut a groove 2-3 the thickness of the ice. Break in long strips and float to the ice house. Hoist by mechanical hoist, by horse power, or by hand.

A Slide is Necessary.

For a small house a hoist will serve. The slide should enter the house at the end rather than at the side of the building. It should connect with a canal leading to the pond. It should be three inches wider than the cakes of ice to be cut, should be made of 2x10 inch hardwood plank, with a five inch space for drainage at the center, a walk or runway at the side, and a wire-rope and jack grapple.

Simple Harvesting Tools.

A horse-drawn snow scraper.

A square with sides 12 to 16 feet long for laying out the field.

Hand ice saws; ice tongs; splitting chisels; ice hooks.

An ice plow with guide gauge.

Amount to Store.

The cream of a single cow, say little less than 500 pounds a season, calls for 1,000 pounds of ice. Therefore a 20 cow dairy requires 10 tons of ice to cool the cream. To cool the milk of the dairy would call for 25 to 30 tons of ice.

Figures For Ice Storage.

A cubic foot of solid ice weighs about 57 pounds.

Allowance should be made for 40 to 50 cubic feet for a ton of ice. Therefore a twenty ton house would demand a storage space of 1000 cubic feet. A building 14x14x14 will provide room for a cube of ice 11x11x11, equivalent to about 38 tons. A pond 50x100 feet will cut 75 tons of 8 inch ice.

Packing

Ice should be packed as nearly in a cube as possible. There should be no open spaces in the ice. The bottom of the pack should be sealed against air. Ventilation should be provided at the top.

Ice Houses.

For the present winter build substantial frame houses. Concrete and brick houses are good but it is perhaps too late for them this winter. It is not necessary to use new lumber. Use anything you have. Build in a shady location with a northern exposure near to the ice field. A cheap house can be built of poles. A better one may be framed and insulated.

FEEDING STUFF UNDER LICENSE

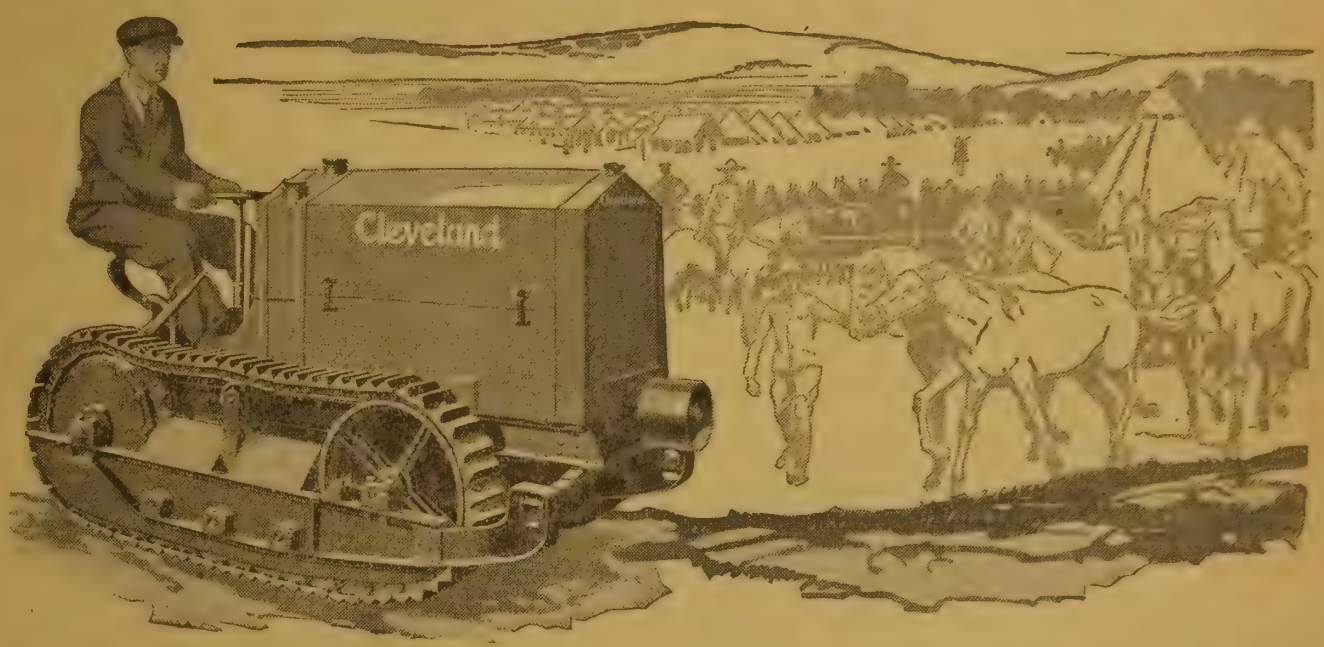
The Food Administration will bring under license on February 15th every person manufacturing or dealing in commercial mixed feeds or other feeds, and also every retail dealer in feeds whose business annually amounts to or exceeds $100,000.00.

This action is taken in the interest of public welfare and especially to maintain a healthy condition in the livestock, dairy and poultry industries. By limiting profits and preventing selfish and wasteful practices, licensing of feeding stuffs will also protect honest dealers against the few who seek to use war conditions as a means of private gain.

"Now, in order to subtract," the teacher explained, "things have always to be of the same denomination. For instance, we couldn't take three apples from four pears, nor six horses from nine dogs."

"Teacher!" shouted a small boy, "you can take four quarts of milk [illegible]"

Quick Plowing and Deep Cultivation Mean Bigger Crops for Uncle Sam and More Profits for You



NOW—more than ever before—you must work quickly and well. Farm and firing line must fight together.

America's acres must yield more than ever before. But the task of stimulating production is hedged about by difficulty.

Munition plants and factories have steadily drained labor from the fields. The new regulations place unskilled farm hands in the first draft class. Over a million horses already have been shipped abroad and the needs of our own army are yet to be filled.

You must replace muscle with machine.

The Cleveland Tractor will plow 3½ miles an hour—8 to 10 acres a day. *That equals the work of three good 3-horse teams and 3 men.*

This same time-saving speed, so profitable in plowing, is of equal advantage in harvesting, mowing, discing, spreading manure and other hauling work.

The Cleveland not only conserves time and labor but it does better, cheaper work.

Traveling on its own tracks, this sturdy little machine will go practically anywhere—even through ditches or gumbo, sand and gravel.

It will not pack the soil, nor mire, slip or flounder.

Cleveland Tractor

It weighs less than 3200 pounds and has 600 square inches of continuous traction surface.

Although small enough for work in orchards and among small fruit trees, the Cleveland develops full 12 h. p. at the drawbar for hauling.

At the pulley belt it gives 20 h. p.—plenty for stationary work such as shelling corn, cutting ensilage, filling silos, pumping, and many other uses on the farm where power is needed.

Rollin H. White, the famous motor truck engineer, designed the Cleveland Tractor. He uses only the best materials. Gears are the same quality as those of the finest trucks and are protected by dirt proof, dust proof cases.

Mr. White has so constructed the Cleveland that *it steers by the power of its engine.*

It will turn in a 12-foot circle. And can be housed in less space than it takes for a horse.

Put yourself in a position to produce the record crops called for by Uncle Sam—and incidentally to make more money for yourself.

Write to us today for complete information on the Cleveland Tractor and the name of the nearest Cleveland dealer. Address Dept. AO or use the coupon.

CLEVELAND TRACTOR CO.
Dept. AO
Cleveland, Ohio
Please send me [illegible] about the Cleveland Tractor
Name _____
City _____
County _____ State _____

THE CLEVELAND TRACTOR COMPANY, Cleveland, Ohio

LIVE STOCK

SNAP SHOTS IN THE FEED LOT

Written for the Utah Farmer by J. C. Wheelon.

What One Ton of Alfalfa Will Do?

This series of short articles on feed lot management are designed by the writer to stimulate an interest in the State Farm Bureau's project of "More and Better Livestock," on the Utah Farm, making no claim that the compounds submitted are above criticism, but rather hoping they may serve as a graphic method of showing how we can keep our livestock in the face of high priced feeds by using the roughage and by-products and selling those that bring in the greatest revenue. In other words, put to the best uses the products for which the other fellow is willing to pay only half what they are worth and sell him the products for which he is willing to pay twice what they are worth, and while the primary object of the State Bureau Project is to quicken the pulse of agriculture by increasing the soil power of our farms, we must not forget that to make this project a success the problems of the feed lot must first be solved.

One ton of alfalfa hay seems like a small thing to talk about, but when we finish our story we must conclude that, viewed from any angle we choose, alfalfa is at once, the greatest carrier of feed values and returns in the manure the greatest amount of fertilizer per ton of any forage or grain crop grown in the intermountain country.

One ton of alfalfa will grow on about a quarter of an acre of our average soils and will provide as much protein as that contained in a whole acre of oats (60 bushels or barley (50 bushels) or three acres of wild hay, and will return in the manure more nitrogen than the entire acre of oats including the straw, than the acre of barley, or an acre of shelled corn, (60 bushels), and while these grains rob an entire acre of ground for the nitrogen they are able to return to the farmer in the manure this little ton of alfalfa from a quarter of an acre of ground, like the hunter, brings in the entire amount of nitrogen from the great reservoir of the atmosphere and in addition makes a deposit in the roots and crowns as a Christmas present to the farmer.

Let us compare this quarter acre of alfalfa with the whole acre of oats (including the straw) in the plant food elements they contain.

	Nitrogen	Phos.	Potash
Alfalfa hay	50 lbs.	8 lbs.	24 pounds per ¼ acre.
Oats and straw	45 lbs.	16 lbs.	11 pounds per whole acre.

When we realize that our valley soils are especially short on nitrogen and phosphoric acid and especially long on potash and lime, and that nitrogen and phosphoric acid therefore becomes the limiting factors in soil power, and that this ¼ acre of alfalfa carries more nitrogen, all of which it supplies from the air, and only half as much of the phosphoric acid which it draws from the soil, as the acre of oats which draws these elements entirely from a soil already too low in them, we get another happy surprise.

Again, if we feed this ¼ acre of hay on an acre of ground devoted to other crops it will return in the manure as much nitrogen as eight tons of sugar beet roots will draw from the acre of soil.

Permitting me to digress here, it should be said that the beet roots draw lightly of nitrogen from the soil, most of it being found in the tops and crowns; for instance, extensive experiments in Germany has shown that to grow a ton of sugar beets there is drawn from the soil about 9.3 pounds of nitrogen, the ton of roots shipped to market carries 3.7 pounds, and if the tops and crowns are plowed under, while green, they return to the soil 5.6 pounds of nitrogen.

Feeding on the Ground

For my own purpose we carry cattle primarily for soil building with the profits on the cattle as a secondary consideration, to do this successfully two things are important. First, the feeding must be done on the field. Second, we must handle the kind of stock that will stand out-door feeding, as the liquids carry half the fertilizer contained in the dung and we want it on the soil without loss.

The feeding is done in tight bottomed mangers four feet wide by 16 feet long, built on light skids and are moved every day.

We expect to manure 50 acres this winter on fall plowed ground. This land grew beets this season, the tops and crowns of which are already plowed in and sealed up so the cattle cannot get them.

We hope to be able to feed 90 days on the ground for which we have provided 155 tons of feed. Only 40 tons of this is alfalfa hay, the balance being wild hay, (wheat straw, oat straw and beet syrup.

This will furnish an average of about three tons of raw feeds per acre. To the man who is in the habit of spreading ten tons of manure to the acre this seems too small to talk about, but if we can recover 90 per cent of the fertilizing values contained in these feeds we will supply to each acre, 76 pounds of nitrogen; 19 pounds of phosphoric acid and 60 pounds of potash and which at the market prices of these goods (even if we could obtain them at all) would amount to $19.00 per acre and most of it produced from roughage that is generally considered of little market value, then the beet tops which have just been plowed in will contribute almost exactly the same quantity of these elements in addition to the above.

I learn from investigations that have been made by Dr. Hilgard and others that hundreds of analyses show that our arid and semi-arid soils are short about 1,000 pounds of nitrogen per acre in the surface one foot in depth compared with the soils in the Mississippi and Ohio Vallies.

I realize that I have a long ways to go and must work my nitrogen factory overtime.

Our purpose is to grow sugar beets three years on this land plowing under the tops and feeding on the ground each winter as described above, then setting it back to alfalfa and turn the hunter loose, capture the nitrogen from the air in the alfalfa, transfer it to a part of the farm that is to produce a soil-robbing crop via—the livestock route.

CARE OF BROOD SOWS

Exercise and Proper Feeding Necessary to Produce Strong and Vigorous Litters.

The sows that will farrow in March and up to the middle of April have already been bred. If these sows produce good, strong, vigorous litters and get these pigs through successfully to weaning time they must be properly cared for from now until the day of farrowing. One of the biggest hindrances to the sows' farrowing good, strong, vigorous litters is lack of exercise. During the cold and snowy weather hogs like to lie around the sleeping quarters and be comfortable. That, however, is just what they should not do all the time, advise the specialists of the United States Department of Agriculture.

Exercise Necessary.

The proper exercise for a brood sow is that which she will take voluntarily and not through force. They should get their corn ration by hustling for it in the stalk fields and not by getting it fed around the sleeping

BOYS AND GIRLS

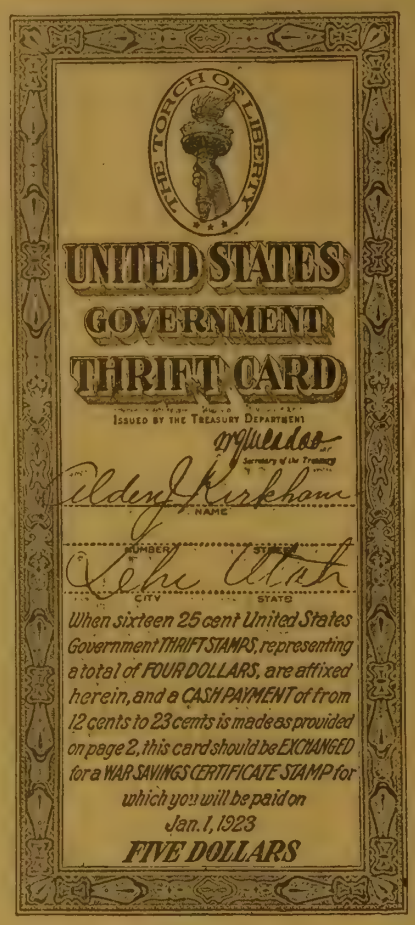
HERE IS THE WAY YOU

Can Earn Thrift Stamps

Parents should encourage their boys and girls to earn one of the war saving certificates.

We want to help every boy and girl to own one of these thrift cards. We will tell you how it can be done.

Uncle Sam says that if we are going to win this war we must all earn money, and save it, and loan it to the government. There are thousands and thousands of people, especially children, who can hardly afford to buy liberty bonds; so Uncle Sam has figured out a means by which everyone can loan a little money to the government. This is how:



This is one of the U. S. Government Thrift Cards.

"Thrift Stamps" of the value of twenty-five cents each will be issued. When 16 of these stamps have been attached to a card they can be exchanged for a War Saving Certificate by adding thirteen cents any time during February. These certificates will be redeemed for $5.00 on the 1st of January 1923.

Uncle Sam desires that every boy and every girl in the land shall own one or more of these $5.00 war-saving certificates. And he wants every boy and every girl to earn the money with which to buy these certificates. Every boy and every girl who does this will be rendering a patriotic service.

Every boy and girl can earn one of these war saving certificates and here is the plan. For every new subscriber at the rate of $1.00, you will send into our office we will send you one of these thrift stamps, if you will send in 16 new subscribers (16 dollars) we will send you a war saving certificate.

The plan is simple. For each new subscriber at one dollar that you send us we will send you a thrift stamp valued at twenty-five cents. The Utah Farmer is well known and it will be easy for you to secure subscribers.

Start today—right now. Take this copy of The Utah Farmer, show this offer to some neighbor or other friend and ask him to give you his subscription. Then fill out the attached coupon and send it to us. As soon as we receive it we will send you a United States Government Thrift Card (with your name on the cover) and one twenty-five-cent stamp for every dollar you send me on subscriptions. When you have sixteen stamps on your thrift card you will then be given a $5.00 war saving certificate.

Who'll be the first to earn one?

THE UTAH FARMER,
Lehi, Utah.

I enclose $..... to pay for the new subscription of

Name: .....

Postoffice .....

State .....

Other names can be put on sheet of paper.

Send the United States Government Thrift Card and Stamps to:

Name: ..... Age: .....

Postoffice .....

State .....

quarters, on feeding floors, or in troughs. Feed them ear corn during the winter months and scatter it out in the stalk fields. The manure spreader is a good implement to use in scattering this corn. Don't be afraid it will be wasted, for it won't. You can readily regulate the amount fed so that it will be picked up clean, and you will find next spring that there is not a bit of the corn lying around to go to waste.

Add Protein to Corn Ration.

Protein feeds in the form of shorts, tankage, oil meal, or alfalfa hay should be supplied. Self-feeders can be used for these feeds, and it is quite successful to grind the alfalfa hay. Sows will eat a larger percentage of alfalfa hay fed in the ground form than when fed in racks unground. This alfalfa is generally cheaper on the corn-belt farms than any of the other protein feeds and is a good balance to the corn ration.

By following a few of these simple methods the sows will be brought to farrowing time capable of producing good strong pigs. Every hog grower knows that if he is going to have pigs that do their best from the start they must necessarily be strong and vigorous at farrowing time. The proper care of the brood sow is not difficult and should be carefully looked after by every hog grower.

LIVESTOCK INDUSTRY IN JAPAN

The Japanese government sent a delegate to the Livestock and Wool Growers Conventions. Dr. Issa Tanimura is a graduate of our American schools and has made previous trips to the United States in the interest of livestock.

Japan has been facing for some years the problem of a totally inadequate wool supply and an equally inadequate mutton supply. There are today only 2700 head of sheep in all Japan, while the requirements for an adequate wool supply for governmental and general use would necessitate at least 10,000,000 head of woolproducing sheep. The importation of wool cost Japan in the past year over $24,000,000, and most of this wool come from Australia, in which country an embargo has been put on further wool exportation.

Japan is facing a wool famine at the present time. For this reason Dr. Tanimura is studying the technical features of sheep raising in this country, to solve the problem that has confronted Japan for over fifty years.

But up to the present time no one has ever met with any success raising sheep in the Orient.

The department of argiculture of Japan has about 800 head of sheep and is raising them solely for experimental purposes, with no attention to the loss which is sustained monthly. Japan is the only country in the world where sheep have not been raised successfully, and the condition has aroused the interest of the whole livestock world.

Dr. Tanimura states that he belives he has a solution of the problem, and after years of study in this country will, upon his return, put to the test his theories. The result of his study is contained in the subject of feed, that has been so instrumental in sheep raising in this country. This feedstuff consists of alfalfa, clover, Kentucky blue grass, timothy hay, rye grass and Tesceus. The second has to deal with the class and breed of sheep that are suitable to the different climatic and elementary conditions in various parts of Japan. The third change that must be made in the raising of sheep in all parts of Japan has to do with scientific management of the stock farms, and to this end Dr. Tanimura is working at this time.

Dr. Tanimura was one of the speakers at the convention his address was in part as follows:

"I come with the official message that Japan must have and raise sheep in spite of the great difficulties that may present themselves. The following are the important events which have occurred since my previous visit in 1910:

"1. I have succeeded in propagating nutritious forage crops, such as alfalfa, fences timothy, rye grass blue grass, all kinds of clovers, corn, oats, etc.

"2. The woolen mills of Japan have very materially increased both their capital and their capacity, installing new machinery and improved methods of manufacture. In place of the large importation of tops in the past, they are beginning to make their own tops to a considerable degree.

"3. The people of both sexes are beginning to use large quantities of wool for clothing, more especially for the manufacture of uniforms for the army and navy.

"4. In spite of the large demand for wool in the grease, the placing of the embargo upon Australian exportation by Great Britain as a war measure has caused us to look more than ever to the United States for our supply. This is an added and important reason for my present visit. At the same time I am vitally interested in promoting the growth of sheep in Japan that we may furnish our own supply of wool.

"5. The Japanese are rapidly increasing their consumption of meat as a food. Experiments have proved that they will welcome the addition of mutton to their diet.

Start of Industry.

Though sheep is Japan might be traced back to ancient times, sheep rearing was not practiced until 1817, when several breeds from China were imported. Nevertheless, the real history of sheep in Japan started with D. W. Apjones, who visited Japan from California in 1875.

"Later the imperial stud took some blooded Rambouillets from France and the United States, quite recently they have imported Shropshires and Southdowns from England. In 1909 the department of agriculture started sheep breeding.

"We have a number of woolen mills, some of them quite large, the most important one being that owned and operated by the war department, which is run for the sole purpose of furnishing cloth for the army, not a yard of its production reaching any other lands. This mill will accept any wool offered to it by Japanese farmers, even the smallest quantity from one fleece, this in order to encourage wool production.

We have been importing annually raw wool, during the past few years, to the amount of $15,000,000, and if you add to this tops, mohairs and woolen goods, the sum reaches $20,000,000.

"The Japanese woolen mills, now with ample supply of raw wool, are able to manufacture 12,000,000 pounds of top per annum, enough to meet nine-tenths of the home demand, and are considering the utilization of the left-over material. The price of tops rose suddenly from 50 cents to 90 cents per pound since the Australian embargo went into action.

"Women's wages in Japan are coming up steadily. They now earn $5 to $9 a month and furnish their own food and lodging. The man on a farm generally gets 25 cents to 40 cents a day under the same conditions. The two sexes work together in the field and they sing as they dig, sow and hoe. They start the work with song under the twinkling stars and end the duty with song under the fresh moon.

"There is no question but that China is the greatest wool producing country in the east, the output being something like 35,000,000 pounds for North China alone. The principal market for this wool is Tientsin, but since the Japanese have occupied Tinao the latter is becoming an important wool center. The wool which is produced along the railroad to Tintao is the best that is raised in China. This brand is called "cold wool," of which the shorn is of better quality than that which is pulled.

World Situation.

"Russia has immense areas of available land, with numberless farmers, and still is compelled to import foodstuffs. England has used her maritime power for transportation to and from her territories yet prices of provisions rose in those countries. Austria raised the price of beef 350 per cent since the war broke out, while Germany raised the price of beef 120 per cent and mutton 150 per cent, in addition to the order that one cannot consume more than one-half pound of meat during a week. In time of peace, England has 250,000 soldiers with 31,000,000 head of sheep. France 616,000 with 17,000,000, and Japan 225,000 with only 2700. For the year 1019, Japan will need 50,000,000 pounds of wool, or at least 10,000,000 head of sheep, to furnish the cloth for the nation. Thus Japan must have sheep.

"I understand the German soldiers at the front are now wearing clothes made of 20 per cent wool, 20 per cent cotton and 60 per cent paper; and they are badly in need of mutton, as well as tallow, both of which are so necessary for the welfare of an army.

"It is true in saying that "food will win the war" and more true that "sheep will save the world."

Feed calves their milk, grain and hay regularly and carefully twice a day and give them a drink of water at noon, and care for the other stock in the same way. It means work, but it pays.—Exchange.

Common dollars won't take the place of common sense.

The city youth secured a job with Farmer Jones. The morning after his arrival, promptly at 4 o'clock, the farmer rapped on his door and told him to get up. The youth protested.

"What for?" he asked, rubbing his eyes.

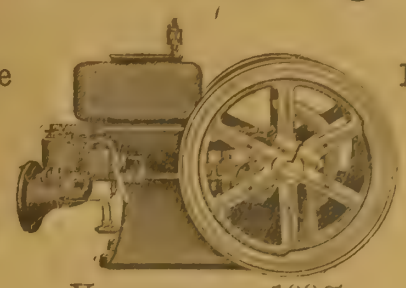
"Why, we're going to cut oats," replied the farmer.

"Are they wild oats," queried the youth, "that you've got to sneak up on 'em in the dark?"

HERCULES ENGINES

With Webster Magneto

Gasoline Cost 30c Gallon



Kerosene Cost 15c Gallon

You can save 100%

Save the difference in cost of Gasoline and Kerosene, **it will pay for your Engine.**

HP	Fuel Consumed full rated H. P. load 10 hours	Operation cost per day on Gasoline	Operation cost per day on Kerosene	Net saving per hour by using Kerosene	Net saving per day by using Kerosene	Net saving in 200 days by using Kerosene
3	30 pints	1.12½	.56¼	.05½	.56¼	112.50
5	50 pints	1.77½	.93¾	.08 1-3	.93¾	187.50
7	70 pints	2.26½	1.31¼	.13	1.31¼	262.50
9	90 pints	3.37½	1.68¾	.16½	1.68¾	337.50
12	120 pints	4.50	2.25	.22½	2.25	450.00

—BUY A—

Hercules Kerosene Engine

and start saving now.

Call at our nearest branch.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

CUTS COST

WANT TO BUY

Sweet Clover and Alfalfa Seed

Utah-Idaho Sugar Company wishes to purchase 2,000 pounds of good grade tall sweet clover seed, also 5,600 pounds good grade alfalfa seed. Will purchase in smaller quantities if obtainable.

Submit sample and prices to Purchasing Department,

UTAH-IDAHO SUGAR COMPANY
Box 1786
Salt Lake City, Utah.

Use Electricity and Save Coal

So serious is the coal shortage throughout the United States that it has become the patriotic and imperative duty of each indvidual to aid to the utmost in the conservation of commercial fuel.

This can best be done by the use of Electricity, generated solely by water power.

The generating of hydro-electrical energy requires no fuel.

Even the water turning the wheels of the enormous power plants operated by this ompany is not consumed or contaminated, but returns at once and without diminution to its natural channels. During the year—1917—the Utah Power & Light Company generated 500,000,000 kilowatt hours of electrical energy, which in its many uses is doing work in the mines, factories, farms and homes of this great intermountain territory that otherwise would have necessitated the use of 1,000,000 tons of coal. It would have required 25,000 coal cars and more than 500 locomotives to have transported this vast quantity of coal to the consumers.

To curtail your use of Electric Service—or to fail in utilizing electricity to the very fullest extent in business and in your home, is to fail in doing your full share to support the government's fuel conservation policy.

There are many uses in every business and in every home for electric service, where a direct and material saving of coal will result.

Electric cooking and electric ironing are important factors.

In 2200 residences, hotels and restaurants throughout this company's territory, electric service is being used today for cooking. And by using electricity for this purpose these 2200 consumers are saving the government 30,000 tons of coal annually.

If 22,000 consumers were using electricity for cooking the saving would be 300,000 tons of coal annually.

In practically every industrial pursuit in the intermountain west electricity is simplifying manufacturing processes, abolishing wasted effort, increasing production, cutting operating costs—and **SAVING FUEL.**

Utah Power & Light Co.

Efficient Public Service

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS.

We have instructions from a man today living out of the valley to sell his farm. The farm contains 185 acres, a modern eight-room house, hot-water heat, all the conveniences in a modern home excepting electric lights, which are near by and could be put in; good barns, fine granaries, chicken houses, hog pens and numerous other outbuildings. It also has a five-acre orchard, about eighty acres in alfalfa; the balance has been planted to grain and sugar beets. The property is all level and is one of the best farms in the state. We are in a position to sell this farm at a great bargain. The price of the land in this neighborhood is $175 an acre, but we will consider a much less offer, with terms agreeable to a first-class farmer. The property is located well on the main highway and accessible to good schools, churches and social conditions.

Just below 14th South, right near the 5c car line, we have one acre of land that is suitable for garden purposes; $500; 10 per cent down, ten years on the balance, 6 per cent interest.

We still have 80 acres of land right near Tremonton, belonging to Keystone Steel & Wire company, which instructed us this morning to sell at a reduction. This property can be had for $125 per acre, with a full water right from the Bear River canal. We sold the land across the road from this for $200 per acre. This property has no improvements, with the exception of fence. We can accept one-fourth down, ten years on the balance at 6 per cent interest.

In the Bear River valley, one mile from Tremonton, 36-acre farm in a high state of cultivation. This farm has a five-room frame house, barn and other outbuildings. We also have 18 acres of land adjoining this property that is also in a high state of cultivation. We have another 16 acres just across the road from the above mentioned two pieces of land, which is in first-class shape. All three of the above properties have a full water right in one of the best systems in the state. They are located on the main county road. They produced in rent to the owner last year $32.50 per acre. This is 6 per cent interest on $500 per acre after paying all expenses. When you take into consideration the location of this property, the improvements upon the same, the high state of cultivation which the land is in, together with the price of $195 per acre, I think that you will agree with us that it is one of the best buys that has ever been offered. We can sell these properties all together or any one separate, with reasonable payments down and long-time payments on the balance at reasonable rate of interest. This property is owned by a man living in Colorado, and for that reason he is wishing to dispose of same.

50-acre dairy farm in Salt Lake county. This is one of the nicest dairy properties that we have adjacent to Salt Lake City. Anybody desiring to go into the dairy business would do well to investigate this. This land is some of the best land we have in the county and is all under cultivation and all under irrigation, having a good water right—in fact, more than is needed. The soil on this farm is a dark sandy loam, rich and fertile. There are some very fine improvements both in the line of barns and residences; however, the residence is hardly completed at the present time. Has the light, power, telephone and all modern conveniences that go to make dairying easy and pleasant. We can sell this farm at $252 per acre, $2000 down and easy terms on the bal-

160-acre farm in Cache valley. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres of this that are tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre; the pasture land at $10 per acre, or, if party does not wish to purchase the pasture land, we have now a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary as part payment.

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Phone Was. 963.

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The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

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Buyer must use his homestead right. Same character of lands adjoining are yielding 20 to 40 bushels per acre. A real bargain to persons willing to use homestead right in connection. No better bargain in the state. Write for further particulars.

J. W. PAXMAN
Nephi Utah

SAVE THE SEED CORN

(Continued from page 3)

parts of each ear. Fill a pie tin with sawdust or fine soil. Place a cotton cloth on the soil and spread the kernels on the cloth. Place a second cloth over the kernels and wet it. Then invert a second pie tin over the first; thus a moist chamber is made for the seed. Set the tins in a warm place and wet the top cloth once a day. If at least ninety per cent of the kernels show strong sprouts in six days, it will not be necessary to make a test of each ear separately, if the seed corn has been properly selected and cared for during the winter. If the germination is low, or if the seed corn has not been carefully selected and cared for, it may be concluded that some of the seed are weak and all the ears should be tested.

Foolish to plant seed that will not grow when there is a way of finding out before you plant.

The United States Department of Agricultural suggest that on many farms where seed corn is scarce it is still possible to find some sound ears which should be saved for seed. In some cases, however, this sound corn is being fed because the owners do not realize its value nor the need for it. They have been accustomed to planting much better corn and have not stopped to consider that every bushel of seed corn they feed now would, if planted, produce a hundred or even two hundred bushels next year.

Select Sound Ears for Use as Seed.

Under ordinary conditions it pays to select seed corn in the field and to cure it carefully, but seed so selected and cured is not available for much of the corn acreage to be planted next spring. It will be necessary therefore, to use the very best seed that is available. Past experience shows that it is better to plant seed of an adapted variety, even though it is poor in germination, than to plant much better seed of an unadapted variety. For this reason farmers are urged to pick over their corn and select the sound ears for possible use as seed. If more is saved than is needed, there will be a ready market for it.

Guard Seed Corn from Damage.

This emergency seed should be separated from the immature or moldy corn immediately, to prevent further damage to its vitality. If it is not already dry it should be dried at once and kept at as uniform a temperature as possible. From 6 to 10 kernels from different parts of each ear should be taken and tested for germination. The ears which show all or nearly all dead kernels should be discarded. The remaining ears should then be shelled by hand and the grain from each ear carefully examined, discarding all kernels in which the germs appear to be dead. In this way, it should be possible for many farmers to get seed corn which will germinate from 50 to 80 per cent. This seed can then be planted thickly enough this spring to produce a stand.

Those who are not familiar with making single-ear germination tests of corn can get information on how to make the test from their county agent, from the State experiment station, or by sending to the United States Department of Agriculture, Washington, D. C., for a copy of Farmers' Bulletin 253.

The seed corn scarcity will not take care of itself. Farmers, to be sure of seed for planting in the spring, must save it this winter. Unless they do save it they or other farmers will be without seed corn in the spring. The ony choice is between making sure now or causing a scarcity in the planting season.

Don't make the hens and chickens depend upon just insects, worms and weed seeds. Give them skim-milk, whey, buttermilk, table and garden waste and grain. Feed them well. Eggs are increasing in price.—Exchange.

Good Plowing

is necessary for good crops, and good plowing is largely dependent on the plow you use.

Moline plows have long been famous for the good quality of their work. In addition they have many improvements which add to their convenience, durability and light draft. No matter what your plowing requirements or the type of your soil there is a Moline plow made for you.

Moline Wheel Walking Gang

A strong, heavy plow of the "open and shut" type for work in rough, hilly country. Extra heavy beams with great clearance enable the plow to turn under high stubble. Bottoms always scour well. Guiding lever enables a straight line of draft to be maintained when horses are crowding on a steep hillside. Made in 2, 3 and 4-bottom sizes. Can be furnished with rear wheel and riding attachment. Equipped with either Moline chilled bases or steel bottoms.

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An easy foot-lift plow made in 1 or 2-bottom sizes. Extremely light in draft because the wheel control is correct. The rear wheel is not affected by any motion of the tongue, and the tongue is not crowded against the horses by the rear wheel. Does splendid work under all conditions. Equipped with either Moline chilled bases or Moline steel bottoms.

Moline Wheel Guide Two-Way

A popular plow for hillside plowing or plowing irrigated land. To raise the bottom simply press a foot lever. Wheels run in the corner of the furrow and do not climb the furrow wall. The tongue always remains parallel with the furrow and does not crowd the horses. Hitch automatically shifts at the ends of the rows.

Moline Power-Lift Gang

Fits any size tractor. Power lift is so arranged that bottom can be raised entirely or any intermediate distance by simply pulling a cord—a desirable feature in difficult plowing. Very strongly constructed for hard usage. Thoroughly turns the soil and covers trash. Made in 2, 3, 4 or 5-bottom sizes. Equipped with either Moline chilled bases or steel bottoms.

Your Moline Dealer will be glad to show you these plows. If there is no Moline dealer in your locality write us for further information. Address Dept. 33

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LELAND STEVENS
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Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

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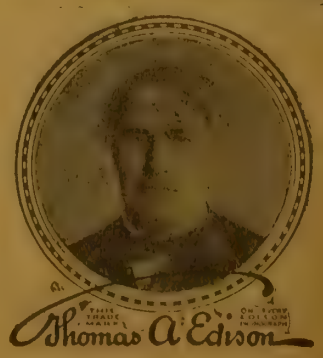

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 30 LEHI AND SALT LAKE CITY, UTAH. FEBRUARY 23, 1918

Prepare Now For Spring Work

Need of Increased Production

Written for the Utah Farmer.

The question that every farmer should ask himself right now is, how well prepared am I for the spring drive. Am I ready with all my equipment to start to work?

Have you gone carefully over all your machinery, plows, harrows and other implements and made them ready for the spring work. Is your plow sharp and rust all taken off? Are your fences in good repair so that livestock can be turned out for early spring pasture? There may be some gates that need repairing. How about your harness, is it in good repair and oiled? After all don't it pay to get ready for the spring work during the winter or early spring time?

Go carefully over all your tools and machinery and find out what you will need to put it in good working order for the "spring drive." Delays in placing your orders for repair parts and extras may seriously interfer with your spring work. Serviceable equipment not needed should be sold or made available to others. Sell useless material for junk. Unusual conditions make it very necessary that orders be placed at once for repairs and needed new machinery.

Have you, your seed carefully selected and cleaned for spring planting. Have you made your plans as to just how you are going to crop the farm this year. How about the vegetable garden and planting a few early seeds to secure some early vegetables this spring.

It is time for us to speed up, so that we can get the best results. We are at war, and any man who does not do his share, is a slacker to the cause of liberty. There is work for every man and woman, no excuse for idleness now upon the part of an American, what we need to do is speed up and win this war.

Thousands of our young men have gone to war. Thousands at home, the mothers and fathers, brothers and sisters of those who are in uniform, have been too prone to feel that they were well enough represented in the war business to sit back and await the results. The time for that sort of feeling is also past. The loved ones about to enter the firing line are going to have less chance to come out alive if those of us who remain at home do not produce the food, the arms, the ammunition and the other things essential to the success of this war and the saving of their lives.

It is time that all of us took this war business more seriously. If we do not, we will have it forced upon us very soon, and we will then not fail to realize that the death list might not have contained the names of our loved ones, if we had been more prompt in doing the part now incumbent upon every human being who has strength enough to contribute something to the work of winning the war.

The production of food is one of the most important things to help win the war. To get the best results this year we must plan now and prepare for the spring and summer work. We must produce more with less help. Machinery and labor saving implements will help.

It is most advisable this season to operate the farm with the highest degree of efficiency, which, in turn, means the intelligent use of modern machinery, well selected good seeds, and a good seed bed, all these means work and now is the time to make ready for the greatest crop of food stuff we ever produced.

To win the war our country and our country's allies need the product of every acre of land as well as the loyality of every man and woman. We must not only supply food, but we must produce enough food. Victory depends as much upon bread and meat as upon guns and munitions. The plow may prove to be as mighty as the sword.

Let us see that every acre of soil is loyal. Let every community co-operate with the farmers. Should the indivdual be unable to prepare and plant his land the community will be able. If not for its own sake, then for liberty's sake. There may be much more depending upon it than we know.

An English authority commenting upon the need of increased production recently said:

"There will not be food in existence for the world's need next year unless every nation puts forth its energies and its self-control.

"War has stripped agriculture of labor, transport, machinery and fertilizers to the point of lowering production dangerously near the minimum of the Allied peoples and armies.

"The food question has thus transformed itself from a national matter into one for the Allies in concert. For the common safety, they have to handle it conjointly, each increasing its production and restraining its consumption.

"America, as the chief producer, is taking a grasp of the situation upon the broadest lines, curtailing exports to neutral countries, regulating supplies and prices and seeing to distribution according to each Ally's necessity. This loyal co-operation is one of the most striking evidences of the high moral which animates the cause of civilization."

Such expressions of trust and appreciation should give us a better vision of human needs across the water and help us to share with still greater freedom our relative plenty with the nations whose stocks of food are at low ebb.

It should inspire us to the greatest effort to produce all the food stuff possible. Right now is the time to plan for this increased production, prepare for the spring rush and equip ourselves in every way for the great responsibility of food production.

More Wheat Needed

By J. W. Paxman.

One million bushels of wheat over and above the amount produced in 1917 (5,650,000) is needed and asked of the farmers in Utah by the nation. The world's available surplus, it is estimated, will be entirely exhausted by harvest time. Should the harvest this year in the United States not be materially increased over the 1917 crop it is easy to see how hunger might overtake the nations and weaken us in the great struggle against tyranny and bondage.

The nation needs a billion bushel crop this year and has entered into a vigorous campaign to obtain it. This means an increase of about 53 per cent or nearly 350,000,000 bushels above the harvest of 1917. The department of agriculture at Washington, D. C. has apportioned this proposed increase to the wheat growing states and has asked Utah to come through with one million bushels of this increase; so the request has come with authority and is just as much a call for service on the part of the farmer as an allottment of Liberty Bonds, War Savings Certificates or Red Cross Assessments upon any community and it is up to we farmers to do our patriotic duty and produce this additional million bushels.

How Shall It Be Done?

The acreage and condition of winter wheat in Utah are a little under normal owing to the very late or entire absence of fall rains, so that the opportunity for any material increase in fall planted wheat rests in the behavior of the spring and summer weather. A favorable spring followed by a normal summer will do much to increase our yields, but we must not depend wholly on these conditions. At a recent convention of the Extension Workers of the Agricultural College the request of the Department at Washington was seriously considered and the increase of spring planting thot necessary to obtain this extra million bushels, was apportioned to the counties having ability to meet the demands and the County Agents asked to open a campaign in their respective counties for the increase in acreage determined on in the convention.

It is hoped the Farm Bureaus will take hold of this work enthusiastically, appoint good, live committees on wheat production and see that the work is carried to a successful issue, that each county may do its full share in backing up the nation's efforts with the "staff of life."

The message to be brought to the farmers by the County Agents, in this matter is of most vital importance, and their endeavors should receive the hearty co-operation of the farmers everywhere. No more vital thing can be done to conserve the interests of the nation at this time, and give it the "punch" with which to win the war, than to produce a bumper crop of the most essential of all foods—WHEAT.

Some Suggestions.

In addition to the increased acreage, the following should be scrupously observed as important factors to obtain increased yields. (1) Exercise great care in the selection of seeds. Obtain the very best and cleanest possible. (2) Grade and clean seed with a good fanning mill. (3) Test your seeds for vitality and germination and be sure they have power to reproduce. (4) Treat all seeds against smut in the way recommended by your County Agent. (5) Use the best methods known for [illegible] your land. If you have a neighbor who is successful [illegible].

All new lands under irrigation systems should be planted to wheat in preference to other crops, they will serve the nation best at this time by growing crops of wheat.

Dry-farm lands which were held in fallow during 1917, or upon which crops failed, can best be utilized by planting to spring wheat. Under present prices wheat will give the largest returns and no other crop should find place on such lands, in the face of the urgent needs of the nation for wheat.

In sections where soil conditions are favorable and the rainfall is 14 inches or more, dry-farmers are advised to plant a reasonable per-centage of their fall plowed lands to spring wheat, where such planting can be done without interfering materially with good agricultural practices. It is thought under conditions unusually favorable, such lands can grow a crop of wheat two years out of three, or three years out of five, especially when there is an emergency like at the present. We [illegible] will give this serious thought and plant all the spring wheat they can consistantly.

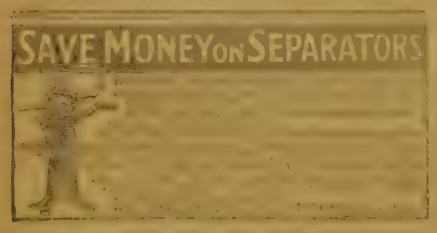
[illegible] where only high water is available, it should by all means be utilized for the production of wheat. The lands can be saturated either before or after planting, then harrowed well, and with no further irrigation, will give a very satisfactory crop. Attention must be paid to this condition if we are to measure up to the expectations of the nation and of our [illegible].

Varieties and Methods.

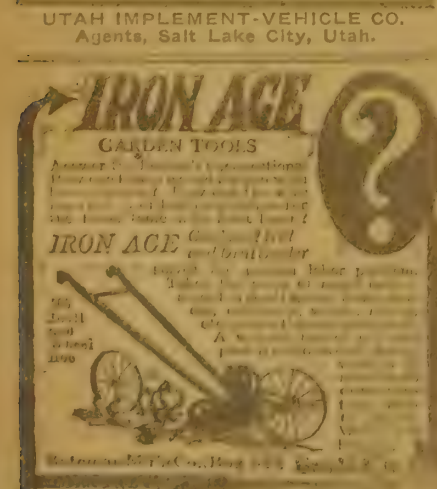
The New Zealand and Marquis are recommended above other varieties for irrigated farms and the Marquis for the dry-farms, although other varieties may be used to advantage where these varieties are not obtainable. An effort is being made to locate quantities of these wheats for seed and notice will be given in due time where they may be obtained.

Plant as early as weather and soil conditions will permit—as soon as the soil becomes friable and will not puddle. A good drill should be used

(Continued on page 6)



UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.



Utah Implement-Vehicle Co.
Agents, Salt Lake City, Utah.

150,000 Farmers Quit "Guessing" When They Paid Our Dealers $10,000,000 for "Z" FARM ENGINES

150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks-Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
3. Simplicity and staunch durability.
4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

3 H.P. $89.00
6 H.P. $156.00
Both With Throttling Governor
1½ H.P. (Gasoline) $48.50 on skids
All F.O.B. Factory. With BUILT-IN MAGNETO

Economy and efficiency, with "more than rated power" in an engine is the war-time-demand of farmers of America.

They have "quit guessing"—they demand action, proof-performance on their kind of work.

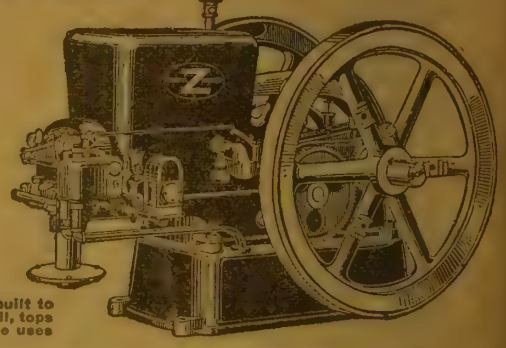
So 150,000 leading owners have backed their judgment on the FAIRBANKS-MORSE "Z" Engine with $10,000,000.

That's a lot of engines bought for reasons you'll find are wise ones.

"Z" 3 & 6 H. P. ENGINE
Uses Economical KEROSENE
Also Distillate, Coal Oil Tops or Gasoline

Kerosene, easy to get, at half gasoline costs, does the work in a "Z" with *more* than rated power. FAIRBANKS-MORSE engine designers saw this war-demand coming and built "Z" Engines to fit the farmers' needs. The farmers know it now—over 150,000 strong. Will you too investigate? Compare. Figure out the FACTS—before you buy ANY Engine. *Alright*—we know the result, because—

You Also Get This Local Dealer Service
Go to the Fairbanks-Morse Dealer. He is in position to render you prompt and personal service. He has exactly the "Z" for your NEEDS in stock and can make quick delivery. See it in operation on his floor.



The 3 and 6 H. P. sizes are built to use kerosene, distillate, stove oil, tops or gasoline. The 1½ H. P. size uses gasoline only.

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Chicago - Manufacturers

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FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, FEBRUARY 23, 1918 No. 30

The Automobile On The Farm

Soil Fertility and How to Maintain It

By F. S. Harris, Director Utah Agricultural Experiment Station.

Every farmer is interested in maintaining the fertility of his land, since if that fails his source of income is gone. This is not always easy to do; the soil is much harder to understand than some people suppose. Farming is no child's play; and of all phases of farming, probably the proper handling of the soil is most difficult. Soils differ so greatly in their requirements that what is learned about one will not apply to another. There are, however, a few simple facts that will help in handling all kinds of land.

First, all crops use plant food—not very much, but always some. This means that where the crops are hauled away from the farm the supply is gradually lessened. This is not serious with many plant foods, since the supply is so great; but it is important with two or three of the foods that are scarce in practically all the soils of Utah. In keeping up the fertility of the land this must be kept always in mind.

Every farmer knows that it is a good thing to return to the soil as much of the manure and farm wastes as possible, but many do not take precautions to make the manure do its best work. Manure handled in different ways has very different values. If it is allowed to ferment and leach, the greater part of its value is lost. The best way to prevent destructive fermentation is to keep the pile compact so that air cannot get in, and also keep it moist. air and dryness promote fire-fanging which causes a loss of nitrogen, the most valuable part of the manure. Leacning can be largely overcome by proper piling. This may be done under cover if available; if not, a rather high pile with steep sides keeps the rain from doing damage.

It may be that in time we shall have to use commercial fertilizers, but at present a wise use of stable manure together with a proper rotation of crops will look after the plant food requirements of most Utah soils. Organic matter and nitrogen are the substances to be given most attention; these can be maintained by manure and by a rotation of crops that includes plowing under leguminous crops. The rotation also helps in controlling the plant diseases and pests that are often responsible for the low yields that may be attributed to a lack of plant food.

Of course the lack of water and the presence of too much water and of alkali are problems that are constantly in the mind of the Utah farmer. These factors determine crop yields more often than does mere plant food. Proper irrigation and drainage where necessary are the remedies for these troubles.

Summarizing these ideas: The Utah farmer who is anxious to maintain a high degree of productivity in his soil will carefully care for all manure and wastes; he will rotate his

(Continued on page 14)

The Annual Automobile Show will be held this year at the Bonneville Pavilion, Salt Lake City. The exhibit will open Monday evening, February 25th. More than half of all the autos sold are purchased by farmers.

Written for the Utah Farmer, by R. S. Miller.

At one time the automobile was looked upon as a luxury but not so today—it is a necessity, a help for every farmer.

Like all other important inventions the automobile has been the object of much interest; but perhaps no other invention has attracted so much attention or appealed to so many people. 'Tis true the inventions and developments in the modes of travel have been many and great. The steamboat, the steam railway, and the electric railway have all been factors in developing both passenger and freight traffic, but the automobile and auto truck, furnishing a service which nothing else can supply, has many advantages over these. It is not limited to certain water-ways or cross country routes, but with an average highway its uses are innumerable.

The automobile seems to be very well suited for the farm, for here it can be used for pleasure as well as for profit. The long and often hot trips to town or city with the weekly farm produce are turned to pleasant evening drives with the auto. The long delays in harvest time sometimes caused by a breakdown in the machinery, are done away with by a quick trip to the repair shop in the automobile. It also comes in handy in marketing the small fruit or even truck. Likewise,, it affords a quick conveyance for the physician or veterinarian. Friends and relatives, living too far distant to reach with horse and buggy, are brought into closer contact with the aid of the auto. Attendance of the farmer and his family at the entertainments, churches, lectures and social gatherings is a rule rather than an exception and his views of life in general are broadened.

We have used an automobile on our farm for four years and we find it very useful as well as a great pleasure. We have not used a truck car for carrying loads but a large car carrying six passengers, with plenty of room for considerable other things besides. We frequently take two crates of eggs, jars of butter, etc., to a city twenty-five miles distant, because the city is large and affords better opportunities to dispose of produce. We can make the run in about an hour, and get back in the same length of time. If one has customers for produce, the dispensing is quickly done, and the errands will be accomplished in less time than it would take to drive to a nearer town one-third the distance away. Hence, time is saved and a general good farm holiday is the result of the inspiriting ride over the good roads which we take for this trip.

The trip to town that used to wear the women folks to a frazzle, is now taken with exhilaration instead of fatigue, and that is really no small thing in favor of the farm automobile.

Again, if repairs are wanted, it takes but a short time to get them, and the telephone, in conjunction with the automobile, saves many hours of precious time, as well as hours of lost labor. If a threshing machine breaks down, the telephone will let us know at once where the repairs can be had and when, and then the run for said repairs can be made without loss of time, whereas, under the old regime without a 'phone, long trips were necessitated, often futile in the end, and a second or third trip would be needed to some other point where the supplies could be secured.

Besides these reasons, there is the superior facilities for social functions which an automobile brings forward. The lecture, the play, the concert, that seemed too far away when the trip must be taken with even a span of good horses can be taken with the automobile after the evening chores are done, and the trip home will consume so little time, the family can get to rest in very reasonable time. They will be rested, refreshed, helped and strengthened by this contact with outside things. The list of acquaintances broadens, and the general satisfaction and comfort in life, especially farm life increases. The boy and the girl on the farm with an automobile, do not want to leave for other fields, and if they do, they soon learn the greater comfort, happiness and satisfaction to be found right at home.

Even the neighbors and the hired men are helped by the automobiles. We have aimed always to offer a seat to anyone providing it was not needed for home consumption, as you might say. And the hired man who knows he will be taken along, if he gets himself ready in time, is not going to lag in his evening chores, in fact, a good feeling ensues between employer and employee. Not that we should recommend letting the hired man run an expensive car, but when there is room to spare, he certainly should be given a seat, providing the run is in the evening or off time of work.

Some things pay, even when the actual receipts of profit cannot be counted in dollars and cents. With the automobile on the farm we think this can be counted in both ways. It is profitable for money ways and it is profitable for satisfaction and advancement. The broader life for all concerned is something to be considered for it is not all of life to exist, or to make money. Life is life, and we are living just as much today as we will be next year or any time to come. Live in the present and take the good, the joy, the happiness of life today, because when you get ready to retire and have a good time, why, something else may happen, you know.

The illiterate farmer is a thing of the past, and while future presidents probably do not live on every farm, some of the farms may be, even now nourishing him, teaching him, bringing him into a broad, beautiful, clean life. And the automobile helps incalculably in the educating, opening, and enlarging the farm people to the

(Continued on page 11)

Increasing Efficiency of the Dairy Cow

J. E. Dorman, Western Dairy Division.

These are the days of efficiency and conservation. The man, no matter what his occupation, who does not manage his business in an efficient manner will find profits diminishing and finally he will be forced out of business by the competition of more progressive business men. This is true concerning the dairy situation today.

There is no branch of the dairy business so vital to the industry as the producing end of it. The industry begins with the cow and upon her management depends all other branches and governs to a large extent what can be accomplished in the manufacture of dairy products and their distribution. The consumer pays the bills and often is paying for inefficiency and mismanagement on the dairy farm.

There never was a time in the history of the country when the dairy business was more important than now. Dairy products are absolutely necessary for the prosecution of the war. A greater demand has been created at home and abroad which has increased the price as much as 50 per cent in some sections. But the high prices of feed has offset the margin of profit to the producer to a large extent and it is necessary for those who are in the producing end of it to make every effort to keep the cost of production down to a minimum. The question before the public today is: What is the cost of producing milk? This question is being considered by men in the office of the Food Administration, the U. S. Department of Agriculture, almost every college professor, the men who are immediately connected with the industry and almost every person in America, because every one is consumer more or less of dairy products.

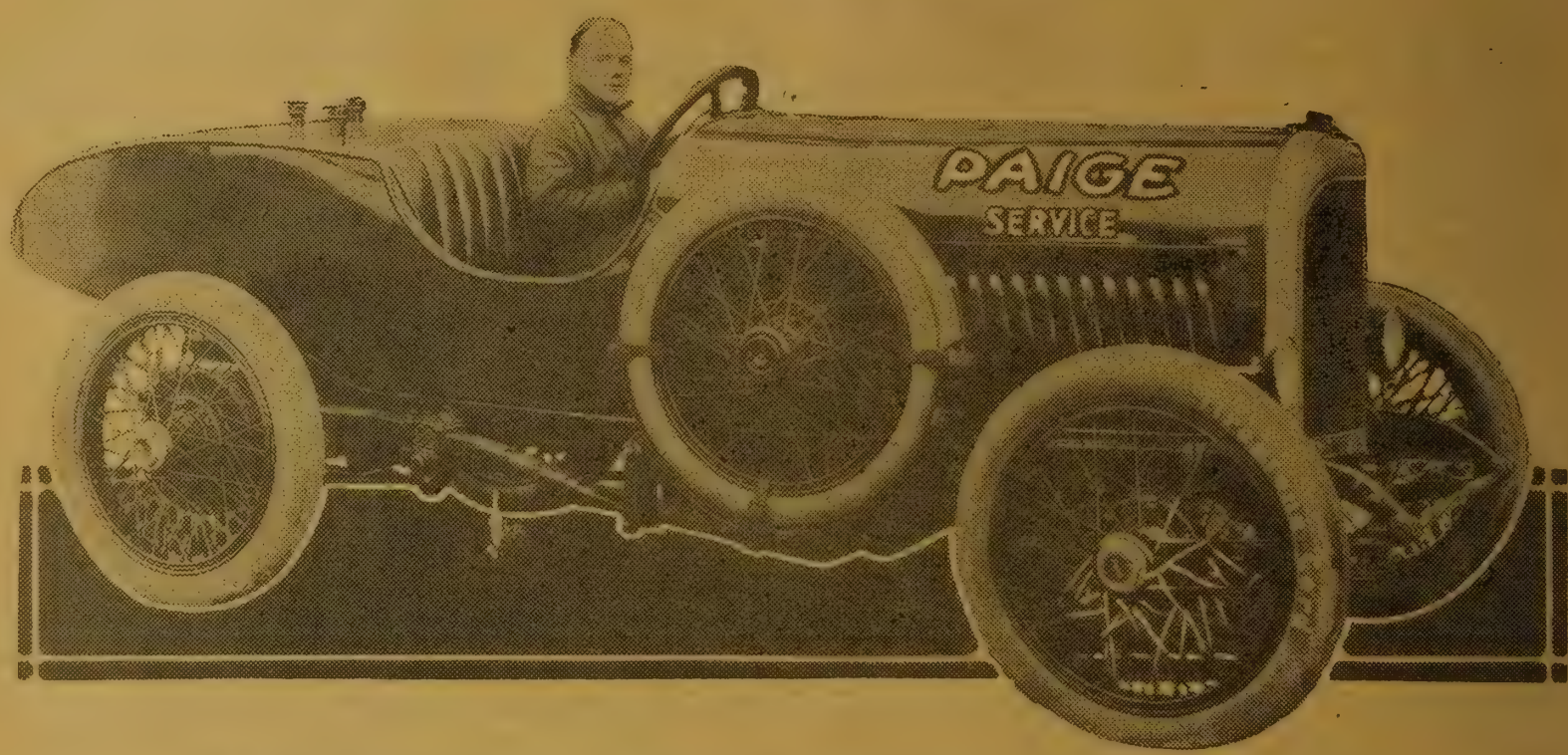
Every person financially or officially connected with the industry has had a turn at figuring on the cost, and it would be amusing, were it not so pathetic to witness the attempts to arrive at some definite conclusions. No systematic effort has been made. Each has had a system of his own and of course the results differ. Some include feed and labor; while others figure in the overhead, everything including a summer vacation, while still others forget the feed. Reports from different parts of the country show a price ranging from $2.42 to $6.00 per hundred pounds of milk.

The producers themselves have had little to say. They seem inclined to let others figure and if the prices offered do not seem to hold a profit, they dispose of their herds. Considering the number of dairy herds in the United States, comparatively few good cows have been slaughtered. Yet many have been transferred from one farm to another, and have had little effect on the production. To those who have made a study of present conditions and look forward to future prospects, there never was a better

(Continued on page 7)

COME TO THE SALT LAKE AUTO SHOW FEBRUARY 25 TO MARCH 2.

What 1918 Paige Service
Will Mean to Every Paige Owner In This Territory



The Famous "Yellow Streak"' Service Car

The Paige Motor Sales Co. of Utah inaugurated the famous "Yellow Streak" service last fall to the great pleasure of Paige owners in the territory which comprises—Utah, Eastern Nevada and South Western Wyoming.

The "Yellow Streak" has been all over this territory and has called upon every Paige owner. If the owners car was in need of adjustment or repair, the expert mechanic, Mr. Ben Burrous in charge made the necessary adjustment or repairs. His expert services and advice cost the owner absolutely nothing. We do not wait for the service call, we forstall it. We will have the "Yellow Streak" in continuous service during 1918. You can't beat this service.

THE RELIABILITY OF PAIGE CARS IS EVIDENCED BY THE CLASS OF DEALERS REPRESENTING THIS LINE

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Logan, Utah.
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Auto Lodge
Myton, Utah.
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Richfield, Utah.
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Panquitch, Utah.

PAIGE MOTOR SALES CO., Salt Lake City

SEE OUR EXHIBIT AT THE SALT LAKE AUTO SHOW

The Auto and Farm Success

To the City Folks, the Auto Is Chiefly a Pleasure Car—To the Rural Folks, the Auto Is Primarily a Business Car.

John R. Peterson.

Already thousands of farmers all over the country own and use these modern machines of easy and rapid transportation, both for business and pleasure. They will soon be as common on the farm as are now the sewing machine and the self-binding harvester. In coming years the progressive man will think it as impossible to get along without one as he does now of a team and wagon.

The automobile for general road use, as well as for some other purposes, has been fully tested and has been found highly efficient in every way. The experimental age of the machine has passed. Machines turned out now are of the finest workmanship, and they are constructed on such simple mechanical principles that a woman or girl can operate them with ease and safety, and a boy can repair them. They are also now cheap, compared with the material used in their construction and the high service possible to be derived from them.

The one great advantage of the automobile to the farmer, or other man, is that the machine consumes no food or fuel when not in use, as does a horse or team. The horse must be fed morning, night and noon to fill him with energy for doing work. The automobile consumes fuel only when in actual use, and it never injures itself on a pasture fence, neither does it get sick and require the services of a veterinarian. You never have to sit up with it at night and give it medicine.

Most of the hauling and pleasure driving on the farm and in the country is done in the summer and other months when the weather is warm and the roads good. Roads are driest and smoothest when the sun shines most. But this is a time when a team or a single buggy horse can stand the least exertion. To drive a team fast when the weather is warm means loss of flesh to the horses and danger of physical injury. An over heated horse is a ruined horse. We must go slow with a team at most times when we shoud wisn to go fastest, and when all conditions but the horses or favorable for fast driving. If we could drive fast on a hot day, the wind produced by the rapid motion of the carriage would cool us and make the journey pleasant.

"Time is money," has been well said. The farmer with an automobile can save time, and hence is in a better position to save and make money, in many cases even enough to soon pay for the machine.

The time of the busy and progressive farmer is valuable. In the busy seasons—and all seasons are busy these prosperous times—the farmer is losing many dollars every day he is absent from his farm. If he owns an automobile and can make a trip, perhaps in the evening or when the team is eating and resting at noon, in an hour or two that would require all day with a team or horse and buggy he is saving enough money to pay for a good machine, besides deriving much pleasure in fast driving and "getting things done on time."

With a good auto the farmer and his wife can travel far and wide with ease and comfort at small expense, securing enough diversion, recreation and rest to make them look and act like the real "young folks." This is not sentiment, nor theory, but solid facts worth knowing. You are bound to feel young and be young if you ride in an automobile every day or two through the seasons, driving the machine yourself.

But the automobile has become an intensely practical machine on the farm for hauling fresh products to market. Hauling milk to the market during the busy seasons means much loss in the planting, cultivation and harvesting of crops. As a rule nearly half a day is consumed in the trip, while an automobile the trip could be made in about an hour. The wife or one of the older girls can make the delivery while the husband and other help are running plows or cultivators in the field.

The automobile can be used for hauling a variety of farm products and things to be used on the farm. The machines are very strong and will carry heavy loads with almost as great ease and swiftness as they carry lighter loads. You can load them high with grain bags or crates of pigs or poultry, and they will move off with the load as smoothly and lightly as though they carried only a few human passengers.

Often on the farm you wish to make a train at some time of the day. With one of these easy and fast running machines you can get your train on time, and make the trip almost while you would be hitching up to the buggy or wagon. If the auto is left in town till you return, it consumes no feed, and you have no livery bills to pay, as with horses. The machine does not mind the cold, and much less the heat. It will stand without watering for a week without injury.

The time is fast coming when all classes of people will own and use automobiles. The farmer is one of this class. The coming of automobiles means very much to all farmers. When all farmers have the machines, as is sure to come, then farm horses will no longer be afraid of them. They will pass one on the road without undue notice.

Give the suckling a good start. It never pays to stint any kind of farm animals; especially is such a course damaging when applied to the young things. A thrifty, good paying animal is one that is kept growing from birth until it leaves the farm.

A War-Time Economy

Uncle Sam has asked that we use oil on our shoes instead of blacking because shoe oil preserves them and thereby conserves leather.

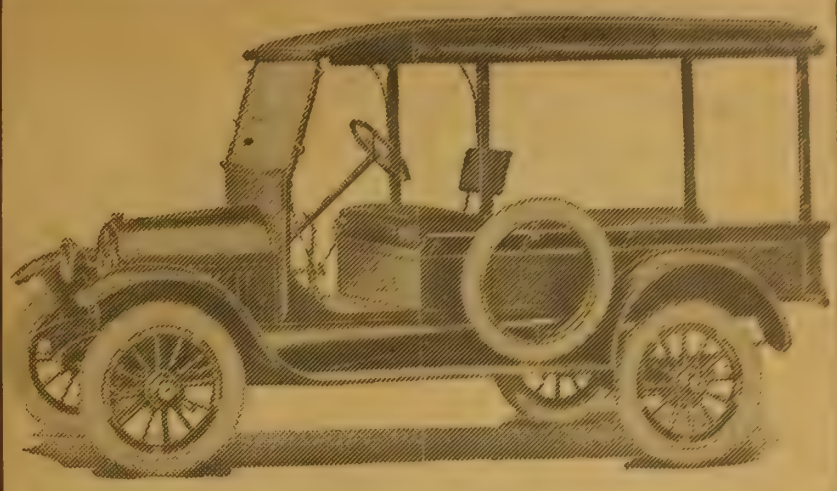
DUCK-BACK Shoe Oil

is easily applied to shoes, and gives them a good appearance. Makes the leather soft and the shoes more comfortable. Waterproof the family's shoes with Duck Back Shoe Oil.

Utah Oil Refining Co.

Salt Lake City, Utah.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.



The Handy Farm Truck

There are a suprisingly large number of things the Buick Light Delivery with its 1,000 pounds capacity can do for you around the farm.

You want to run into town for supplies, or to take a broken piece of machinery to get fixed or perhaps a pig or a calf to the butcher. You don't want to use your passenger car for this sort of thing and a wagon is too slow. What's the answer?.. A Buick Light Delivery Truck.

On the farm itself—carrying implements, grain or light loads of hay from one place to another or hauling small loads of produce to the city your Buick Light Delivery is just the thing. It will do all these things much cheaper than horses, for its initial cost is low—$895 Salt Lake—and you never have to feed it except when it's working. Its upkeep is exceedingly economical for its a Buick—made for the roughest usage.

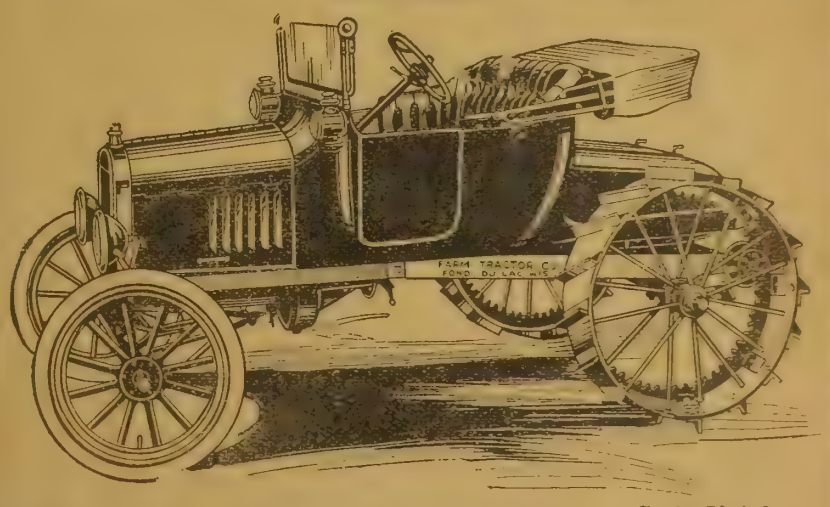
See the Buick Light Delivery Truck in our section when you visit the Automobile show. It will give us a chance to tell you all about it.

Randall-Dodd Auto Co.

53 West Fourth South Salt Lake City

FOND du LAC TRACTOR

ATTACHMENT



Made to fit on a Ford car or on any pleasure car. Costs 50% less than a good complete tractor engine. Can be operated where a tractor or horses cannot go and has very small gasoline consumption. Easy to move, always ready to work at full capacity, makes farm work easy. Will pull 12 to 14 inch mold board plows 2 to 2½ miles per hour. Will disc 25 acres per day, will pull 6000 pounds loaded wagon on ordinary road.

The greatest labor saver to the farmer.

VERY CHEAP—VERY LOW UPKEEP.

For further particulars address

Distributors

STEWART-YOUNG CO., Inc.

375 So. W. Temple St. Salt Lake City

POULTRY

RATION FOR LAYING HENS

Standard War Poultry Ration adopted by Connecticut, Massachusetts, New Jersey and New York.

The Government has recently issued a regulation prohibiting the use of more than 10 per cent of any grade of wheat in rations for feeding poultry. To meet this requirement and at the same time observe the fundamentals for poultry rations, representatives from the Poultry Departments of several eastern colleges adopted the following ration:

Grain: 500 lbs. or corn, with a variation of 400-600 lbs., 100 lbs feed wheat, with variation, 200 lbs. barley, with variation of 100-399 lbs., 200 lbs heavy oats, with variation of 100-300 lbs.

The scratch grain to contain not less than 10 per cent.

Protein, 68 per cent Carbohydrates and 4 per cent fat, and not more than 5 per cent fiber.

Mash: 100 lbs. wheat bran, 100 lbs. wheat middlings, 100 lbs. corn meal, corn feed meal or hominy, 100 lbs. gluten feed, 100 lbs. ground heavy oats, 100 lbs. meat scrap.

The mash must contain not less than 20 per cent protein, 58 per cent Carbohydrates and 5 per cent fat and not more than 7 per cent fiber.

Meat scrap should be fed as long as it is obtainable or skim milk or buttermilk used as a substitute.

Feeding Methods and Practice.

Amount: Feed according to the appetite of the birds; no definite rule can be given. Feed scantily of grain in the morning and give all the grain they will eat in the afternoon in time to find it before dark. There should be no grain in the litter at noon; when found, it indicates feeding too much in the morning.

The mash is fed dry in hoppers open all day.

In general, feed by weight about equal parts of grain and mash.

Litter: Induce exercise by feeding all grain in dry, clean, straw litter, 6 to 8 inches deep. The common straws, in their order of desirability, are wheat, oat, barley, rye and buckwheat; shredded or cut corn stalks, shavings or leaves may be used where straw is not available. All feed and litter should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from these sources due to the spores which may develop into fungus molds in the lungs or intestines.

Green Feed: A green range of alfalfa, clover or grass furnishes the ideal condition. When these are not available it is necessary to give the birds some kind of succulent food. Mangel beets, cabbage, sprouted oats or green clover are usually considered the best green feeds. If these are not obtainable, apples and potatoes make a valuable addition to the ration. Feed at noon in such amounts as the birds will clean up before night. This will require about 25 to 30 pounds per week for 100 hens. Decayed or frozen feeds should not be used as they are a common source of digestive disorders.

Grit and Oyster Shell: Hard, sharp grit is necessary for grinding feed; oyster shell to supply lime for egg shells. Neither will replace the other.

Water: 1 dozen eggs contains about 1 pint of water. Clean, fresh, pure water should be kept constantly before the hens and should be renewed at least once daily.

Moist Mash: Recommended only to hasten the development of late hatched pullets or to help in keeping up egg production of hens in late summer, especially those hens which are not to be used for breeders the following spring.

Breeds: This ration is recommended for all breeds but it is to be varied as to the method of feeding. In the case of heavier varieties, feed more scantily of grain in the morning and so encourage exercise.

Substitutes and Additions: All substitutions or changes in the ration should be made gradually.

Shrunken or feed wheat is recommended in place of milling wheat because the latter is needed for human consumption. In nutrient value, feed wheat is between milling wheat and wheat screenings.

Wheat screenings are often loaded with weed seeds and dirt, but good screenings may be used if the price is low enough.

Mustiness in feed wheat, wheat screenings or any feed may be detected by taste or odor. The order is made more apparent by the application of moist heat. Hold the sample in the closed hand for a few minutes or pour hot water on the sample. Musty feeds are dangerous. (See Litter).

Buttermilk or skimmed milk may be used in place of meat scrap, allowing about 12 to 14 quarts per 100 hens per day.

Green cut bone is a very stimulating feed and should be used with care. It is not safe to feed unless it is fresh. If fed in amounts of about one-half ounce per hen per day, it may be used to replace half of the meat scrap.

Clover chaff, either dry or steamed, is relished by the hens and may be advantageously used to add variety to the ration.

MORE WHEAT NEEDED

(Continued from page 2)

and seed put to a safe distance in the moist ground, at rate of 4 to 6 pecks per acre, according to conditions of seed bed.

A most important item, too frequently overlooked is a well compacted seed bed. By this we do not mean a hard surface, but a soil that is repacked the entire way to the bottom of the plow furrow. The best insurance we can have of a successful crop is a good, wellprepared and compacted seed bed, extending from the bottom of the plow furrow to within 1½ to 2 inches of the surface. Modern implements do this for us. Most implement houses have for sale Culti-[illegible] or [illegible] a comparatively new implement—for improving the seed bed, especially on spring plowed lands. The practice of going over the land just after seeding would give the seed better germination and increase the yields. The writer has seen enough demonstrations of this to warrant this advice. If every acre of spring planted wheat were so treated we would make for a safer crop and add to the nation's needs at this critical time.

Our nation expects that every farmer will do (not his "bit," but) his best. Let the growers of wheat answer the call [illegible] to meet the nation's needs.

That we have the material resources to win this war, if they are properly conserved, I entertain no doubt; that we have these in larger measure than any other nation in the world is a matter of common knowledge.—Secretary Houston.

MUD!

—it gets in your ditches —then grass grows and refuse piles up — and then your ditch is hard to clean with plow and shovel. The job is easy with

THE Martin

Cut clean Model 20, made in 2, 3, 4 horse and tractor [illegible] ditches, clean old ones, to 4 ft. deep.

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FINE FOR GRADING, TERRACING AND DYKING

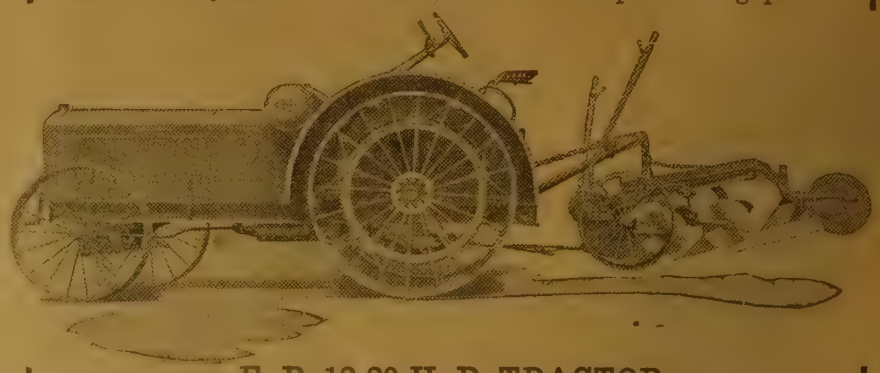
Does the work of 50 men and does a better job. Is simple, practical and efficient. No wheels or gears. No repair bills. Fully illustrated catalog with prices and list of users near you free. Write for it today.

OWENSBURG DITCHER & GRADER CO.
1577 Wazee Street Denver, Colorado

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

You May Not Have a Son to Send to the Front

but your neighbors sons have gone; and man power will be scarce this year. The Gas Tractor will help fill the gap.



E. B. 12-20 H. P. TRACTOR

will handle 3-14 inch mouldboard bottoms, or four Discs. A 24 inch Thresher with Blower and Self Feeder.

12 Years Experience back of this Tractor.
4 Cylinders.
3 Speeds Forward 1 Reverse.
8 Hyatt Heavy Duty Roller Bearing.
All Transmission gears are cut steel and run in a bath of Oil.
Auto Type Steer.
Spur Gears and Pinions are reversible.
Call or write for further information.

MILLER-CAHOON COMPANY
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Murray, Utah Idaho Falls, Idaho

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You can do it if you USE CONCRETE FOR FOUNDATIONS, WALLS AND FLOORS, ——— for *No Rat Can Gnaw Through Concrete.*

When you have built foundations, walls and floors of concrete, you have gone a great way toward preventing waste, filth, disease, fire. You have also built for permanence.

Ask for your free copy of Bulletins 137 and 141.

ROUT THE RAT

PORTLAND CEMENT ASSOCIATION

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CONCRETE for PERMANENCE

DAIRYING

INCREASING THE EFFICIENCY OF THE DAIRY COW

(Continued from page 3)

time to stock up on good dairy cows. War in Europe has reduced the livestock in the entire world to the amount of 28,000,000 head since 1914, and they are now being slaughtered at the rate of a million a month. Even though war were concluded this year it means that America must restock Europe with dairy cows and furnish dairy products for some time to come. Do you realize what effect this will have in Peace time on prices of dairy cows?

The high prices of grain must necessarily demand efficiency in feeding. It means culling out low producers. It means grading up the herds to higher production. Low producers can not make a profit on high priced feeds.

The Department of Agriculture has access to thousands of production records and this is some of the results of their tabulations.

Cows that produce 150 pounds of butterfat return an income over feed of $18.00 per year. Cows that produce 300 pounds of butterfat return an income over feed of $56.00; while cows that produce 450 pounds of butterfat return an income over feed of $108.00. or as production doubles, income over feed increases three times and as production trebles, income over feed increases six times.

Many dairymen realize that some effort should be made to increase the average production of their herd, but either from the lack of knowledge or leadership the proper steps are not taken. Dairymen are too impatient, they look for immediate results and are not content to wait perhaps several years before seeing improvement. But it can be done by feeding and breeding and is being done by many dairymen today.

The following table will show what one dairy has done in four years in this direction, by weeding out low producers and more intelligent feeding.

Year	Average Milk Yield	Average Fat Yield	Feed Cost	Income Over Feed
1912	5665	208	$43.77	$22.12
1913	7060	252	33.28	53.96
1914	9679	340	46.12	72.22
1915	9532	350	52.28	74.38

This man was a member of a cow testing association and not only obtained a record of the cows in his herd, but spent considerable time in looking over the records and the cows. The records, without making use of the information they contain are of little value, but dairymen must have records for the basis of systematic improvement.

In almost any herd, increased production can be made through a study of feeding. Under present conditions, the feeding of silage will give astonishing results. In North Dakota the Experiment Station found that where dairymen were feeding silage the cost of producing butterfat was 11 cents a pound, while on farms where no silage was fed, the cost was 20 cents. This difference, even in a small herd, would mean many dollars each year. In feeding and culling almost immediate results can be obtained, but there is a limit to such improvements and the solution of the real problem must come through breeding. This is a difficult problem in many sections where good bulls are scarce and prices are high. Dairymen with small herds hesitate to pay $400 or $500 for a bull; yet if real and lasting improvement in the quality of the herds are looked for, bulls from a long line of high producers are absolutely necessary. In the matter of feeding and culling, the methods being carried out by cow testing associations are effective, but this reaches herds of not less than 12 cows. In the United States there are 22,000,000 dairy cows kept on about three and a half million farms, an average of about 6 cows per farm. It is estimated that only one-fourth of these are in herds of 12 cows or over. That means that after eliminating about two million of one-cow dairies, 16,000,000 cows in the United States can not be reached through the cow testing associations and some other means must be employed to improve these small herds. On July 1, 1917, there were in the United States, 459 cow testing associations with an average of about 500 cows per association, or 229,500 cows on test, or only about one per cent of the cows in the country. Where these associations have been active for one year or more the increased production has been very pronounced and the longer these associations operate in a given community the greater the benefits.

The first of November we received the records of 18 associations in the Western States, giving the production of butterfat for the preceding six months. These associations have been active from one to three years.

Those active for 1 year, the average monthly production: 25.7 pounds.

Those active for 2 years, the average monthly production: 27.7 pounds.

Those active for 3 years, the average monthly production: 30.2 pounds.

While this seems to the dairymen as being a slow process, it is presumed that breeding for better cows is continued at the same time, which will have an added influence within a few years. This movement has done wonders in some other sections of the country and is considered a great work. But there is a plan being worked out by officials of the Federal Dairy Division that may prove of greater benefit, particularly to the small dairymen, than even the Cow Testing Associations. This is along breeding lines and provides for the community ownership of bulls. This will reach the owners of small herds and will not call for an investment greater than the price of the scrub bulls that are to be found in many communities. One bull association was organized last year with 16 members. Each had a bull of doubtful quality. When the association was formed each man sold his bull and as prices of beef were high, $1400 was realized from the sale. This money was pooled and four excellent bulls purchased. The farmers were so located that they were divided into four blocks and one bull placed in each block. The result is that these dairymen have not only

(Continued on page 15)

Hens Must Live to Lay

As a part of the nation-wide drive to increase the supply of poultry and eggs this year, the U. S. Food Administration will endeavor to reduce the killing of hens and pullets and asks for the co-operation of the country toward this goal. Heavy market demands for poultry resulting from meat-saving efforts have occasioned attractive price in practically all markets. This, with the shortage of feed, has tempted flock owners in many localities practically to strip their farms of poultry, even with the heavy egg-laying season near at hand.

The order from Food Administration prohibits the killing of hens or pullets for commercial purposes between February 11 and April 30.

The object of the order protecting hens and pullets is "to obtain the largest possible supply of eggs during the early spring, when the laying season is at its best. During that period, however, dealers will be permitted to buy and sell and ship hens and pullets for laying purposes."

While the order is the subject of criticism in various quarters, the dealers admit that it may be theoretically useful in preserving eggs, but it automatically suspends the wholesale business in fresh chickens.

The text of the telegraphed announcement covering the order reads:

"The licensee shall not, between February 11 and April 30, sell, ship or negotiate the sale of any live or freshly killed hens or pullets, provided, however, that this shall not prevent the purchase, shipment or sale between February 11 and February 23, of hens or pullets which were either killed or shipped prior to February 11 to market for food purposes."

The Food Administration is also requesting poultry eaters not to demand hens or pullets, except cold storage stock, but instead to demand roosters, cockerels and capons.

It is pointed out that the average yield of spring eggs according to past experience will be about 80 per cent of the meat value of the hens in the country. Furthermore the cost of eggs produced in the next three months will be comparatively low on farms where poultry are permitted to forage freely.

Every hen which is sold before the first of May represents a food loss to the nation of about 30 eggs. The total loss represented by the customary selling of hens between the first of February and the first of May amounts to 150,000,000 eggs.

This, far from being a loss to the farmer, is a monetary gain. Hens during this period usually bring about 2c per pound above the usual market price. On the other hand with eggs worth 2c apiece to the farmer, he gets 60c for the eggs and he ultimately sells the hens, weighing an average of four pounds each for approximately 2c per pound less or 8c and he has at least 52c additional profit.

To us the killing of hens just before and during the heavy spring lay is a wasteful practice—just as wasteful as the killing of fresh milk cows for beef—and we are appealing to the farmers from a patriotic standpoint not to sell these hens while laying freely.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending Feb. 19th—Cattle—Receipts, 1,527; market, steady throughout week; choice steers, $10.00; good, $8.00@9.00; feeders, $7.00@8.00; choice cows and heifers, $8.00; fair to good, $6.00@7.50; canners, $4.00@5.00; feeder cows, $5.00@6.50; veal calves, $8.00@8.50; choice bulls, $7.00; bologna bulls, $6.00@6.50.

Hogs—Receipts, 1,080; market, steady; tops, $16.25; bulk of sales, $16.25.

Sheep—No receipts; market, steady; lambs, $14.00@15.00; ewes, $9.00@10.50.

North Salt Lake, Feb. 19.—Cattle—Receipts, 118; market steady. Choice steers, $9.50@10.50; good steers, $8.50@9.50; fair steers, $7.50@8.25; choice cows and heavy heifers, $7.50@8.00; fair to good cows and heifers, $7.00@7.50; cutters, $4.75@5.00; bologna bulls, $4.50@6.00; fat bulls, $6.25@7.50.

Hogs—Receipts, none; market same as yesterday. Choice fat hogs, 175 lbs. to 250 lbs. $16.25; mixed fat hogs, 160 lbs. and up, $16.00@16.25.

Sheep—Receipts, none; market same as yesterday. Choice grain-fed lambs, $15.00@15.50; choice yearling wethers, $11.50@12.50; fat wethers, $10.50@11.50; fat ewes, $9.50@10.00.

Omaha.

Omaha, Feb. 19.—Hogs: Receipts, 15,000; market, 5 to 10c lower; heavy, $16.20@16.00; mixed, $16.25@16.40; light, $16.15@16.45; pigs, $10.00@15.50; bulk of sales, $16.25@16.45.

Cattle: Receipts, 7,000; market steady; native steers, $9.00@13.00; cows and heifers, $7.00@10.50; western steers, $8.50@12.00; Texas steers, $7.50@10.50; cows and heifers, $7.25@9.25; canners, $6.50@7.75; stockers and feeders, $7.00@11.50; calves, $9.00@13.00; bulls, stags, $7.50@10.50.

Sheep: Receipts, 12,000; market slow, 10c to 15c lower; yearlings, $11.50@14.50; wethers, $11.00@13.00; ewes, $10.50@11.75; lambs, $15.25@16.50.

SCOTCH OAT CRACKERS

These crackers are especially crisp and good as well as cheap.

2 cups rolled oats, ¼ cup milk, ¼ cup molasses, 1½ tablespoon fat, ¼ teaspoon soda, 1 teaspoon salt.

Grind in the food chopper or crush the oats and mix with the other materials. Roll out in a thin sheet and cut in squares. Bake for 20 minutes in a moderate oven. Makes 3 dozen crackers.

Let meatless and wheatless be kickless and whineless. Let all days to come be soulless and spineless.

Costs Less for Bigger Returns

Sunripe Stock Feed does produce results, and wherever used, it leaves no doubts as to its real economy. Your stock will like

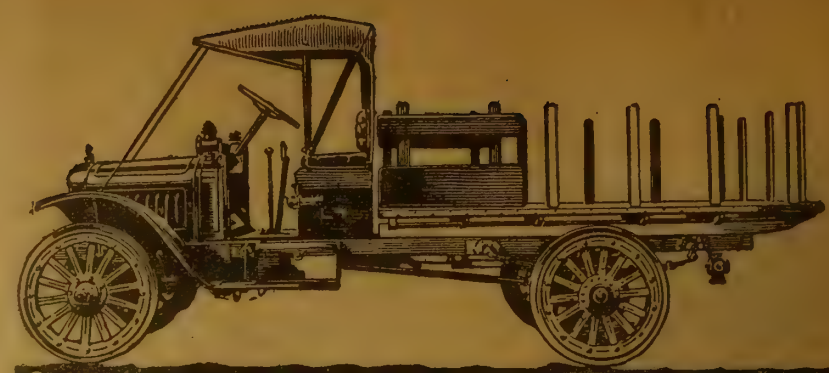
SUNRIPE

Stock Feed

—a scientifically balanced compound, consisting largely of oats, barley, cotton seed meal and sugar beet molasses. Write for free booklet—"Feeding for Results."

Utah Cereal Food Co.

Ogden, Utah.



REPUBLIC

More than 25,000 Republic trucks are in use. Hundreds of the biggest truck users of America—concerns whose hauling expense is so large that a saving of even two or three percent means a money saving of thousands of dollars a year—are using Republic trucks exclusively.

These concerns have standardized with Republics, because their own experience and the experience of other truck users has shown that the Republic gives more dependable and longer service, with a smaller investment and lower operating cost, than any other truck made.

Republic trucks are being used with the same economical results by farmers in every part of the country, for both light and heavy hauling.

The seven sizes in which the Republic is built, provide a model exactly suited to the use for which you contemplate purchasing a truck.

Investigate the Republic before you buy—if possible see our exhibit at the Salt Lake Automobile Show next week.

Republic prices range from $1,031.75 for the 1200 lb. capacity, to $4,890 for the 5-ton truck, f. o. b. Salt Lake and including war tax.

Intermountain Oldsmobile Co.

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Telephone Was. 4560

Used Car Bargains

When you buy a used car from us you don't buy a "pig in a poke."

Every used car on our salefloor has been carefully and thoroughly overhauled in our own USED CAR REPAIR SHOP—by expert mechanics who devote their entire time to making used cars run like new.

Every car is EXACTLY AS REPRESENTED. You can depend upon it.

Here are three sample bargains. We have several others, equally attractive.

7-passenger Buick

New paint—new top—good tires. In perfect condition. A wonderful family car. Price $700.

Buick Roadster

Thoroughly overhauled. Electric starting and lighting. New paint. Five tires, almost new. A big snap at $300.

5-passenger Oldsmobile

New paint, top and side curtains. Motor in splendid condition. New tires and one extra. Exceptional power and stamina. Best buy in Salt Lake at $700.

If none of these is exactly what you want, ask us about our other used car bargains.

Randall-Dodd Auto Co.

53 WEST 4TH SOUTH SALT LAKE CITY

Farmers Will Grow Increased Acreage of Beets

There is a splendid spirit of response from the beet growers of Utah and Idaho and other states, in the government's call for increased beet acreage. The U. S. Food Administration has set forth clearly through the use of the agricultural press, the newspapers, posters and personal letters, the urgent need of response this year for sugar to relieve our own people in eastern and other states and also our European allies in war. These appeals have not been in vain. The need has been so clear cut that every one appreciates the urgency.

The growers understand that the beet sugar factories have been operating under government direction since October first 1917 and the margins of profit as between the finished product, sugar and the raw product, the beets, has been equitably divided The growers have sat in council with the manufacturers and a splendid spirit of co-operation now prevails. This friendly relation is worth a very great deal and there is now real team work, responding to the government's call.

One grower recently stated the case in a very apt way, in talking to a farm bureau meeting. He said "If I owned a factory down east that had been turning out toothpicks, rolling pins and clothespins and the government representative came along and asked me to change my plans and equipment and turn out ten poles, gun stocks and other war time requirements, all made from wood, using my skilled wood workers, you would call me a real slacker, if I refused to comply with the request."

"Now," he says, "we farmers are in very much the same situation. Every one of our farms is a factory. We are converting soil fertility and moisture, using our seed, teams, tools and labor on those acres as a factory, turning out crops, a manufacturing process.

"Because our farms are surrounded with fences instead of a wall with windows and doors does not change the proposition very much. It is true that our farms mean a considerable investment and interest and taxes and labor costs must be earned, but the factory also means an investment and taxes and the payroll of the factory must also be met, the same as does the labor pay-roll of the farm.

"What has been said with reference to the wood working factory, has actually occurred with hundreds of factories that formerly turned out products required by the civilian trade are now turning out war time requirements, because the government asked for it, because they were needed as a means of winning the war. Now, let us all respond to the government call in manufacturing beets on our farm and load up the factories so increased quantities of sugar will be available next autumn. Sugar is seriously needed and our farms are located where the factories can utilize the beets and with the new price agreement, it will pay us to put in every possible acre, consistent with good farming."

Of course, we are going to respond and the spirit of the response will bring great credit to all of the intermountain district and fair profits to the growers, as well.

The pledge cards are still coming to the Food Administration office and show a splendid response to the call of the nation for increased acreage of sugar beets. The increase varies in the different districts from 10 to 35 per cent and will average very close to 25 per cent. The need of more sugar and other food products is more apparent all the time. The farmers who grow sugar beets are showing their loyalty when they express a willingness to grow more sugar beets.

Prospects look very bright for some mechanical help in harvesting of sugar beets this year. Some three or four companies are working to make as practical as possible beet toppers and diggers or lifters. The need of these machines, because of labor shortage, and help they will be to the farmer in reducing the cost of harvesting his beets, has made the owners of the machines all the more interested.

From all of this work in the making of a successful machine we are going to get one or more that will greatly help in the harvesting of sugar beets.

NOTICE TO SHEEPMEN

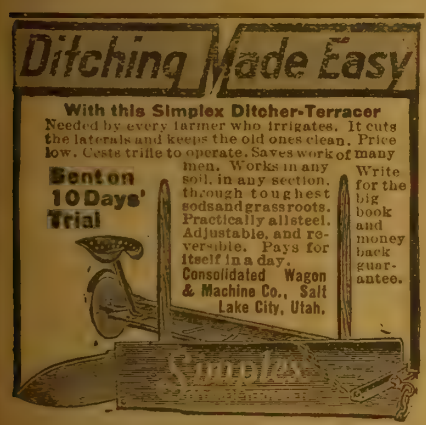
Sheepmen of Utah not now in touch with the weather forecasts, but who could use them to advantage during the shearing and lambing periods this spring, are invited to communicate at an early date with the Weather Bureau Office at Salt Lake City giving their shearing and lambing locations and dates, and the approximate number of sheep concerned, so that arrangements for providing the service can be made, if practicable. The daily forecasts, or the occasional special warnings of weather that might be harmful to sheep, are now available free at nearly all telephones in the State.

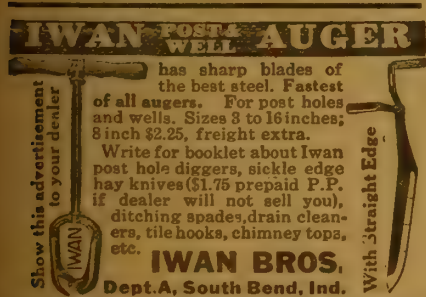
J. CECIL ALTER, Meteorologist.

TRACTOR SCHOOL

Tractors schools are being held with a great deal of success. The better one knows how to run his tractor the better will be his results. From February 28th to March 2nd, the J. I. Case Threshing Machine Co. will conduct one of these schools free to all who wish to attend. The school will be at their sales rooms 236-238 West South Temple from 8 a. m. to 6 p. m.

Bring a suit of overalls, a pair of pliers, a screw driver and a wrench ready for actual work.





In The Nation's Service

America is sending its best men to fight for freedom and in their honor the whole land is dotted with service flags carrying the stars of sacrifice.

It is a far cry from the crowded city streets above which floats our service flag to the telephone exchange hidden in the front-line trenches. But the actuating spirit of service here and abroad remains unchanged.

The Stars and Stripes is the emblem which unites us in war for human liberty and national honor. The service flag is the emblem which unites us in mutual sympathy for the men who give themselves and for those who give their men.

These flags should inspire all citizens to greater endeavor and greater sacrifice. As one of the agencies of preparation and military support, the Bell System is honored by the opportunity to do its share.

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SALT LAKE

HOME

RICE THE FOOD OF MILLIONS

To the average American the question of food has been mainly one of purchasing from the nearest grocer and butcher what appetite and income dictate. Where that food comes from, how much there is of it in the world, how universal its consumption, has been none of his concern. He could get what he wanted if he could pay for it and nothing else mattered.

But when America entered the world war and pooled her interests with her associates, the whole food situation changed. This change concerns not only governments but the individual. We have become internationally minded even in the matter of food; and today every American must look on himself as a citizen of the world—a hungry world—when deciding what shall go on his table. Before he helps himself, he must stop and ask, "What is there to eat?" and "How many people are there to eat it?" For we must all sit down to a common table. Not only have we pooled interests but we have pooled food resources with the Allies. And this means that we must also spare what we can to feed friendly neutrals and Belgium.

The situation calls for a new point of view on foods, a looking around to see how the other half lives. While there is a shortage of meat and wheat, we must remember that in half the world neither wheat nor meat is of importance as food. Rice, wheat, millet, rye, barley, corn, oats and beans are the foods on which mankind chiefly depends. Of these wheat and rice are rivals as the source of the world's food.

Rice, supplemented with beans and salt fish to balance the diet, forms the principal food of one-half of the population of the earth, and is an important article of diet with the other half. A single year's failure of the world's rice crop would practically exterminate the populations of India, China and Japan.

The rice production of the world for 1917 is estimated at 150,000,000,000 pounds of cleaned rice. However, only about two-thirds of the crop is covered by accurate statistics, as it is impossible to get figures from China, the great rice growing and rice consuming country. So the real figures far exceed these estimates.

America's Rice Production Increasing

The rice crop of the United States is recorded in steadily mounting figures. According to the final crop estimate, the yield for 1917 is 1,004,900,600 pounds of cleaned rice. This is an increase of 43.6 per cent over the 1911-15 average. The acreage planted has doubled since 1905. In the last five years California has been numbered among the rice growing states, and is now surpassed in acreage only by Louisiana, Texas and Arkansas. There are splendid opportunities to extend the acreage planted in this grain which, because of the yield and crop certainty, is the hope of a hungry world.

Home Consumption Lagging Behind Production.

The consumption of rice however has not kept pace with production, and Americans do not sufficiently appreciate its food value. In 1911-13 our average yearly consumption of rice was only eight pounds per capita. England's was 14.14 and Australia's 15.27. While the food shortage does not suggest that we imitate the Oriental and consume three-fourths of a pound a day, the present rate might be doubled.

Rice offers a nutritious and relatively cheap food of almost universal adaptability in cooking; it takes the place of bread in the Orient and cuts the consumption of wheat bread in our Southern states; it is the natural accompaniment of fowl and fish. When used in combination with beans rice makes, perhaps, the cheapest food ration. In this crisis every housekeeper should study rice and become acquainted with the variety and extend of its use.

Food Value of Rice.

Appreciation of the food value of rice will [illegible] a wider use of this [illegible] food. It is the main stay of both rich and poor; a food [illegible] the sturdy Japanese when fighting in the snows of Manchuria and helped them "fit" while digging the Panama Canal under tropic sun.

Dr. Robert Hutchinson in his work on "Food and the Principles of Dietetics," says "rice is absorbed with very great completeness in the in-

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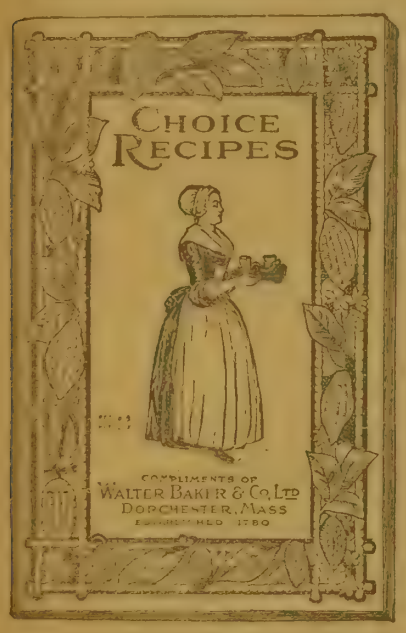

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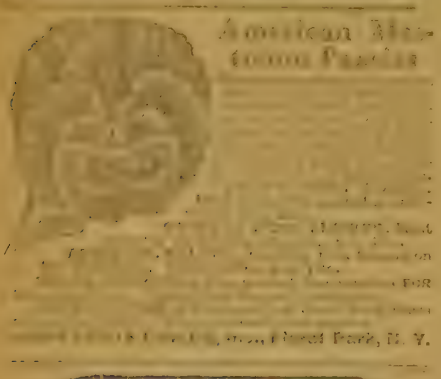

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Throttle Governed. [illegible] speed.

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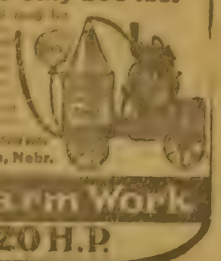

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4 to 20 H.P.

UTAH [illegible] VEHICLE CO.
Salt Lake City, Utah.

The Way to Measure Rubber Footwear Quality

Count the number of days wear you get from your rubber footwear and figure out the cost per days wear.

Do this with "Ball-Band" Rubber Footwear and you will see that it wears longest at the lowest price.

"BALL (Red Ball) BAND"
Rubber Footwear

Wear it yourself and buy it for your boys. Because it is vacuum cured into one solid piece it gives you more comfort and more protection — and saves your expensive leather shoes.

Nine and one-half million people buy "Ball-Band" Boots, Arctics, Knit Boots and Light Weight Rubbers. Sold by over 55,000 dealers. Look for the Red Ball Trade Mark when you buy and be sure you are getting the genuine "Ball-Band."

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370 Water St. Mishawaka, Indiana
"The House That Pays Millions for Quality"

The Cure for a Billion Dollar Waste

THIS year—if you own no spreader, you are not only losing out on the bigger yields and profits that should be yours, but you are contributing to a billion-dollar manure waste, and stopping your ears to the world-call for food.

We have facts and figures to show that in scores of cases the use of an International Harvester spreader has added to crops more than enough to pay for the spreader in one year.

The dealer will show you the new **No. 8 Low Corn King, Cloverleaf or 20th Century.** This is the latest International Harvester spreader, the popular 2-horse, light-draft, narrow-box machine with the remarkable new spiral wide-spread. For the small-to-average farm this is bound to be the spreader success of the year. Look it over from tongue to spiral, see it at work, and you will agree with us.

In the **Low Corn King, Cloverleaf** and **20th Century** lines are larger spreaders too, with disk or spiral wide-spread, all of narrow, easy-handling width; low, of remarkably light draft, strongly and simply constructed. Write us for catalogues and see the local dealer for a satisfactory money-making **Low Corn King, Cloverleaf or 20th Century spreader.**

International Harvester Company of America
(Incorporated)

Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

testines; indeed, its solid constituents enter the blood almost as completely as those of meat. This is to be attributed to the absence of cellulose." For this reason rice is not only a valuable article of general diet, but is especially suitable for children and people suffering from impaired digestion.

Rice is a carbohydrate, a fat-forming and energy producing food. Analyses show that 100 pounds of cleaned rice contain 87.7 pounds of total nutrients consisting of 8 pounds of protein, 0.3 pounds of fat, 79 pounds of carbohydrates, and 0.4 pounds of ash.

One hundred pounds of wheat flour contains 37.2 pounds of total nutrients, consisting of 10.8 pounds protein, 1.1 pounds of fat, 74.8 pounds of carbohydrates, and 0.4 pounds of ash.

Rice therefore, contains a slightly larger amount of total nutriment than wheat, a little less protein and a little more carbohydrates. It is an excellent substitute for bread but, like bread, it cannot be used as an exclusive diet; it should be eaten with foods rich in protein and fat.

A Cheap Food.

Although the price of rice has advanced sharply, it is still a cheap food because of its high food value and adaptability in cooking. Based on December prices rice figures among the ten cheapest foods, whether energy value, protein value or carbohydrate value is considered. From this list of cheap foods two—wheat flour and rice—are the most adaptable for accompaniments of meat, cheese, eggs and beans. In fact then of the wheat shortage and the imperative demand to save wheat, rice stands out as the most available food with which to substitute for wheat.

Rice is the most adaptable of foods. It may be served with meat or mixed with meat, used as bread or mixed with bread, used as a vegetable or combined with other vegetables, made into a soup or a dessert, served freshly cooked or used as a left-over.

Boiled Rice.

One-half the battle in teaching people to eat rice lies in giving instructions for its proper preparation. In the Southern states and Chinese restaurants it comes to the table with each snow white grain distinct and separate from the rest.

Rice can be successfully cooked either by boiling in a large quantity of water and draining, or by boiling with just enough to swell the grains perfectly. Let "Black Man" describe the first process:

Boiled Rice No. 1.—"Black Man's" recipe to prepare rice is "Wash him well, much wash in cold water, the rice flour make him stick. Water boil already very fast. Throw him in, rice can't burn, water shake him too much. Boil quarter of an hour or little more; rub one rice in thumb and finger, if all rub away him quite done. Put rice in colander, hot water run away; pour cup of cold water on him, put back rice in saucepan; keep him covered near the fire, then rice all ready. Eat him up!"

Boiled Rice No. 2.—Always wash the rice until all cloudiness has disappeared from the water. Sprinkle gradually a cup of rice in a pint of vigorously boiling water, salt to taste, boil for 15 minutes, then place on the back of the stove where it will finish swelling without burning. If a gas stove is used, turn the gas low and put an asbestos mat under the kettle. Cook in a covered vessel.

Steamed Rice—To one pint of washed rice add one pint of water and one-half teaspoon of salt. Place in a covered steamer and cook with live steam for one hour. Stir and take up with a fork to prevent gummy and lumpy appearance. Never stir rice with a spoon.

WHEATLESS AND "LESS" WHEAT BREAD

Shift the wheatless meals, change the forms in which the bread is baked, and change the bread materials. You have cornmeal, rye, barley, buckwheat, oatmeal, rice, and potatoes to help you out. Use the wheat substitutes that are available and cheapest in your locality. This is the suggestion of the U. S. Food Administration.

This is not the stupid task of a drudge, who merely cooks, that you are called to do in the world's great hour, but the fit work for the woman of high intelligence and the understanding heart who is asked as a citizen to bear her part in helping her country meet the needs of a starving world and keep faith with the Allies.

You are the producer, the family is the consumer. Your success will be measured by the amount of wheat flour saved and the satisfaction of your consumers. Insure success by mapping out a program. Make a list of wheatless breakfast breads, dinner breads and desserts to hang in the kitchen. For instance for breakfast you can have:

Wheatless.

Buckwheat cakes, corn cakes, rice-corn muffins, rye cakes, hominy-corn muffins, corn muffins, corn-and-rice waffles, spoon cornbread, crackling bread, rye-and-corn loaf, steamed brown bread.

"Less" Wheat.

Rice cakes, rice waffles, rice muffins, bran muffins, oatmeal muffins, sweet potato muffins, buckwheat muffins, Johnny cakes, corn-and-wheat waffles, potato rolls, bran biscuit.

WHY ENGLISH BREAD IS CHEAP

Some are still asking why bread is cheaper in England than in America. In England a four pound loaf of war-bread sells for 18 cents, a two pound loaf for 9 cents and a pound loaf for 5 cents. These low prices are maintained in England in spite of the fact that the wheat must risk the submarine zone.

The explanation is simple. English bread is heavily subsidized. It is cheap to the people but costly to the government. In Great Britain the government controls all the home grown grain and imported wheat. This is sold to the mills at a price that, under rigid control, puts a cheap loaf on every man's table. England's cheap bread, however, costs the government $200,000,000 annually.

Another reason why Englishman pays less lies in the quality of the bread. In Great Britain a much higher per cent of flour is extracted from the wheat than even the new regulations required in America. A substitution of 20 per cent of other cereals or potatoes is compulsory in bread making and 50 per cent is allowed.

The high per cent of substitution and government controlled prices explain cheap English bread. The yearly deficit of $200,000,000 on English bread production is paid by the Government, but comes out of the people's pockets eventually in the form of general taxation.

NATURAL PRODUCT SHOULD BE UP PUT UP THIS WINTER WHERE POSSIBLE

Every possible effort should be made by farmers who have ice houses, by creameries, and by others to put up as much ice this winter as possible in order that there may be no shortage next season.

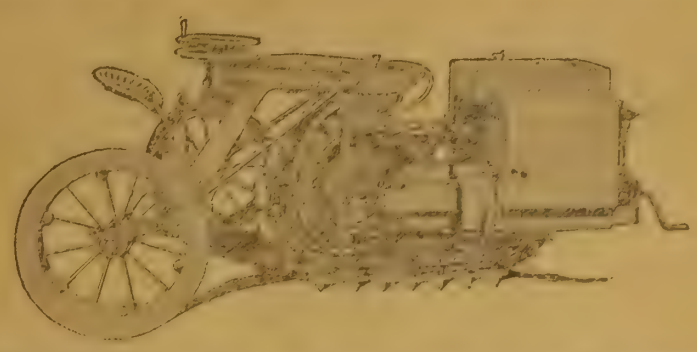
That there is likely to be a great shortage of ice next summer because of the unprecedented demands for ammonia by the army and navy and a shortage in chemicals widely used in producing ice for refrigeration, is the statement of the food administration. There is little opportunity to increase the output of ammonia, and shortage of ice during warm weather would result in untold waste of perishable foods both in the home and in small creameries dependent on constant ice sevrice.

THE AUTOMOBILE ON THE FARM

(Continued from page 3)

things worth while. City ways and city manners, as such are not to be aped, but good manners, seeing and knowing and doing the best things are worth while and the farm automobile helps all along the way.

Buy The Tractor



THAT IS A SUCCESS AND INSURES PROFIT

The Bean TractPULL Tractor

IS AN ALL PURPOSE TRACTOR

You can Plow, Plant, Cultivate, Disc, Harrow, Drill, Haul, Harvest. In fact it does all Farm Work usually done with horses.

You can depend on the Bean TractPULL TRACTOR as it is made of the very Best of Material. Equipped with NEW DEPARTURE BALL BEARING AND HYATT ROLLER BEARINGS.

$25.00 FREE SERVICE

Each purchaser is furnished free a $25.00 service coupon book which entitles you to exactly that much service.

Call at our nearest branch for full information or a post card will bring it. Order now to insure delivery.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

DISPERSION SALE

Of Registered and High Grade Holstein-Friesian Cattle

AT MY FARM ONE-HALF EAST OF FILER

ON THURSDAY, MARCH 7, 1918

15 head of registered cows and heifers; a number of the cows carry nice A. R. O. Records. The registered cattle carry the blood of Colantha Cohanna Lad, Sindt Butter Boy, DeKol 2nd, Butter Boy 3rd, Homesead Jr., DeKol and Paul Beet DeKol and other noted sires.

My herd sire that will be sold in the sale is sired by a 37th bull.

The grade cattle are cows and heifers that have been bred up for a number of years by the use of registered sires.

A number of the cows are fresh, others will freshen soon.

Some of the cows have given as high as 90 pound of milk per day.

My herd has been in the cow testing association and made nice records.

If you are looking for high producers and cows that will be a great asset to your herd you will find them in my sale.

Prospective buyers kindly bring bank reference.

SALE TO START AT 1 O'CLOCK

PLAN TO ATTEND MY SALE

JOHN KAISER, Owner

Filer, Idaho.

E. O. WALTER, Auctioneer, Buhl, Idaho.

Potato Varieties to Be Standarized

M. H. Greene, Field Agent in Marketing, Utah Agricultural College and Bureau of Markets, Co-operating.

Utah potato producers are going to plant but a limited number of potato varieties this spring. Only those potatoes which have proven to be highly productive and ones which meet the demands of the market are to be grown.

A few years ago the potato producers of Wisconsin agreed to limit the number of well known potato varieties and "the reputation which Wisconsin growers now have on the market shows the value of this step" according to word just received from Mr. Stuart L. Sweet of the Sweet Potato Ranch of Carbondale Colorado.

The varieties recommended for Utah are:

Early
Early Ohio.
Bliss Triumph.
Medium Early
Early Eureka.
Irish Cobbler.
Late.
Russett Burbank (Netted Gem).
Rural.

Often much time and money is wasted by not producing the products which the market demands. Only that section which is producing a large quantity of one variety, in order that carlot shipments can be made, is considered by dealers in making these purchases. With the exception of one or two local areas, Utah has not yet learned the value of limiting the varieties of potatoes to only the best. The varieties referred to, are sold on all markets and growers have no trouble in knowing the market price or where to sell.

Utah has an excellent opportunity to market potatoes as compared with other Mountain states. Our early potato market is one of promising development. Last August and September more than 150 cars of Utah early potatoes were sent to points outside the state. In some instances netting growers as high as $500 to $600 per acre.

The County Agricutural Agents are exerting every effort through the Farm Bureau representatives to standardize the varieties of potatoes above mentioned, which will undoubtedly result in:

An increase in the price of potatoes.
Increased yields.
Better market stock.
Better seed stock.
Establishment of a reputation for Utah potatoes.
Potatoes as a cash crop.

Now is the time to prepare for the change and establish the production of potatoes on a commercial basis.

The potato market is declining rapidly; prices have already reached a level lower than at any time during the period of the war. Only 1-3 of the crop of the U. S. has moved thus far, with the other 2-3 to be consumed in practically ½ the time, if waste and loss does not occur. Why not sell your potatoes now. Utah farmers, and purchase certified seed potatoes from growers outside the state.

A survey has been made of the choice seed potato stock of Idaho and Colorado, which can be purchased at prices ranging from $1.50 to $3.00 per 100 pounds (sacked). One hundred cars of seed Russetts and Rurals are offered for sale at $1.50 per 100 pounds (sacked) delivered at Utah common points.

Information regarding the purchasing of seed potatoes may be obtained from your County Agricultural Agent or from M. H. Greene, Field Agent in Marketing, Utah Agricultural College, Logan, Utah.

An article will appear in the Utah Farmer next Saturday, March 2, on Prospects of 1918 Being A Good Potato Year.

—o—

COLD WEATHER HINTS FOR AUTOISTS

If a water-cooled engine is not carefully guarded in cold weather and the water is allowed to freeze, pipes or radiators will break or a water jacket will crack. To prevent such damage, the safest plan is to drain the water from all parts of the system when the car is left for the night or for a long time during the day. The engine may then be allowed to run a few minutes to make sure that all the water has been removed.

If the car is used a great deal in cold weather, it may be advisable to use a nonfreezing solution. A mixture containing 20 per cent of denatured alcohol will freeze at 10 degrees above zero; a 30 per cent solution will freeze at 5 below zero; 40 per cent at 20 below; and 50 per cent at 35 below.

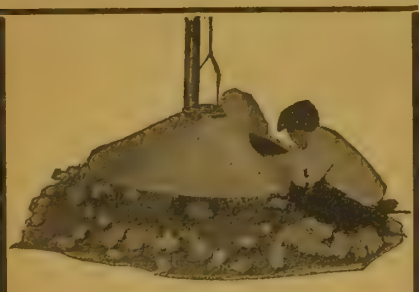
—o—

THE BRIDE'S BUTTER.

"Grocery butter is so unsatisfactory, dear," said Mrs. Youngbride, "I decided today we would make our own."

"Oh, did you?" asked her husband.

"Yes, I bought a churn and ordered buttermilk to be left regularly Won't it be nice to have really fresh butter.



The Standard Brooder
Grows Three Chicks Where One Grew Before

Here's the most remarkable brooding device that was ever invented. It saves all the chicks and eliminates all the trouble.

It burns coal instead of oil!

It is self-feeding, self-regulating, simple, safe and everlasting.

Guaranteed operating cost less than six cents a day and it will brood as many as a thousand chicks at one time.

Write today for Free Catalog giving full details.

PORTER-WALTON CO.
Salt Lake City

Every legitimate Utah industry has been aided by this bank, during its 59 years of existence.

Let us discuss YOUR problems.

Walker Brothers Bankers

SALT LAKE CITY

Shorten the Working Hours

WAR HAS PLACED A GREATER RESPONSIBILITY ON THE HOMES AS WELL AS ON THE BUSINESS OF THE NATION. AND IT IS THE DUTY OF EVERY HOME TO RESPOND WITH THE GREATEST EFFICIENCY AND HELPFUL CO-OPERATION WITHIN ITS POWER.

ELECTRICITY IS A WONDERFUL AID TO THE HOUSEWIFE. IT LIGHTS THE HOME, COOKS, WASHES, IRONS, CLEANS, DUSTS, MIXES, GRINDS AND POLISHES —IT LIGHTENS EVERY LABOR OF HUMAN HANDS AND GREATLY REDUCES THE TIME REQUIRED TO PERFORM THE DAILY TASKS ABOUT THE HOME.

THIS GIVES MANY HOURS OF TIME EACH WEEK FOR RED CROSS AND OTHER IMPORTANT AND PATRIOTIC SERVICE.

YOU CAN PURCHASE FROM US ELECTRICAL APPLIANCES FOR EVERY HOUSEHOLD PURPOSE AT MODERATE COST AND ON OUR EASY MONTHLY PAYMENT PLAN.

Utah Light & Power Co.
Efficient Public Service

Are You Doing Your Bit?

Our Big Seed Catalogue Will Help You

SEND FOR FREE COPY TODAY

PLACE YOUR SEED ORDER EARLY

Vogeler Seed Company
SALT LAKE CITY, UTAH.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

640-acre ranch in Idaho, all under a high state of cultivation, good home and barn, well fenced, all necessary machinery to run the place, 400 acres into alfalfa, timothy and blue grass, 175 acres into grain, the balance into other crops. Four miles from the railroad, independent water right, maintenance costs absolutely nothing more than repairing your own ditches. Price $75 per acre, including all improvements and machinery. Will consider exchanging for good Salt Lake City property.

40 acres at $235 per acre within eight miles of Salt Lake City. This property is situated at Taylorsville; is the very best soil in Salt Lake county; first-class water right, good water for culinary purposes. This land has been planted to alfalfa, grain and sugar beets. It has a good brick home, barns and other outbuildings. The man owning this place died some time ago and the widow is desirous of moving into town. She is unable to run this farm and for that reason we are offering here one of the best farms, price considered, that has come to our office in a long time. If you are looking for a farm right near the city that has every modern convenience this will appeal to you.

In the Bear River valley, one mile from Tremonton, 36-acre farm in a high state of cultivation. This farm has a five-room frame house, barn and other outbuildings. We also have 18 acres of land adjoining this property that is also in a high state of cultivation. We have another tract of 16 acres just across the road from the above mentioned two pieces of land which is in first-class shape. All three of the above properties have a full water right in one of the best water systems in the state. They are located on the main county road. They produced in rent to the owner last year $32.50 per acre. This is 6 per cent interest on $500 per acre after paying all expenses. When you take into consideration the location of this property, the improvements upon the same, the high state of cultivation which the land is in, together with the price of $195 per acre, we think you will agree with us that it is one of the best buys that has ever been offered. We can sell these properties all together or any one separate, with reasonable payments down and long-time payments on the balance at a reasonable rate of interest. This property is owned by a man living in Colorado, and for that reason he wishes to dispose of same.

160-acre farm in Cache valley. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres of this that are tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre; the pasture land at $10 per acre, or, if party does not wish to purchase the pasture land, we have now a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary as part payment.

160 acres of land in the Bear River valley, 80 acres of this being irrigated and 80 acres of it being dry. We can divide this 160 acres up to suit the purchaser. We can either sell the 80 acres of watered land separate, the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of dry together. We can sell the 160 acres at a cash payment of $3000 down and any reasonable length of time on the balance at 7 per cent interest. The purchase price for the 160 would be $10,500.

60 acres of land in the Bear River valley, all planted to fall wheat. The soil is of a sandy loam nature with full water right from the Bear River canal. We can sell this at $115 per acre on any reasonable terms at 7 per cent interest. If you are looking for a nice farm that will pay for itself it would pay you to investigate this.

KIMBALL & RICHARDS
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT

PERSONAL ATTENTION
Is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.
BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

HAVE BUYERS FOR GOOD FARMS
AT IGHT PRICES
List yo r farm with us
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

AN IDAHO RANCH BARGAIN
160 acres that now produce 100 tons of hay. Can be made to cut 500 tons. Near town, railroad and adjoins one of the best ranges in the state of Idaho. An abundance of timber and water. This ranch is ideally located. Fair improvements with some machinery. Price $7500, one half cash, balance terms at 7 per cent.
FEDERAL LAND COMPANY
Ogden Utah

A GOOD INVESTMENT FOR A BUYER
The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.
I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.
W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

WHEAT LANDS $4.00 PER ACRE
A Genuine Opportunity.
An enlarged non-resident (320 acres) homestead relinquishment. 2½ hours ride from Salt Lake City. Located on main line of railroad and in a good growing district. Land of excellent quality with a good rainfall.
Buyer must use his homestead right. Same character of lands adjoining are yielding 20 to 40 bushels per acre. A real bargain to persons willing to use homestead right in connection. No better bargain in the state. Write for further particulars.
J. W. PAXMAN
Nephi Utah

OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, Decemb · 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, White Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.
BATES & SONS
Guhama Farm
Provo Utah

DAY OLD CHIX
Wise economy is quality not price, we sell cheap when quality is the main consideration.
ARCADY PLACE HENNERY
is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.
A. T. SMURTHWAITE
Wellsville, Utah

10 Two and Three Year Old
Registered Percheron Stallions For Sale
Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.
ACME STOCK FARMS
Breeders of Percheron Horses and Ramb ullet Sheep.
W. S. HANSON, Prop.
Collinston Utah

DUROC JERSEY BOARS
Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.
ERIK W. OLSON
Virginia Idaho

FOR SALE
Span large registered Perchon mares, 2 and 4 year old, beauties. Dam imported from France. Must sell, price right. Write or call on
C. A. PARRISH
Centerville Utah

Registered Holsteins For Sale
A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.
LELAND STEVENS
Oakley Utah

Help America By Growing Beets
Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

DUROC BOARS
A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.
Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

ORDER SPRING PIGS NOW
Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.
VICTOR R. FISHER
Oxford Idaho

HOLSTEINS OF QUALITY
For Sale Bulls ready for service. Nicely marked and fine individuals out of high producing dams and from the blood of the "Greatest Bull in the World." For information call on or address,
ALBERT C. FISHER
Richmond Utah

PURE BRED DUROC JERSEY GILTS
I have 16 head of good Pure Bred Duroc Jersey Gilts bred to a Defender boar, whose sire was Grand Champion at Utah State Fair. These gilts will develop into fine brood sows, and by buying one or more you will make fine profit from them, as well as do a duty to your country in a time of urgent need.
H. A. FEAREY
Mosida Utah

WE WANT FARM LANDS
IN EXCHANGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

$1000 Per Acre
Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.
H. A. PINEGAR
Wellington Utah

BABY CHICKS—BABY CHICKS
White Leghorns, Brow Leghorns, $10.00 per 100.
R. I. Reds, $15.00 per 100.
ORLAND HATCHERY
Orland, Glenn County, California.

SAVE IMPLEMENTS
SAYS GOVERNMENT
The federal government is starting a campaign for the conservation of farm implements. As a first step, it is sending out a call to farmers to do six things:
1. To put in orders for new equipment and repair parts as soon as possible.
2. To use new and modern machinery in large sizes wherever possible as a means of getting maximum results with a minimum of labor.
3. To sell serviceable equipment no longer needed in order that it may be made available to others.
4. To return to channels of trade as junk machinery that has become useless.
5. To give thorough lubrication and proper care to all machinery when not in use.
6. To provide proper protection against the weather for all farm implements.

WHEAT SMUT NEEDS ATTENTION

By R. J. Leth, Idaho, State Seed Commissioner.

Bunt or stinking smut of wheat is a robber who annually pilfers thousands of dollars. The amount of damage done can not be determined or even estimated. Suffice it to say that losses through this course are bad enough in an ordinary year. Viewed in the light of war necessity any lack of precautionary measures becomes criminal.

Infection from smut may be caused by the presence of the spores either in the soil or in the seed planted. Elimination of the former source depends largely on suitable crop rotation and neighborhood co-operation.

It is unnecessary to sow seed carrying any appreciable infection. Whenever possible, seed known to be entirely free from smut contamination should be sown. This is the surest and safest way to handle the situation.

If seed of known freedom from smut cannot be secured various precautions should be taken. The first step is to thoroughly clean the seed by running through a fan mill. Two ends are attained in this process. First, a large share of the smut balls and smut spores are eliminated.

Second, the weak and damaged berries are discarded. Such berries are more susceptible to the fungicide and will seldom germinate after treatment.

If smut balls are still present in the seed the wheat should be poured into a tank of water and stirred. This process allows the smut balls to rise to the surface where they can be skimmed off and destroyed. If the seed is treated with the fungicide in an open tank skimming may be delayed until that time.

The ordinary smut killing solution consists of one pint of commercial formaldehyde mixed with forty-five gallons of water. The wheat should be soaked in this solution for ten minutes. The most convenient method is to soak it in an open tank where it can be stirred and the smut balls skimmed off. The poison does not kill the spores on the inside of the smut balls. The seed should now be dumped in a pile and covered up for two hours to thoroughly distribute the formaldehyde gas. At the end of that period it should be spread out thinly to dry until it can be sown with the drill. All tools used in the handling of the seed must be disinfected with the formaldehyde solution. This includes thoroughly disinfecting the sacks and the drill before using them.

More seed must be sown than if it had not been treated. The berries absorb moisture and hence become larger. This necessitates heavier planting. A certain percentage of the berries will also fail to germinate as a result of the formaldehyde treatment. No set rule can be given for the increased quantity to sow.

Clean seed handled with clean tools and planted in clean ground is the only sure prevention of stinking smut.

Loose smut rarely causes as much damage as does the bunt. In this case the smut spores are found on the inside of the wheat berry and a fungicide is useless as a preventative. The only practical remedy is the hot water treatment. As this treatment requires much care and considerably injures the germinating power of the seed, it is not recommended unless the loose smut is known to be present in dangerous amounts.

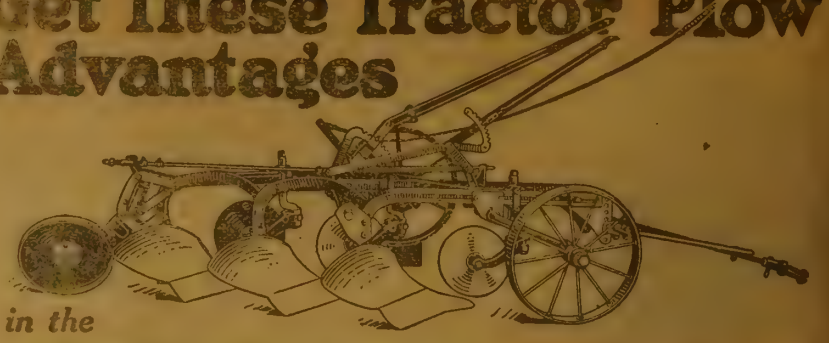
SOIL FERTILITY AND HOW TO MAINTAIN IT

(Continued from page 3)

crops to control diseases and pests and help in maintaining nitrogen and organic matter in the soil; and he will make every effort to keep the right moisture by irrigation and drainage where these are required.

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

Get These Tractor Plow Advantages



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JOHN DEERE TRACTOR PLOW

John Deere Bottoms—the world's standard for three-quarters of a century because of their better wearing, and better seed-bed making qualities.

John Deere Quick Detachable Shares—stronger and closer-fitting than other shares.

High and Level Power Lift—lifting mechanism simple, strong, absolutely reliable—no chains or sprockets to cause trouble.

Special Location of Axles—perfect balance—light draft—bottoms when lowered reach full depth instantly and stay in the ground.

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Write today for our free booklet describing fully both the No. 5 and No. 6 John Deere Tractor Plows. Ask also for our big 156-page book, "Better Farm Implements and How to Use Them." A text book on farming. Use it as a reference book. Worth dollars. To get these books, indicate the farm implements in which you are interested and ask for package TP-442

JOHN DEERE, Moline, Ill.

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SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

CEREAL VARIETIES FOR HIGH ALTITUDES

By J. W. Jones, Superintendent Nephi Dry-farm Sub-Station.

Each of the western states has areas suitable for dry-farming, but at altitudes much higher than those of the older and well established farming communities. High altitude is [illegible] always, accompanied by [illegible] and early fall frosts, or in other words, a short crop-growing season. Therefore, if crops are to be successfully grown at high altitudes, only short season or early maturing varieties [illegible] should be sown.

[illegible] winter rather than spring varieties should be grown. In growing the winter varieties at high altitudes there is always danger of having the crop destroyed in the late spring by frost. These freezes often occur during the flowering period of the crop when it is very sensitive to frost. In such cases there is usually a complete destruction of the crop, [illegible] for milling purposes.

Late fall sowing would prevent danger from late spring frost, but would materially increase the danger of winterkilling [illegible] and early fall frost. Little would be gained, therefore, by late sowing, and such a practice might prove even more detrimental than [illegible]. By substituting spring for fall sown varieties, we can [illegible] the danger of winterkilling [illegible] of late spring frost, but there still remains the danger [illegible] frost. Our only means of [illegible] the latter trouble is [illegible] of early-maturing varieties, that possess the ability to mature profitable crops during a very short frost-free period.

These varieties should be hardy, [illegible], and of good quality. A drough-resistant crop is one that is able to mature grain of good quality in a season of limited rainfall.

In searching for crops suitable for [illegible] or short seasons, it is interesting to note that in general the same varieties are recommended by [illegible] of practically all western states. The states of Montana, Oregon, Washington, Idaho, Colorado, Wyoming, and Utah all advise the growing of Turkey Red winter wheat, Marquis spring wheat, Sixty-day and [illegible] oats, and White [illegible] barley. Other varieties [illegible] are Early Baart spring wheat in Oregon, Washington, and Idaho, while Montana, Utah, and Wyoming prefer Kubanka or Pelissier spring Durum. In Canada, Marquis and Prelude wheat and a Canadian selected oat are recommended for use in short-season districts.

Proso is a short-season crop, but according to tests in Utah it is not adapted to our conditions. It is doubtful whether even the earliest corn varieties will mature at high altitudes. Above 4,000 feet the earliest varieties would undoubtedly fail to mature as often as they would mature. For this reason, corn is an uncertain grain crop, but can always be depended upon to produce a fairly good crop of roughage.

In selecting cereal varieties adapted to high altitudes and short seasons, it is well to consider the following list which includes the most promising varieties according to present information:

Spring Wheat—
- Common Group.
  1. Marguis.
  2. Early Baart.
  3. Prelude.
- Durum Group.
  1. Kubanka.
  2. Pelissier.

Spring Oats—
1. Sixty-day.
2. Kherson.

Spring Barley—
1. White Smyrna.
2. Hanna.
3. Beldi.

Winter Wheat—
1. Turkey.
2. Kharkov.

Further investigation may reveal superior varieties, but at present the above varieties have stood and are standing the test of time and are worthy of our confidence

INCREASING THE EFFICIENCY OF THE DAIRY HERD

(Continued from page 7)

the use of the best bulls to be found, but it encourages co-operation in other ways. Not only should dairymen plan to use better bulls, but have some definite plan in view. This plan provides for line breeding, for in case a number of bulls are purchased for a bull association, they can be selected from the same strain and through the interchanging of bulls they will be in use in the same community for at least eight years.

Line breeding that has been followed out by constructive breeders has been of supreme importance in the development of all classes of livestock. Many great animals have been produced by this method, while promiscuous breeding is more or less a hit and miss character. Line breeding should be followed out through bull associations if the best results are looked for.

Dairying is a undertaking which requires as much ability as does any other line of business. Some dairymen have learned this and the sooner they all learn it and act accordingly, the better it will be for them and the dairy industry.

HOW CAN YOU TELL THE FUTURE COW

Alex Lofgren.

Just how to fore tell the future of a heifer and the kind of a cow she will make has been discussed many times. Both the Missouri and Maine Experiment Stations have made careful records and try to show that the first years production is a fair gauge of the possibilities of the future cow.

In trying to reduce things, agriculturally as well as otherwise, to definite rules, practical men should not overlook exceptions. In case of a heifer that has a normal chance to do her best work and fails to meet expectations, and if, in addition, she lacks the breeding and the external indications of what a good cow should possess, there is no reason why she should not go into the discard at once. But, as every well informed dairyman knows, there are often times when, regardless of care, a heifer is not in proper condition to make a showing. In many cases giving birth to her first calf is a severe tax on a heifer that upsets the milking function and places the first lactation period at a great disadvantage. In fact, there are so many things that may interfere with the normal working of a heifer, or a cow for that matter, that any general application of a mathematical rule would play the mischief with practical dairying if we are to be governed by them altogether. Rules that scientifically worked out are guides to point the way, but the "eye of the master" is the factor that governs success in dairy husbandry.

VITALITY OF SEEDS

The following list shows the number of years which seed of some vegetables will retain their vitality: beans, 3; beet, 6; cabbage, 5, carrot, 5; celery, 8; cucumber, 10; eggplant, 6; lettuce 5; melons of all kinds, 5; okra, 5; parsley, 3; pea, 3; pepper, 4; pumpkin, 4; radish, 5; spinach, 5; squash, 6; tomato, 4; turnip, 5. Seed of other vegetables not mentioned here are short-lived, and should never be carried over more than two years. Since seedsmen often carry their seedstocks over one or two seasons, it may not always be safe to count on the full life of seeds as mentioned. Then too, the older seeds may be somewhat weaker, and therefore should be sowed thicker and more carefully than fresh seeds. However, old ones are valuable this year, and every one who has any should plant them before ordering a fresh supply. In some cases such as cucumbers, older seed are thought even better than new stock.

The food situation among the Allies is grave, yet in America there is food enough and to spare.

"Food will win the war!" whose food —German or American?

The world awaits your answer.

First Aide to Hostesses Who Know

PERHAPS it's only a couple of friends who drop in for a little chat. Or—it may be a knitting party, an Aid Society meeting or what not. Or—who knows?—perhaps it's a big "party"—music and dancing and Japanese lanterns and all that.

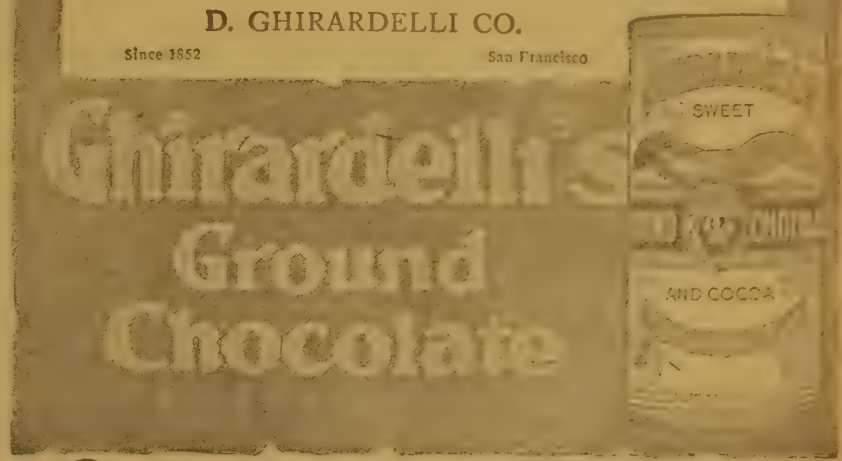
In any event, don't overlook the help Ghirardelli's can give you. Whether it's two cups for yourself—or two gallons for your "big affair"—you can make it just as easily.

Just *one* reason why Ghirardelli's has always been first aide to hostesses who know.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852 San Francisco



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1¼ ton $1245 — F. O. B. factory — 2¼ ton $1775

YOUR ATTENTION PLEASE TO OUR

Garage Service

We conduct the largest and most modern public garage in the west. Our shops are thoroughly equipped for rapid, accurate repair work at small cost to car owners. Make our establishment your headquarters next time you drive into the city. We are located only ½ block from Newhouse Hotel and close to shopping center. Free check room for your parcels. Ladies rest room. Every modern facility. Tell your city friends to meet you at our place. Yours for service.

Utah-Idaho Motor Co.

A. V. OLSON, General Manager.

465 South Main Streets Was. 4770

INSPECTION AND REPAIR WEEK

The need of ordering repair parts several weeks in advance of the using season, is so important that a week has been set apart to be known as "Inspection and Repair Week," March 4th to 9th. During the week beginning March 4th every farmer and owner of machinery, implements and farm tools are asked to inspect them and ascertain what broken parts, or nearly worn-out parts, of their machinery will have to be replaced to put them into workable condition by the time the spring work begins. To also determine what of their machinery is so nearly worn out as would make it preferable and profitable to replace with new machinery.

If those who are interested in the use of machinery will respond to this call and after inspection order the extras, new parts or repairs needed it will help the dealer and manufacturers and save the farmers and owners considerable delay in securing these parts.

Manufacturers are short of material and labor, the traffic conditions are causing serious delays in transportation. It takes time under ordinary condition to get repairs in this intermountain country and when unusual conditions are the rule, as they are today, we must look ahead if we want to get results.

Farmers and owners of machinery who did not purchase locally should be more concerned than those who have purchased of local dealers. The larger jobbers and dealers have expressed a willingness to help them get their parts in order to secure the increased production.

The Utah Agricultural College, State Food Administrator and State Council of Defense aproved of this movement, because they recognize its tremendous importance under existing conditions.

The farmer or owner who does not make known their wants during this week or before will be alone to blame if the parts they need are not supplied in time for use.

Delays are going to be expensive this year when crop production is so important.

Food is going to win the war. Good equipment in the way of machinery is going to help every farmer increase his production. Examine your farm operating machinery without delay and notify your dealer as soon as possible what parts you will require to put the machines in workable condition.

When repairs are ordered early they can be transported by freight at a big saving of expense. Late ordering often necessitates telegraphing or telephoning and increased cost of expressage.

Every one who is interested in increased production of food should help make "Inspection and Repair Week" a success.

SALAD WAFERS

Try these delicate crisp wafers.

½ cup cornmeal, ½ cup wheat flour, ½ teaspoon salt, 1 tablespoon fat.

Sift together the dry ingredients. Cut the fat into the flour and add sufficient liquid to make a dough that can be rolled thin. Cut into diamond shapes. Bake in a quick oven until light brown.

If desired, after rolling out the dough, sprinkle with grated cheese and paprika. Make into cheese straws.

NO ONE TOOK ADVANTAGE

"This seems to be a very dangerous precipice," remarked the tourist. "I wonder that they have not put up a warning-board."

"Yes," answered the guide, "it is dangerous. They kept a warning-board up for two years, but no one fell over, so it was taken down.—Harper's Magazine.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

An Investment in Efficiency

CERTAINLY the farmer's need for a substantial motor car has never been so great as it is now.

The larger part he plays in national affairs, the increased demands upon his time and knowledge, alike require for him a better means of transportation.

Progressive farmers in all parts of the country are awake to this need and in thousands of instances are wisely meeting it with an Oakland Sensible Six.

In choosing such a car they insure themselves the highest type of service at the minimum of upkeep cost, and their purchase becomes a real investment in efficiency.

The high-speed overhead-valve engine of the Oakland Sensible Six is immensely powerful and economical; it delivers 44 horsepower at 2600 r.p.m., or one horsepower to every 48 pounds of car weight.

The finely-made chassis is extraordinarily strong and serviceable, and the sightly body is swung on long springs over a generous wheelbase, insuring full comfort.

The car as a whole is handsome in proportion and finish; it is unusually roomy and accessible, and is upholstered with genuine leather throughout.

As a perfected example of scientific light-weight construction, high power and fixed economy, its value is not equaled in the present car market.

Owners of the Oakland Sensible Six report extremely high gasoline and tire mileages from their cars.

Touring Car	*$ 990*
Roadster	*990*
Roadster Coupe	*1150*
Sedan	*1190*
Sedan (Unit Body)	*1490*
Coupe (Unit Body)	*1490*

F. O. B. Pontiac, Mich.

OAKLAND MOTOR CAR CO.
PONTIAC, MICH.

OAKLAND SENSIBLE SIX

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 31 LEHI AND SALT LAKE CITY, UTAH. MARCH 2, 1918

Farm Machinery Situation Inspection and Repair Week

Written for the Utah Farmer.

The call for more food stuff means that we will plant every foot of land that can be cultivated. Shortage of help to do all this work means that more attention is going to be given to farm machinery. Our government has officially recognized the necessity of farm machinery by giving the raw material for i manufacture a rating in class B 1, next to the material for munitions. The shortage of labor can be partially overcome by having your machinery and implements in good working condition.

In order to emphasize the need of carefully inspecting all machinery and ordering the extras or repair parts, next week, March 4th to 9th, has been set apart as "Inspection and Repair Week."

Every machine or tool on the farm should be carefully inspected and make a list of repair parts which will be needed this season. Make a list of worn out parts go to your dealer and take home all the parts he has and leave an order for the others. This one thing we should realize that transportation is not usual, it is in a serious condition. The large jobbers are now complaining of not receiving their goods ordered months ago.

Remember this, that, a machine with one part broken, is useless, we should be prepared, every farmer is part of the great war system and we must be just as efficient at home in the field as we want the men at the front "over there."

Some people seem to think there may be a decline in price of machinery the best authorities do not seem to think so. Transportation is slow and machines should be ordered weeks ahead of the time when one expects to use them. Order what new machinery you can use to advantage, give the dealer and manufacturer a chance to serve you and have machines here when needed.

The object of Inspection and Repair Week is to have a concerted effort between farmer, dealer and manufacurer so that quick, definite action can be taken to over come such difficulties, as steel supplys, transportation difficulties, labor shortage and assure what farm machinery that will be needed this year.

Some of the factories may be called upon to do war work. Mechanics will be scarce and in great demand

Too many people wait until the last minute to place their orders and expect the dealer to get results, he can not do it this year so the owner of any machinery must look ahead and do his part by ordering now both repair parts, extras or new machinery.

Other advantages of having repair parts now, one can repair machinery during the slack season before the spring work begins; thus better use is made of farm labor. Farm labor should not be repairing implements when weather conditions permit working in the field. When a careful examination is made of all machinery, break downs are not so likely to happen. The farmer has much to gain by following the suggestions of inspection and repair week.

The government has endorsed the movement our State Food Administration, the Agricultural College and State Council of Defense are back of it. Everything points to the inevitable conclusion that if farmers are to be equipped to meet the coming crop season they must prepare right now. Machinery and labor saving implements are going to help the labor shortage. Every tool every machine should be in good working order ready for the spring drive.

Every practical measure that will have the effect of conserving farm machinery becomes imperative in the light of national necessity. Winter is the time for making repairs, estimating the needs of the coming year and placing orders with manufacturers, who are confronted with special difficulties in obtaining material and distributing their finished products. There must be co-operation all along the line if the country is to respond efficiently to the call for food.

It is no secret that many farmers are exceedingly wasteful in the care of their implements. A man who would not think of throwing a $20 gold piece into the river will leave a harrow exposed to the elements in a fence corner all winter long. This was bad practice even in peace times; it becomes unpatriotic in time of war.

The care of machinery is very important. Do not let your machinery rust out. Go carefully over all machines, putting on the repair parts, tighting the bolts, replacing wooden parts that are worn out. Sharpen all tools such as plows, disc harrows and spiked toothed harrows. Clean out the oil holes, secure new bearings if they are needed. The efficiency of your farm machinery can be greatly increased if you will go carefully over it and replace worn and broken parts. Under present conditions neglecting to properly care for farm machinery is certainly unpatriotic.

FEEDING BEET TOP SILAGE TO SHEEP.
You will notice how they follow up the load eager to get thier share of the silage.

ORDER NEW MACHINES EARLY

Prof. E. A. White.

In the past we have generally waited until a new machine was immediately needed before purchasing same, sometimes going from a breakdown in the field to the dealers for that purpose. The demands of the present situation call for the placing of orders for new machines, which will be needed this season, immediately. The best authorities agree that prices will not be lower. Some dealers, fearing retreuchment on the part of farmers, have been reluctant to lay in the usual supplies and we know that the transportation situation is serious. Material is being alloted to manufacturers on the basis of orders received. In

(Continued on page 9)

By-Products Will Increase Sugar Beet Growers Profit

R. S. Miller.

Farmers this year can well afford to increase their beet acreage because of the increased profits that will come to them. There is a good increase in price of beets this year over last and I am told if the plans that are now working, to get an increase in the price of sugar goes through, that the farmer may get from $9.50 to $10.50 a ton for his beets. Of course this is not certain but one thing is sure every farmer will share in any advance that may come and under present conditions the price is much more apt to raise than to go any lower. Some times we over look this advantage we have this year. Nine dollars a ton we are sure of and we may get more. The prospect looks very favorable from my point of view for an increase in the price of sugar.

Last year they started something new for the farmers of this country in the way of making a profit from our beet tops. The high price of alfalfa and other feeds has helped us to make better use of all our feeds. In the past we have received both direct and indirect some little profit from beet tops but now it looks as if they were going to be an important part of the beet growing business. Experiments this past winter prove the value of beet tops as feed for sheep and cattle. I have talked with some of those who have siloed their tops and partly fed them and each one was enthusiastic over the beet top silage. One man said that his sheep would leave every other feed including grain and alfalfa and eat the beet top silage in preference to any of them. There is so much waste in leaving the tops in the field to be fed that a farmer can not get only a few dollars a ton if he sells them or just a little feed if he turns his own livestock in to eat them.

If the farmer can get from 5 to 8 tons of beet tops and crowns for making silage from an acre of beets he can increase his profits several dollars an acre. One farmer went so far as to say that the silage, pulp and syrup for feeding purposes would go a long way to paying for the growing of an acre of beets, leaving the returns from the beets, or at least the greater part of it, as net profit to the farmer.

The cost of siloing beet tops should not be over $1.00 a ton, including the construction of the silo. The average tonnage would be about 6 or 7 tons an acre with a feeding value of 5 to 7 dollars a ton or about $40.00 an acre. And what is more it should all be fed to livestock on the farm so as to keep up the fertility of the soil. Another profit should come to the beet grower who keeps livestock and that is the profit from feeding them. Go to any community where they are making money and you will find that livestock plays an important part. Making money feeding cattle during the winter makes farming an all year round job. Now that we can get a good amount of feed from an acre of beets as well as a crop of sugar beets it is like securing two crops from the same acre. Livestock is going to be more profitable and more valuable all the time.

Now when you consider the by-products of sugar beet growing like beet top silage, pulp and syrup to help in the feeding of livestock, beet growing has an added profit that every farmer should consider when he is planning his acreage for sugar beets to say nothing about the serious need that our government has for sugar.

Hansen Livestock Feeding Plant Uses
Balanced Rations Made at Its New Mill

HANSEN LIVESTOCK & FEEDING COMPANY'S MILL AT OGDEN NEAR COMPLETION.

Sheep Feeding At Self-Feeder Similar to Equipment For Handling Cattle at Great Yards.

THE livestock feed mill of the Hansen Livestock & Feeding company, which has been in course of construction during the winter, is now practically completed and is turning out the meal product. There has been a heavy demand for this meal product throughout the intermountain country because the company has, after many years effort, succeeded in combining the required elements of proper stock food in such proportions that it has been found a very healthful ration. The Hansen company established this mill primarily to manufacture meal for its own stock, many thousands of head being kept by the company at its feed yard adjacent to the mills, but demand for it from outside sources was so great that the company also manufactures meal for commercial distribution. The manufactured product is a combination of alfalfa, grain, molasses and other essentials for fattening. A visit to the Hansen feeding yards will convince one that it has been used very successfully as the cattle and sheep fed on it there are in prime condition.

The feeding mill was constructed at a cost of approximately $45,000. This is a small consideration in view of the immense amount of work which it handles. Approximately 120 tons of meal are manufactured daily. The factory is operated at present during one shift only, but provision has been made for a continual run should a need arise. The capacity then will be more than double what it is now. Thousands of tons of hay, thousands of bushels of grain, thousands of gallons of molasses, and huge quantities of other products, are stored in immense barns, granaries, and tanks near the mill. These products represent an expenditure of hundreds of thousands of dollars among the farmers of the intermountain country, principally Utah and Idaho.

As an adjunct to the stock food mill, the Hansen Livestock & Feeding company maintains a 60-acre feeding yard which is a marvel of moderness. The yard is located on high, sandy ground with perfect drainage. Facilities for the feeding and handling of 3,000 head of cattle and 25,000 head of sheep are provided by these yards. At present there are between 2,000 and 3,000 head of choice cattle and about 12,000 head of sheep. It is expected that the number of sheep will be increased to more than 15,000 in a few weeks, and that more cattle will be brought to the yards for feeding during the remainder of the winter.

Flowing wells have been opened in the yards which supply a large clear flow of water of moderate temperature. This is especially advantageous in the winter as the stock are able to drink a plentiful supply on the coldest day without discomfort. A water system has been installed, radiating from the main well to all of the feed pens, corrals, and yards so that there is a constant supply of fresh water in the trough. One of these wells was struck at a depth of 440 feet and another at a depth of 480 feet.

It costs approximately $1,000 a day to feed the stock corraled at present in the feed yards with the balanced ration of meal and with hay. This amounts to a colossal figure for the year's business and gives some idea of the extensive work being performed at this place.

Ogden's position as a livestock center is growing daily. With the establishment of the Hansen mill and feed yards, the city's facilities for handling livestock have again been greatly broadened. The city now has one of the largest packing plants in the west, and immense stock yards capable of handling many thousands of sheep, a horse market, through which hundreds of head of horses and mules are bought and sold every month, and splendid facilities for shipping stock from the nearby ranges. The Hansen Livestock & Feeding company's feed yard is considered an especially valuable adjunct to the local livestock business, as cattle and sheep can be fed here at a reasonable cost until they are ready for market.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, MARCH 2, 1918 No. 31

President Fixes Price of Wheat for 1918

By proclamation President Wilson fixes wheat price of 1918 at $2.00 for Salt Lake, Utah, Pocatello, Idaho.

A price of $2.20 a bushel—the same as for last year's crop—was fixed by President Wilson tonight for the coming season's wheat yield. The price is for number 1 northern spring wheat at Chicago, with a scale of differentials for other markets.

The differentials differ to a slight extent from those now operative and range from a minimum of $2 to a maximum of $2.28.

In fixing a price now for the new crop, which will not be harvested until June, the president was believed to have had two objects in view. The first was to halt legislation pending in congress to fix prices at from $2.25 to $3.00 and the other was to stimulate spring planting.

Refuse to Sell.

The introduction of the price raising bills had begun to check the flow of wheat to market and food administration officials feared that mills soon would have to close down. Hoping the legislation would pass, farmers it is declared, have been refusing to sell at the present price of $2.20.

In enacting the food control law congress put a guaranteed price of $2 on next season's crop and this has been construed as a minimum price. To draw wheat to market the president fixed a price of $2.20 on last season's yield and it had this effect until the price raising bills were introduced. Then the flow began to stop.

Food administration officials have declared that if the bills passed the government would be forced to raise present prices to the new levels and that to do so would upset the food administration's flour and bread programme.

$2 in Salt Lake.

On the basis of No. 1 northern spring wheat and its equivalents, the president fixed the prices as follows:

Chicago, $2.20; Omaha, $2.15; Kansas City, $2.15; St. Louis, $2.18; Minneapolis, $2.17; Duluth, $2.17; New York, $2.28; Philadelphia, $2.27; Balitmore, $2.27; Newport News, $2.27; Charleston, S. C., $2.27; Savannah, $2.27; Portland, Ore., $2.05; Seattle, $2.05; San Francisco, $2.10; Los Angeles, $2.10; Galveston, $2.20; New Oreleans, $2.20; Salt Lake City, $2.00; Great Falls, Mont., $2.00; Spokane, $2.00; Pocatello, Idaho, $2.00; Forth Worth, Texas, $2.09; Oklanoma City, $2.05; Wichita, Kan., $2.08.

The equivalents of No. 1 northern to which the same price applies are No. 1 hard winter, No. 1 red winter, No. 1 Durum and No. 1 hard white. The wheat must be harvested in the United States during 1918 and sold in the market before June 1, 1919.

The president's proclamation states that the action is to meet an emergency requiring the stimulation of wheat planting.

In a statement accompanying his proclamation the President said:

"Under the food control act of August 10, 1917, it is my duty to announce a guaranteed price for wheat of the 1918 harvest. I am, therefore, issuing a proclamation setting the price at the principal interior primary markets. It makes no essential alteration in the present guarantee. It is a continuation of the present price of wheat, with some adjustments arising from the designation of additional terminal marketing points.

Increase in Price Unwise.

"This guaranteed price assures the

(Continued on page 12)

Drainage of Irrigated Land During War Time

Is it a good policy to stop the drainage of irrigated lands during the war period? What will be the government attitude in regard to the sale of bonds? These and other questions along the same lines are being asked, which shows the interest in this important work.

When asked these questions, Mr. R. A. Hart, Senior Drainage Engineer, for the United States Department of Agriculture said:

"There has been considerable question in the minds of land owners whether or not the drainage of irrigated lands is a proper undertaking during war times, and more recently a serious question has arisen in the minds, not only of land owners, but of drainage district authorities, engineers, attorneys and financiers, as to what position would be taken by the Federal Government with regard to approving the issue of securities to pay for drainage reclamation.

"It has seemed to those best informed, that the drainage of irrigated lands is a proper proceeding during war times, and should be undertaken, not only in spite of the war, but because of the war, in other words, that drainage reclamation should be speeded up and not retarded, since the results of such reclamation can so rapidly be translated into terms of increased crop production, especially since there are no colonization problems involved. Moreover, drainage reclamation is oftentimes as much concerned with the prevention of further injury to land with consequent reduction in crops, as in the restoration of injured lands.

"It is not at all likely therefore, that the Federal Government will discourage in the slightest degree the organization of new drainage districts, while its position with reference to the issuance of securities, is very clearly expressed in a recent letter from Dr. Samuel Fortier, Chief of Irrigation Investigations, Office of Public Roads & Rural Engineering, which sets forth that the Secretary of the Treasury has been given full authority with respect to all issues of securities, and in this capacity has a practical veto power over issuance of drainage district bonds. His approval of such issues will depend upon whether or not reclamation can be effetced in time to insure the increased crop production in 1918 or 1919, or to insure that further deterioration of land, with consequent reduction in the production of crops may be avoided within that period.

"While questions of finance are not generally involved in drainage reclamation, by individuals, the same fundamental considerations should obtain. It is manifestly a patriotic duty to do everything reasonable to increase crop production at this time, but on the other hand, it would not be patriotic to divert labor and materials which might otherwise be employed more advantageously to the nation, in the installation of systems which will not show actual results until peace shall have been restored. It is hoped that land owners, individually and collectively, will bear these distinctions in mind and act accordingly.

"It may be well to point out that there is an intense drainage activity in Utah at the present time, and that in spite of war conditions, drainage is a high class investment for the land owners and that drainage securities are actually being sold on very favorable terms."

Seed Potatoes for Spring Planting

M. H. Greene, Field Agent in Marketing, Utah Agricultural College and Bureau of Markets, Co-operating.

The low price of potatoes at planting time is an excellent indication that then is the time to increase the production of that crop or at least to maintain it. To enumerate conditions during the spring of 1910, 1913 and 1915 is evidence. Prices were low then, so much so that potatoes seemed to be more valuable as stock food than for human consumption. Ten cents a bushel or no value at all was an occurrence. Yet those who increased their plantings of potatoes during those seasons profited by so doing. Low prices discouraged planting, which resulted is decreased production and increased prices, at harvest time, with a continued increase in price until it was time to plant again. The following spring the psylogical effect was the reverse. Everyone was encouraged to plant because of the prevailing high prices, which resulted in an increased production and decreased prices from harvest time to spring. Low prices at planting time is an index of increased prices and decreased potato production.

Seed Potatoes Cheap.

The County Agricultural Agents are endeavoring to stanuardize the potato crop of Utah and place it on a commercial basis, so that our potatoes will comply with the needs of the market and meet the requirements of our producers.

The varieties recommended are as follows:

Early

Early Ohio, Bliss Triumph.

Medium Early.

Early Eureka, Irish Cobbler.

Late.

Rural, Russett (Netted Gem).

The Field Agent in Marketing has been designated to find out where choice seed can be obtained. During the past month he has been in communication with all the important seed potato producers of Idaho and Colorado, and now has listed some 200 carloads of choice and certified seed potatoes from those two states.

A large quantity of Rurals and Russetts can be obtained but the supply of the other varieties is more limited. A few carloads of each variety has been offered for sale.

In case the demand for seed potatoes is sufficiently large, an inspector from Utah will inspect the stock so as to insure our Utah farmers that the potatoes are true to type and free from disease.

The quotations on certified seed are highest, ranging form $2.00 to $3.00 per cwt. (sacked). Choice Seed (not certified) $1.50 to $2.00 per cwt. (sacked). Ordinary field run $0.75 to $1.10 per cwt. (sacked).

Order Early.

All seed producers and dealers state that orders must be placed early, so that deliveries can be properly attended to.

Our Utah potato producers who are intending to obtain seed in these joint shipments should see their County Agricultural Agent at once or communicate with M. H. Greene, U. A. C., Logan, Utah, for particulars. Potato dealers may do likewise.

How Forestry Service and Sheep Men Can Co-operate

Part of and address delivered at the National Livestock Association at Salt Lake City by Will C. Barnes of the Forestry Service Washington D. C.

The year 1917 will probably go down in the history of the range sheep industry of the western states as one of the most unsatisfactory the business has ever known. At the beginning of the year prices for mutton and wool were on a very encouraging basis and the general outlook was indeed promising. The unprecedented weather conditions, however, that obtained all over the west in the spring of 1917 played havoc with the herds, and losses in old stock and the spring lamb crop were heavier than ever before known, and the cost of feed to save the remainder of the flocks ran into huge amounts, in many instances as high as $9 per head.

Very early in the season the forester, realizing the urgency of the situation, issued orders to every forest supervisor to open all the ranges to the suffering animals just as soon as they could reach them. Unfortunately, the spring was late, the snow lying on the lower ranges for beyond the usual time, and the flocks could not be placed on many of them until fully a month later than usual, which, of course, added greatly to the cost of the winter feed bills, as well as to the losses.

Urge Personal Attention.

Consider for a moment the money value of a herd of 2500 sheep and their lambs. On an average, it is close to $60,000 at present prices. Yet there are numbers of owners who turn over to their herders, often men almost strangers to them, this amount of money represented by their sheep and from the time they enter the forest ranges in the spring until they emerge from them in the fall, they know comparatively nothing of what is happening on the ranges excepting what they learn from their camp tenders from time to time.

That this neglect of their business is losing to western sheep owners many thousands of dollars each year, goes without saying. What other business is there today that can stand such methods and survive?

Not Getting Full Profits.

That it does survive means that owners are not securing from their investments the full values they can and should, and I feel quite sure that there are many owners today facing deficits in their operations who could turn failure into success would they but sell some of their autos, buy a couple of saddle horses, get back onto the ranges all summer long, and see for themselves some of the thousand and one small leaks that make the difference between profit and loss. If ever there was a time for such a propaganda it is today, when the American people are learning new lessons in economy and thrift. It is not the money men make that builds up fortunes and secures a competency for old age, but the money they save.

Improved Methods of Herding.

For several years we have been urging upon owners the benefits to be obtained through better and more businesslike methods of handling sheep. We feel it is time to give up some of the old ways and adopt a system that means not only a saving of range and forage, but an increase in lambs and wool. This last summer proved the soundness of our views, and over 50 per cent of the almost eight million adult sheep using the national forest ranges are now being handled by the improved methods advocated by officers of the forest service.

For years stockmen have persisted in the belief that sheep and cattle could not graze together.

During the summer of 1917 some of our heaviest stocked forest ranges have been used by both classes with gratifying success.

Rather close personal touch with our forest ranges and permittees all over the west has impressed me with the lack of responsibility which the average sheep owner assumes in handling his flocks. Over and over again have sheep camps been visited on the forests where the herders said they had not seen their bosses upon the range during the entire season. How, then, can they hope to secure the best results from the investment?

It is not the money men make that builds up fortunes and secures a competency for old age, but the money they save. The American sheepman has been a prodigal in this respect, and if he is going to meet the present crisis not only in war, but as regards the range situation, he must give closer attention to the smaller details of his business than he has for the last ten or fifteen years.

Shortage of Stock Cars.

The unusual shortage of stock cars throughout the west, together with the lack of motive power and the pressing needs of the government in moving troops and supplies, cost the stock interests of the west a tremendous sum in prices, as well as shrinkage in weights. In several instances whole herds of cattle, fat from our forest ranges, were held until they could not be sold as such, but had to be shipped as feeders, at a serious loss to he owners. In other cases, cars not being at hand contracts for delivery could not be met and the animals had to be returned to the ranges. In this emergency the officers of the forest service worked unceasingly to secure cars.

The rapid settlement of the open public lands of the west has left those ranges within the boundaries of the various national forests as marked examples of the wisdom of the men who, when establishing the national forests, saw with keen foresight the value of the grazing grounds as a national asset and preserved them from destruction and dismemberment.

For the last ten or fifteeen years there have been periods when, owing to fluctuations in values and prices, stockmen were inclined to change from sheep to cattle or from cattle to sheep. This process was readily discovered through the permits issued by the forest service, and has followed very clear lines of business enterprize. At the present time, however, this switching is at the lowest ebb, and broadly speaking, the owners of each class are content with their holdings and comparatively few stockmen seem to be desirous of changing their old lines of business.

Selling Grazing Privileges.

The eagerness of many men to secure stock, the ownership of which carries with it a permit to graze upon a national forest, has brought about a system of bonus paying by means of which the holder of a grazing privilege has been enabled to secure what seems like large sums for his stock in addition to their actual market value, and completely disproves the old assertion that the establishment of a grazing system on public lands was bound to injure the stock industry. This payment of a bonus was contrary to the intent of the regulations, which was to allow purchasers to secure a renewal of permit under conditions which would protect the perimttees against loss which might otherwise be caused by their being compelled to accept less than a full market value of their livestock or ranch property if the stock could not continue to be grazed under permit upon its customary range.

The matter, however, has gone to such extremes in the last two or three years as to cause us all some concern and has finally resulted in a warning from the secretary of agriculture that the regulations covering such transactions will be strictly enforced.

CHEESE IN RAMEKINS

Butter the desired number of ramekin molds, or muffin cups. Beat six egg whites to a stiff froth, add well beaten yolks, a half teaspoonful of salt and a dash of paprika. When well mixed add one cupful of grated cheese and a half cupful of milk. Pour the mixture into the dishes, and sprinkle the top of each with fine bread crumbs. Bake eight minutes in a moderate oven.

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.

Your Thrift Stamp Money Buys

Rifles for Our Soldiers

Little by Little—a nickle here—a dime there—millions of dollars are being raised through Thrift Stamps to buy rifles, food and clothing for our defenders in France and on the ocean.

Are you doing your share in this patriotic work? Is your spare change still going for useless little luxuries, or are you lending it to the government by buying Thrift Stamps and War Savings Stamps?

Buy a Thrift Stamp TODAY. Buy 15 more as soon as you can. Exchange the 16 with a few cents added for a War Saving Stamp.

Then do it all over again. In five years the government will give you $5 for every one of your War Savings Stamps.

You will put your money out at 4 per cent interest compounded quarterly, you will have developed the thrift habit and

You will have helped your country win

the war for World Liberty

War Savings Committee for Utah

This space donated to the War Savings cause by
The Mountain States Telephone and Telegraph Company

UTAH IRRIGATION AND DRAINAGE CONGRESS

Report of Committee on Resolutions.

Your committee on Resolutions submits for your consideration the following:

I

WHERAS, The Utah Agricultural College, through the Extension Division, has courteously extended the opportunity to hold the meetings of the Congress in connection with the excellent work of the annual Round-up,

NOW, THEREFORE, BE IT RESOLVED that the hearty thanks and appreciation of this congress be voted for the hospitable reception and generous aid given by the College and its faculty.

II

WHERAS, during a number of years past and at present the Experiment Station of the Utah Agricultural College has been and is engaged in the study of the fundamental principles underlying sound irrigation practice, and

WHERAS, that work has not only given Utah a name in the forefront of irrigation states, but also has given the farmers and irrigators of Utah knowledge of incalculable value,

NOW THEREFORE, BE IT RESOLVED that the Utah Irrigation and Drainage Congress express publicly its appreciation of the Experiment Station's many splendid contributions in irrigation research and grateful acknowledgment of the steadfast encouragement, information and help to the members of this congress, and to farmers generally throughout the State, which it has rendered.

III

WHERAS, there are still many perplexing problems confronting the irrigators of Utah and those of her neighboring states, and, whereas, much more knowledge of the relations of soils crops and irrigation water must be obtained to form the basis of the solution of these problems and

WHERAS, there is at present especially urgent need of conducting, under the various, soil, crop, and climatic conditions in other typical irrigated sections of Utah, investigations concerning crops, soils and water similar to those which have been conducted on the Experiment Station Farm at Logan,

NOW, THEREFORE, BE IT RESOLVED that the Utah Irrigation and Drainage Congress urge the State to make possible by liberal appropriations, a continuation of the studies in irrigation above mentioned and an extension of such studies at an early date to typical farms in each of the important River Systems of Utah, especially as relative to soil and crop factors upon which must depend the further development of rational and economical use of water.

IV

WHEREAS, the great body of truth relating to irrigation science and practice unfolded by the Utah Experiment Station, by other Experiment Stations and by the United States Department of Agriculture, has not been made fully available for the irrigators of the State,

NOW, THEREFORE, BE IT RESOLVED that the Utan Irrigation and Drainage Congress pian and carry though an active campaign for the spread of all such information; that the College Extension Division be requested to take active supervision of this work; that the assistance of the Farm Bureaus, the "Utah Farmer" and the various irrigation companies be enlisted in this work, as well as such other energetic means as will give each farmer a practical knowledge of the best irrigation methods.

V

WHEREAS, we have been called into the great war in defense of justice and humanity and have pledged our every energy and resource in this great cause, and

WHEREAS, the prevention of all waste is an essential factor in this struggle, and we have had emphasized anew the responsibility of the farmer as the food producer of the nation,

NOW, THEREFORE, BE IT RESOLVED that the Utah Irrigation and Drainage Congress, individually and as a body, pledge itself and its members to assist in the conservation of irrigation water generally, and especially the flood waters of our streams which have heretofore been largely wasted and lost.

VI

WHEREAS, it is apparent that the legal definition of "beneficial use" of water has not always limited the amount of water to the minimum amount which might be dictated by the best irrigation practice,

NOW, THEREFORE, BE IT RESOLVED that the Utah Irrigation and Drainage Congress co-operate with like organizations of other states, and that to this end a standing committee on inter-state Affiliation be appointed by the President of this Congress and the President is hereby authorized and directed to use such other and further means as may be necessary in the premises.

VII

WHEREAS, the success of irrigation throughout the State depends on the co-operation of the irrigators with each other and with the State and National Governments.

NOW, THEREFORE, BE IT RESOLVED that the Utah Irrigation and Drainage Congress pledge for itself and its members its whole-hearted support and co-operation to State and National Governments, and at this time particularly pledge its earnest assistance to the Water Rights Commission of Utah.

Respectfully submitted,

John A. Widtsoe, Chairman,
H. A. Christensen,
W. W. Owens,
J. W. Paxman,
Jas. Meekie,
D. D. McKay,
L. R. Martineau, Jr., Secretary
Committee.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE

also other Bunches or Swellings. No blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. $2.50 per bottle delivered. Book 3 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. $1.25 a bottle at dealers or delivered. Book "Evidence" free.

W. F. YOUNG, P. D. F., 142 Temple St., Springfield, Mass.

Don't Waste Grain on Your Hogs

How much feed is given to your hogs that should be used for human consumption? Stop this waste of grain. Order a supply of

High Protein Tankage

and watch the results in your herd. This highly concentrated feed promotes a healthy and sturdy growth. Feed it along with other feed.

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OGDEN, UTAH.

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $20 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

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UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

HEREFORD BULLS
At Auction Sale

Twin Falls Registered Livestock Association

Sells at the McMaster Sale Barn, Twin Falls, Idaho

Tuesday, March 12, 1918

50--HEREFORD BULLS--50

Ages 12 to 24 months, old enough for immediate service, weighing from 800 to 1200 pounds.

By an arrangement with some of the best breeders of Hereford cattle of Iowa, Missouri and Ills., we are enabled to bring to you this great offering of high class bulls of the choicest breeding and of such individuality and quality as will please the most discriminating buyer. They are the big boned, productive, beefy type, that give satisfaction.

Don't miss this great opportunity of attending this sale of the best lot of herd heading Herefords ever offered at auction west of the Rockies. Everyone registered and good enough to head any herd. Stockmen in need of bulls will appreciate this opportunity when they see this herd.

SALE WILL COMMENCE PROMPTLY AT 12:30 P. M.

Terms: Cash, or time by special arrangement before sale.
Hereford Headquarters: Rogerson Hotel.
All bulls will be cared for on ranch for thirty days if desired.

C. A. McMASTER, Sales Manager.

Walters and Clayton, Auctioneers **T. F. Warner, Clerk**

A few Shorthorn bulls will be offered. Also Reg. Percheron and Belgian Stallions and Mares.

WRITE SALES MANAGER FOR CATALOG.

SECOND LIVESTOCK MARKET OF THE WORLD

Livestock shippers of the present day are among the most intelligent and shrewd business men of the country and when ready to go to market they compare prices and facilities to be had at the various markets. For this reason it is well to mention some of the advantages of the South Omaha market.

In the past thirty four years this market has enjoyed a steady growth which has been unprecedented in the history of any livestock market until today it stands second as such a market in the country, offering unexcelled facilities, with its quota of wide awake commission men, and four large and six smaller packing plants creating a large demand for fat stock. Its location in the center of the corn belt makes it the largest feeder market for all classes of stock not desirable for slaughtering purposes.

Nine of the largest railroads accomodate this market, offering ideal shipping facilities.

It is evident from the records that western shippers have found this the proper market as the year 1917 shows that this market handled more range cattle and sheep than any other.

Below are some interesting figures showing receipts at the South Omaha market for

One Day—Cattle	961	Cars	25029	Head
One Day—Hogs	476	Cars	34144	Head
One Day—Sheep	236	Cars	63714	Head
One Day—Horses	124	Cars	3667	Head
One Day—TOTAL	1169	Cars		
One Week—Cattle	2325	Cars	62112	Head
One Week—Hogs	1942	Cars	132553	Head
One Week—Sheep	713	Cars	199836	Head
One Week—Horses	270	Cars	5419	Head
One Week—TOTAL	3267	Cars		
One Month—Cattle	8985	Cars	250256	Head
One Month—Hogs	6035	Cars	441104	Head
One Month—Sheep	2660	Cars	740242	Head
One Month—Horses	570	Cars	11389	Head
One Month—TOTAL	12992	Cars		
One Year—Cattle	64388	Cars	1719822	Head
One Year—Hogs	43387	Cars	3116820	Head
One Year—Sheep	12754	Cars	3268279	Head
One Year—Horses	2415	Cars	59645	Head
One Year—TOTAL	116949	Cars		

HAM MOUSSE

Dissolve one tablespoonful of gelatin in one cupful of boiling water or stock, and add two cupfuls of finely chopped cold boiled ham. Season with half a teaspoonful of mixed custard, a few grains of red pepper, and a pinch of salt; add half a cupful of whipped cream and divide into wet molds. Chill, remove from moulds, and garnish with watercress or parsley.

DAIRYING

THE VALUE OF DAIRY COWS AFTER THE WAR

With 30,000,000 Dairy Cattle Slaughtered in Europe to Provide Beef for the Fighting Men, and Thousands Killed Off in U. S., World Faces Huge Shortage.

Every Promising Heifer Calf Should Be Raised.

Since 1914, when Prussian militarism applied the torch to civilization, Europe has had vast armies in the field. The total number of men under arms was estimated recently as approaching 13,000,000.

Europe has had to feed these men —has had to give them good food and as much of it as could be got together. Every available source of food supply has been drawn upon with reckless abandon. Everything has been sacrificed for the armies.

Millions of dairy cows—the good with the poor—have been slaughtered to provide beef for the fighters. So great has been the consumption of meat at the front that the shorage of dairy cattle in Europe is said now to approximate 30,000,000, more than one and a half times the total number of dairy cows in the United States.

And the war goes on—will go on until the menace of Kaiserism has been dispelled. When that glad day will come no man can say. It may be a year, two years, three years.

The war is now in its fourth year. If the world is 30,000,000 dairy cattle short, how many millions short will it be when peace is restored, considering also that America is arming her millions—and these must be fed?

The Meaning to the American Cow Owner.

What does this signify for the American breeder of dairy cattle?

It can signify only one thing, and that is that dairy cattle are going to be in greater demand when the war is over than ever before—that dairy cattle are going to bring better prices than ever before. Not as beef, but as producers of milk and butter-fat.

If there ever was any doubt about the tremendous importance of milk and butter-fat as human food, that doubt has been erased by the war. Among the belligerent nation the infant mortality ranges from 40 to 98 per cent, seeming to vary in direct proportion to the amount of milk available. It has been found that the best food for fighting men—even as for working and thinking men—is milk and butter-fat. The trenches are clamoring for milk. Thousands of tons of condensed milk are being shipped to our troops overseas and to our allies.

The peace-time demand for milk and butter-fat will be as great as if not greater than the war-time demand.

How is this demand going to be supplied? Where is Europe to look for its milk or the cattle to produce the milk? To the United States. Our lands have not been overrun. Our farms are unmolested.

In a recent address before the American Feed Dealers' Association, C. A. Chapman said: "It is reported that the French government alone is contemplating the purchase of 1,000,000 head of cows over here as soon as peace is declared."

Is America Ready?

Are we prepared or preparing to meet the demand for dairy cattle? Our foremost dairy authorities are afraid we are not. They are afraid that too many dairy cow owners have been short-sighted enough to allow the high prices being paid for all kinds of cattle for beef to cloud their vision of the immensely greater returns to be enjoyed from their dairy cattle when [illegible] over.

High prices of beef, high prices of [illegible] the high wages being paid labor have caused thousands of unwilling farmers to sell their dairy cattle to the butcher, declaring they cannot afford to raise them.

True, there has been some commendable weeding out of scrub cows. Dairy experts are gratified to see that economic conditions have been conductive to the carrying-out of the advice they have been giving for years —to get rid of dairy cattle that fail to produce and replace them with cattle which yield a good return.

But two questions have been raised. How many good cows have been sacrificed? Where poor cows have been killed off, have they been replaced by promising heifer calves?

Answering the first question, dairy authorities say that thousands of productive cows have been slaughtered for beef. Replying to the second question, they are urging farmers everywhere to raise every promising heifer calf and keep enough pure-bred bull calves to insure a generation of good cattle. All the agricultural journals are full of the subject.

Three Years Necessary to Raise Dairy Cows.

It takes all of three years to breed, raise and bring a dairy cow to serviceable age.

Are we preparing for three years ahead?

Were every dairyman in this country to resolve now to head his herd with a good sire and raise to maturity every heifer calf possible, the supply of dairy-bred females would be none too great to fill the demand sure to come. The far-seeing dairyman is shrewd enough to recognize that although raising a good calf under present conditions is expensive, nevertheless it is a profitable venture, for he who owns good cows three years from now will have property representing large, quick assets.—De Laval Monthly.

SHOWS HOW TO ECONOMIZE IN BEEF COW FEEDING

Winter feed costs may be largely reduced, without detriment to the cows or calves, through greater use of farm by-products in rations.

Avoid feeding excessively, avoid costly rations, use more cheap roughages, such as straw and corn stover, feed silage where conditions make it more economical than corn fodder.

Government officials have made an investigation.

The first farm used as an example is in east central Iowa. The breeding herd consisted of a grade bull and 22 grade cows, from which 20 calves were obtained. The cows were given excessive amounts of high-priced feed for both of the years for which records were procured.

They were turned on stalks November 15. Winter feeding began a few days later and lasted until May 1, when the cows were again turned on pasture. During the 165-day interval each cow received the following:

Stalks 1 1-5 acres, at $1 an acre.
Fodder 2-5 acre, at $35 an acre.
Mixed hay ¾ ton, at $10 a ton.
Corn 2 bushels, at $0.65 a bushel.

As the average yield of corn on this farm was 50 bushels to the acre, and as the best corn was cut for fodder, the cows, considering the corn in the fodder and the additional grain fed, received a total of 22 bushels per head. This is almost a fattening ration. If the corn had been husked from the fodder and only the stover fed, there would have been sufficient roughage for the cows. Estimating that three-fourths of a ton of stover was eaten per acre of stalks and that the stover from the fodder fed would go 2 tons to the acre, and allowing the cows 3 bushels of corn each during the winter instead of 22, they would receive the following daily ration:

Stover, 20.6 pounds.
Mixed hay, 9.0 pounds.
Corn, 1.0 pound.

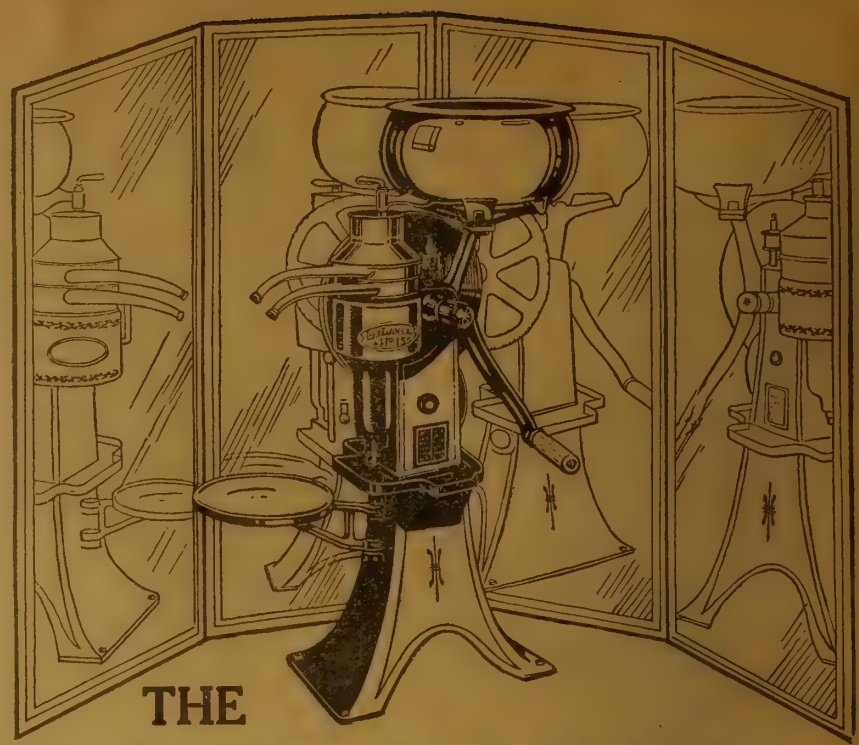
This ration would be sufficient for their needs.

By merely eliminating the excessive amount of corn (19 bushels) from the ration a saving of $11.40 could have been made and the feed bill reduced very nearly one-half, or from $24 to $12.60 per cow.

Satisfactory Rations Cited.

Rations on the fifth farm inspected by the investigators are pronounced very satisfactory. To illustrate how a farmer may grow emergency forage crops to take the place of hay when the hay crop is a failure.

This farm (240 acres) is in northeastern Kansas. Seventy acres were in corn, 25 in oats, 25 in wheat, and 100 in pasture. Because of the unusual rainy weather prevailing in that section the oats and wheat for the year in which the record was taken were practically destroyed and the straw was absolutely worthless for feeding. To provide for a lack of hay 15 acres



THE

NEW DE LAVAL

CREAM SEPARATOR

Every Reflection Shows Perfection

VIEWED from every angle, the De Laval is distinctly in a class by itself. It has a business-like appearance. It looks as if it were well made, and it is. It looks sturdy, and it is. There is no make-believe about it anywhere, from the wide-spreading substantial base to the solid, seamless, symmetrical supply can.

It's no wonder that big dairymen and creamerymen who have for years made a careful study of dairy methods and machinery refuse to consider any other separator but the De Laval. They know that from every angle—clean skimming, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

They know that it has a record of 40 years of service behind it. They know that it can be depended upon. They know that they can't afford to take chances with any other cream separator—

And neither can you.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR COMPANY

165 Broadway, New York 29 E. Madison Street, Chicago

EVERY NEW DE LAVAL IS EQUIPPED WITH A BELL SPEED-INDICATOR

DRINK BECCO BETTER THAN BEER

For entertaining friends---for the family---with meals or between meals---any time! There's no beverage that quite "hits the spot" as does BECCO---the true, pure food beverage.

If your dealer hasn't BECCO---order direct from

G. L. BECKER, Manufacturer, Ogden, Utah

of millet and 4 of sorghum were grown.

The herd consisted of a bull and 15 grade cows, from which 15 calves were obtained. The cows were turned on stalks November 1 and allowed to run there until spring. They received approximately 3 acres of stalks, 1 ton of millet hay, and one-third of a ton of sorghum fodder each. Valuing the millet at $4.50 a ton and the sorghum at $4 a ton, the winter feed cost per cow was $8.20. The cows were carried through the entire year for a net cost of $25.85.

Farmers who raise their own feeder cattle should take more pains to find out the needs of their animals and feed them accordingly.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
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MILLER-CAHOON COMPANY
General Agents
Idaho Falls, Idaho Murray, Utah

Men Mechanically Inclined, Your Services Are Needed.

NEVER before has the demand for Automobile, Tractor, Truck and Aeroplane motor Mechanics been so great. Your service is needed in the Army, driving and repairing Trucks and Ambulances; in the Aeroplane section repairing motors; on our farms using Tractors; besides, remember that this country has 4,000,000 Automobiles. Thousands of mechanics who formerly took care of them are in the Government service. **Somebody must take their places.** It is up to you to take the places in the garage, etc., of the men that must go. **Realizing** these conditions I have made preparation to train men to fill these important positions. The demand for men is here. I am ready to train them. If you are in the draft come here and **be trained** so that you can give a **special** service to your Country.

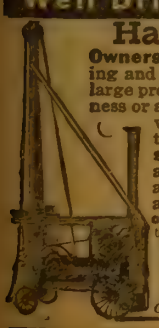
WRITE FOR FREE CATALOGUE.

I have written a catalogue that shows pictures of all departments and describes my school. I want you to have it. It will tell you how I teach the Automobile, Tractor business; open your eyes to the opportunities for splendid positions at good money. This Country **must** have trained Mechanics. Take advantage of present conditions, **write for my free catalogue**; it's a trip through the greatest school in the world. Today is the day of oppportunities, grasp them.

E. J. SWEENEY, Pres.,
Sweeney Automobile & Tractor School,
508 Union Station Plaza, Kansas City, Mo.

Send for NEW CATALOG Well Drilling Machines

Have a Business



Owners of "AMERICAN" Well Drilling and Prospecting Machines make large profits either as a regular business or a side line. The demand for wells is large, and from our extensive line comprising **59 styles** and sizes, we can select a machine suitable for almost any locality or formation, and arranged for almost **any kind of power.** Write for new illustrated catalog No. 145, **Free**

THE AMERICAN WELL WORKS
General Office and Works:
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Chicago Office: First Nat. Bank Bldg.

Big Money in Running Water

Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an

One Man One Team

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circulars showing different styles.

Lisle Manufacturing Co.
Box 976 Clarinda, Iowa

If you want the best in Butter Wrappers send in your order to The Utah Farmer TODAY.

THE FEEDING VALUE OF SKIMMILK

By Prof. E. H. Farrington.

Some of the old familiar arguments in favor of keeping cows are:

1. The dairying, especially selling cream or butter, increases the fertility of the soil, because by raising crops and feeding them to the cows, the fertilizing constituents of the soil do not leave the farm, as is the case when crops are sold in bulk.

The fertilizing constituents contained in a ton of butter are worth about 50c, while each ton of hay, corn, oats and some other crops when sold from the farm remove about $5 worth of fertility.

If the value of a ton of butter (now about $1,000) is compared with the value of a ton of hay, one will see that the soil of the farm will be much more exhausted and the income received will be much more reduced by selling hay and other crops from the farm than by selling cream and butter.

2. The waste land, such as the rocky hills, the marshes, and the timber lots, can be pastured and the vegetation growing on them converted into milk if cows are given an opportunity to utilize these portions of the farm that otherwise would bring in no income.

3. The small cost of transportation of high-priced cream and butter as compared with many of the farm crops is an item of considerable importance to the farmer.

4. The dairy farm can furnish profitable employment for labor throughout the entire year, as the help used for raising crops in the summer may be retained for feeding and caring for the cows during the winter.

5. The steady, cash payments received for cream are certainly appreciated by every farmer, and doubtless this is one of the strongest inducements for the keeping of cows which will convert the feeds raised on the farm into high-priced, cash products.

6. The especially high feeding value of skimmilk, which at the present time is worth at least $1 per hundred pounds for feeding pigs, chickens and calves, is something that should appeal to every farmer who has an interest in his own welfare.

Feeding experiments have demonstrated in recent years that there is no substitute for skimmilk on the farm, and that dairymen cannot afford to sell it at any price if they want to develop normal and profitable calves, pigs and chickens.

SOLVING THE FARM-LABOR PROBLEM

Clarence Onsley.

In considering the farm-labor question—one of the most perplexing and difficult of the agricultural problems brought about by the war—it will be wholesome and clarifying, in the very beginning, to face quite frankly the meaning of "solving" that problem.

What the Nation is trying to do—what the Nation must do—is to maintain and increase food production, because unless it is maintained we can not feed our armies and our civilian population, we can not send food to the allies. If we don't do these things we can't win the war. The farms must be supplied with labor in order to produce these crops. So, our objective, in dealing with the farm-labor situation, is to insure the production of war-winning foods crops.

The most general complaint of farmers, as far as the labor situation is concerned, has been that the supply of skilled farm labor, of experienced farm help is altogether inadequate. Which is, unfortunately, absolutely a fact. And so, in thinking of "solving" the problem there has been a tendency to imply the securing of all the experienced farm help the farmers can use. That would be an ideal condition, but it is not at all possible. This is not a normal time. It is the most abnormal period the earth has ever known, and in every field of human endeavor we are finding it necessary to overtopple old traditions and upset calculations based upon conditions of the past. We can't "solve" the farm-labor problem upon the basis of the olden days of abundant supply, when it was possible to pick and choose as much as one pleased and when it was fairly easy to secure just as much experienced farm help as one desired.

What we can do is to apply to farm labor in the country, to the extent that individuals are willing and other circumstances permit, to divert to agricultural activity labor now appiled in nonessential work, to develop a new supply of semi-skilled farm labor—high school and other boys who in training camps will be put through intensive courses in the fundamentals of farm work—and finally, as conditions may make necessary in any community, to use unskilled farm help—volunteers from towns and cities.

By these and similar emergency measures we can "solve" the farm-labor problem—that is, we can accomplish the objective of producing war-winning food crops. But we will not, by these or any other measures short of magic, "solve" it, in the sense of producing all the skilled and experienced farm help that everyone desires.

It will be difficult to increase our crop production with some unskilled labor. It will be a hardship upon the farmer. Also it is a hardship to a man to have his head blown off with a bomb. Of course, the farmer prefers to have experienced farm help. Likewise there are quite a few men who would like very much to have the arm or leg lost fighting for the freedom of the civilized world—which means the freedom of your farm where today you desire to have experienced farm help only.

The same war that requires of farmers patience with unskilled help, and increased production despite that handicap, requires of other men—their lives or their eyes or their limbs.

When one becomes discouraged or petulant at the prospect of having to produce increased farm crops with decreased skilled labor, it will be well to remember the men who are paying a stiffer price than that for victory—and who are doing it unfalteringly.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

THE CULMINATION OF SEPARATION

UNITED STATES LIGHTING PLANTS

Quick Light Day or Night

Daylight all time in the home. Will wash, churn, fan, toast, supply electric flat iron, save hundreds of steps, provide water all over the house. Operating cost low. A comfort and a joy.

Perhaps you don't know how little it costs to install one of our outfits
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Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checing **Account with this Bank.** Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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Devoted to Agriculture in the Rocky Mountain Region.

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Established 1904.

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Subscription price, one year.....$1.00
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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Have you purchased all the seeds you will need this year. This is more important than some realize.

A good vegetable garden this year is essential to good living in maintaining one of them you are providing good food and performing a patriotic duty as a citizen.

Have you tried to estimate the amount of waste on your farm during the year. Often this would feed a pig or two or a flock of chickens. Turn your waste into profits.

Start your tomato and other seeds now so that you can transplant them a time or two before putting them out in the ground. It means earlier crops and a longer ripening season.

When you answer any of the advertisements in the Utah Farmer always tell them where you read their advertisement. A good way is to say: I saw your advertisement in the Utah Farmer.

Are you going to buy a tractor this year. Now is the time to order it. Satisfy yourself as to which one you want to buy and place your order now. Later on you may have to wait for it and at the very time when you need it.

When you answer any of the advertisements or when you purchase from the local merchant always mention the Utah Farmer. In doing this you are protecting yourself, helping the publisher of this paper and also the advertiser.

In many places the railroad right-of-way should be planted. Farmers who have land adjacent to the line, should be given first choice. Why not take it up with the local agent and see what can be done about farming any tillable land on th railroad right-of-way.

One of the joys of living is a good vegetable garden. It will help to provide for the table those things that will save the wheat and meats, then we can export more food to our allies. A very important thing about the vegetable garden is to secure your seed now. Use only the very best you can buy.

The man who makes money from any farm practice is the one who is in the game all the time. He does not sell out or change when markets go up or down. He emphasizes some one branch of farming—knows all about it.

Why not apply the "clean plate" rule in feeding your livestock. See that they eat all the food you give them—that none goes to waste. Provide a good feeding place, do not throw it on the ground where it will be wasted. Feed is too valuable and none should go to waste.

KEEP FARM RECORDS

Have you talked with the income tax man about how much you should pay this year. You may know and you may not know how much you ought to pay. If you are assessed a little high according to your idea of figuring it, because you have no definate figures, you will keep records this year of all you do, the cost of producing your farm crops.

Farmers may be forced, for their own protection, to keep records. Farmers who have kept a careful record of last years work will have little trouble in filling out the income tax blanks.

We recommend a simple record showing all money paid out and all received. A system that can be used in keeping an accurate account of all farm operations. The sooner that farmers start to keep such records the better. The income tax may prove to be a good thing for the farmer after all.

FEEDING HOGS

We have been asked to increase the number of hogs on every farm, are we doing it? Is this feed problem holding you back? We are living under new conditions, what may have been a good method yesterday is changed today. We must meet the hog feeding problem from a new point of view. new conditions. This does not mean that there will be a decrease in the number of hogs, because they are needed and some one is going to produce them at a profit with the feeds we are able to secure.

Expensive feeds are not always necessary, we have not all learned the value of such feed as alfalfa, which can be grown so successfully here. Alfalfa pasture, ground alfalfa should be used. It is one of the most economical hog feeds. To make a balanced ration of the feed you have or can secure at a reasonable price is the problem for all hog growers to solve.

INTERFERING WITH PRODUCTION

Any one that will interfer with the increased production of foods at the present time can only be considered unpatriotic.

There is no half way place in this great crisis. We are either for or against the government and any one who does by indirect or direct methods, influence people to curtail the production of their share of the food necessary to win this war is a slacker and unpatriotic and some method should be taken to stop them.

The time is passed when any one should be permitted to talk against the government or the officials of the government.

We need wheat, meats and sugar. These are the three most important foods the government is asking for, and they are looking to Utah and Idaho to do their share in the increased production of sugar. The farmers and the factories have agreed upon prices for this year and every one should now work for the greatest crop of sugar beets every produced. Anyone who interfers and curtails production is unpatriotic.

INCREASE THE YIELDS PER ACRE

One of the best ways to increase the crop yield for war time needs is to increase the yield per acre. To do this several things enter into the problem. Soil fertility, the better and larger use of manure. Crop rotations must be practiced. Drainage of wet lands must be done in some sections. Every effort to increase crop yields must be utilized. Every farmer must make a study of every field on his farm. How to better cultivate, irrigate and any other thing else that will help to get better yield per acre. With the present prices any one can afford to spend more time to get better results. Time and money spent for manure will bring good returns. The labor shortage can be partically over come by working for a better yield per acre, rather than increases in acreage.

WE NEED MORE POULTRY

Are you preparing for the increased production of poultry this year. Farmers need not go into the poultry business on an extensive scale but he should plan to produce enough for his own use and some to sell. The farmer should be able to produce poultry at a lower cost than the city man who has to buy all his feed and has not range on which to run his chickens. There is much waste feed on the farm that a flock of poultry will turn into a profit if properly handled.

If you have not already started commence now to increase your poultry this year.

Start early to do your hatching, the sooner the chicks are on their way to maturity the better. Give the children some responsibility and let them do the work. Poultry is one way to increase our food production and at the same time help your income.

Right now is the time to get busy with the incubators, brooders and setting hens. Give the poultry house a good cleaning out and use a good disinfectant to destroy all pests of any kind.

INSPECTION AND REPAIR WEEK

Next week is the time when you should look over all your machinery, implements and tools and find out what you will need in the way of extras and repairs. Machinery is going to be a big help to the farmer this year, see that yours is in good working order.

Co-operation between farmer and dealer will be profitable if repairs and machinery are ordered now. Delays are always dangerous, much more so during war times.

There is no prospect of a decline in price at the present time so this should not hold you back from ordering repairs or needed machinery.

Now while you have time, before the spring work is on, put your machinery in good shape. Tighten bolts, sharpen tools, clean and repair every implement you will use during the spring and summer.

Better care should be taken of our machinery, do not let it rust out, but keep it bright, well painted and in good running order. Every farmer is enlisted in the service of our government for increased production. This is one way to help by properly caring for your machinery and making it do its full duty this year.

POTATOES AND PATRIOTISM

We have a large surplus of potatoes. Conditions are not very favorable for the marketing of them. Lack of cars and poor transportation means a loss unless something is done to help the situation.

We are asked to use wheat substitutes. Potatoes can be used and we will be doing too things to help the food situation. First by using more potatoes we will be able to save more wheat for shipment abread, which will be a patriotic duty. Second by using more potatoes in bread making and any use as a food we will help to find a market for a food product that will be wasted unless it is used within the next few months.

Potatoes can now be purchased at a very reasonable price from the farmer and this should stimulate local consumption where people have to buy all their food stuff.

Very good bread is being made with a 20 to 30 per cent potato substitute. There are so many ways that potatoes can be served, with a little planning the use of potatoes could be increased, which would help save a possible loss, and would also save the wheat for export.

NEW WORKER IN DAIRY DIVISION

Will Organize Bull Association.

Mr. F. W. Kehrli, for several years Dairy Extension Agent in Eastern Oregon in connection with the Dairy Field work carried on by the Oregon Agricultural College and the Dairy Division of the U. S. Department of Agriculture, has been transferred to the Western Office of the Dairy Division. Mr. Kehrli has recently spent several months in the Eastern and Southern States investigating the co-operative bull associations in communities where these organizations have been in operation for a number of years. He is firm in the belief that these organizations will serve as an important factor in the development of breed centers in the various dairy districts in the west. The work of organizing such associations will be taken up by Mr. Kehrli in the states covered by the Western Office of the Dairy Division.

The purpose of co-operative bull associations is to bring about the sure and rapid improvement in the dairy herds of the members. This aim is sought principally by the purchase and joint ownership, use, and exchange of high class, purebred dairy sires; by selecting the best dams; and by proper treatment of the offspring. The principal advantages of this form of organization are that members with limited means are enabled to use the best sires at a minimum cost; and bulls of outstanding merit, as shown by the production records of their daughters, are preserved to the community for the entire period of their usefulness.

Mr. Kehrli was instrumental in organizing the Hermiston Jersey Breeding Association at Hermiston, Oregon. This Association was the first organized in the Western States and is now starting on its third years work, with five Jersey bulls of excellent breeding, three of them being from the well know Ed. Cary herd.

The organization of these associations will be carried on similar to the cow testing associations, in direct co-operation with the Extension Offices of the various Agricultural Colleges in our Western States. Should any one desire further information regarding this work, write the Western Office of the Dairy Division, 318 Federal Building, Salt Lake City, Utah.

THE FARM MACHINERY SITUATION

(Continued from page 1)

view of these conditions the user can render a real service by placing his orders early. Here is a chance for unselfish co-operation between manufacturer, dealer and farmer, which will insure a sufficient supply of machines for the production of this year's crops. This step will also help to relieve the transportation situation later in the year.

Order Repairs Now.

We have been in the habit of ordering repairs by telephone or telegraph and having them delivered promptly by parcel post or express. The present and probably continued congestion of the mail and express service makes it almost a certainty that many costly delays can be presented this season if repairs are ordered early. Every machine should be gone over and the parts needed be listed. List broken parts, worn parts and parts which are known to wear out or break. Then place an order for the same immediately. A machine with one part broken is generally useless. Breakdowns at the best cause exasperating delays. To reduce these delays to the minimum, a small outlay for repairs may prove to be a very profitable investment.

When through using a machine the coming season go over it carefully and list the repairs which will be needed for another season on a tag attached to the machine. Take a copy of this list to your dealer and place an order for the parts. This will insure the receipt of the repairs so that they can be put on during the winter and the machine put in condition for the next season.

QUESTION AND ANSWER

Fruitland, Utah.

Utah Farmer:

I would like to know if you have any information in regard to the feeding value of potatoes in comparison with wheat rye or barley.

We have lots of potatoes in the basin here and not much market.

What could one pay for potatoes per pound with grain at 2 cents per pound the same to be fed to hogs.

What would be their value for cattle.

Very truly yours,

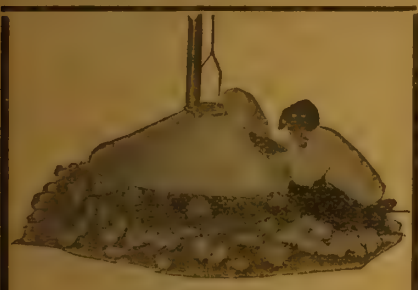
R. U. James.

....Answered by Dr. W. E. Carroll.....

Feeding experiments indicate that from 4½ to 5 pounds of potatoes will take the place of 1 pound of corn in feeding hogs. The potatoes, however, should be boiled or steamed and fed mixed with other grains. In cooking the potatoes, steaming is the best plan if that is feasible, and if not just enough water is added to prevent burning during the cooking process. Some grain will be found necessary in addition to the potatoes and if the animals have access to alfalfa hay it will be so much the better.

Potatoes can be cut and fed raw to cattle though they are not considered to have any exceptional feeding value. They can be fed in small quantities to dairy cows, though if fed too long or in too large quantities the color and texture of the butter made from such milk are undesirable. The flavor of the milk itself is some times influenced undesirably.

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.



The Standard Brooder

Grows Three Chicks Where One Grew Before

Here's the most remarkable brooding device that was ever invented. It saves all the chicks and eliminates all the trouble.

It burns coal instead of oil!

It is self-feeding, self-regulating, simple, safe and everlasting.

Guaranteed operating cost less than six cents a day and it will brood as many as a thousand chicks at one time.

Write today for Free Catalog giving full details.

PORTER-WALTON CO.
Salt Lake City

TACKLE BRANDED

Shows quality under every test.

Veribest TRADE MARK

It's sold by a dealer in your town.

STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.
Wholesale Only

S.P.5

WITTE
Kero-Oil Engines
Twice the Power at Half the Cost
Sizes 2 to 22 H-P.—Select Your Own Terms. Direct from Factory Prices. Write Today for Free Catalog. Save $15 to $200. Prompt Shipments. Engines Ready to Install. Ship by Return Mail Prepaid.
Write Today
WITTE ENGINE WORKS
2069 Oakland Ave., Kansas City, Mo.
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Save $15 to $200

THERE'S WORK EVERY DAY ON ANY FARM *for the*

MOLINE UNIVERSAL TRACTOR

"It Solves the Farm Help Problem"

YOU can make more money with the Moline-Universal than with any other tractor because it can be kept at work more days a year—no matter how large or small your farm or what crops you grow. The Moline-Universal is built to fit the farm and every operation on the farm. You can find work for it every day in the year.

If for no other reason than the fact that the Moline-Universal can be kept busier on any farm than any other tractor it is your "best buy."

But the greatest advantage of the Moline-Universal is that one man controls both tractor and implement in all operations. You control the entire outfit from the seat of the implement, where you must sit in order to do good work.

The wonderful versatility and one-man control of the Moline-Universal are due to its two-wheel construction. It attaches direct to the implement and forms one compact unit. All weight is placed on the two big drive wheels—all of it goes into the pull. There is no dead weight to carry around. That's why the Moline-Universal, weighing only 2850 pounds, can pull as much as tractors weighing from 1500 to 2000 pounds more; does not pack the soil; requires the least amount of fuel for operation; turns in a 16-ft. circle and backs as readily as it goes forward.

The Moline-Universal Tractor is the crowning achievement in a half century of manufacturing experience and is built by a company of unquestioned integrity and a world wide reputation as makers of quality farm implements.

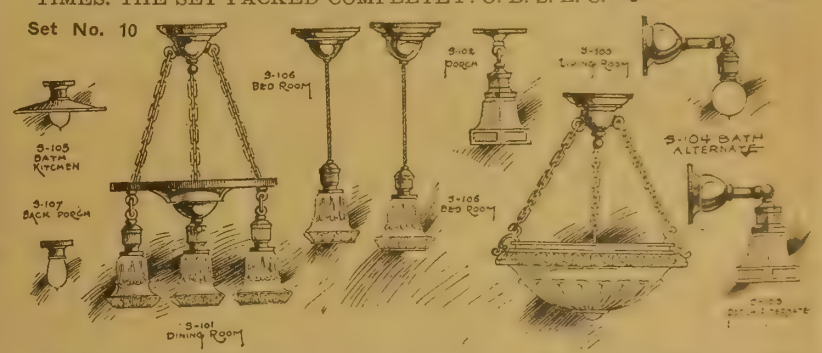
Why not let the Moline-Universal help you this spring? Write for free illustrated booklet and name of your nearest Moline dealer.

Address Dept. 33

MOLINE PLOW COMPANY, MOLINE, ILL.

THIS FIVE ROOM UP-TO-DATE SET OF LIGHTING FIXTURES WILL APPEAL STRONGLY TO THE ECONOMICAL BUYER IN THESE THRIFT SAVINGS TIMES. THE SET PACKED COMPLETE F. O. B. S. L. C. $27.25

Set No. 10



FIXTURES ARE FINISHED IN SATIN BRASS, WIRED AND READY FOR HANGING. FIXTURE NO. S-100 WILL BE FURNISHED IN PLACE OF NO. S-101 IF DESIRED. WHEN ORDERING BE SURE AND GIVE CEILING HEIGHT.

EARDLEY BROS. CO., 37 EAST 1ST SOUTH ST. SALT LAKE CITY

Everything for Electricity. Send for Catalog of Fixtures and Supplies.

WAIT UNTIL CONFERENCE WEEK TO BUY YOUR FURNITURE.

We can offer you a substantial saving on any furniture you may need. We can fit your needs from cellar to garret and save you big money. We do not publish a catalogue—

BUT WE PAY THE FREIGHT

to any point in the Inter-mountain country on the R. R. The choice furniture available will effect you a saving sufficient to make a shopping visit here worth your while.

AXELRAD FURNITURE CO.

42 West Broadway, Salt Lake City. Was. 983 Phone

HOME

PLENTY OF POTATOES

They Are A Splendid Food.
Excellent For Your Body.
Delicious When Well Cooked.

What They Do For Your Body

They are good fuel. They furnish starch which burns in your muscles to let you work, much as the gasoline burns in an automobile engine to make the car go.

One medium-sized potato gives you as much starch as two slices of bread. When you have potatoes for a meal you need less bread. Potatoes can save wheat.

They give you salts like other vegetables. You need the salts to build and renew all the parts of your body and to keep it in order.

Potatoes At Their Best.

An old king is said to have tested each cook before hiring him by asking him to boil a potato. Even the best potato can be spoiled by a poor cook.

To boil them so that they will be "fit for a king," drop the unpeeled potatoes into boiling salted water and cook 20 to 30 minutes. Drain the water off at once. If they are cooked too long or allowed to stand in the water they get soggy.

If you peel the potatoes before cooking them you will waste time and potatoes both. You may throw away a sixth or even a quarter of the good part of the potato with the skins. Also, if the potatoes aren't covered up by the skins while cooking, some of the valuable material will soak out into the water. Even very small potatoes can be economically used, if they are boiled in their skins.

For best mashed potatoes. Peel the boiled potatoes, mash and beat until very light, adding salt, butter or oleomargine and hot milk, a half cup of milk to six potatoes. If dinner is not ready to serve, pile lightly in a pan and set in the oven to brown.

Potatoes are good in breads. Get Farmers' Bulletin No. 807, "Bread and Bread Making in the Home," from the Department of Agriculture, Washington, D. C., to learn how to make potato yeast bread.

Potato Corn-meal Muffins.

2 tablespoons fat, 1 tablespoon sugar, 1 egg, well beaten, 1 cup milk, 1 cup mashed potatoes, 1 cup corn meal, 4 teaspoons baking powder, 1 teaspoon salt.

Mix in order given. Bake 40 minutes in hot oven. This makes 12 muffins. They are delicious.

Potatoes are good in cake. They are often used in this way to keep the cake from drying out quickly. Mash the potatoes and beat up with milk until very light. You can use your usual cake recipe, substituting one cup of mashed potatoes for one-half of milk and one-half cup of flour.

Potatoes For Your Main Dish.

Potatoes, left over or fresh, may be combined with cheese or nuts or meat or other material, often to make the main dish of a meal.

Potato Sausages.

1 cup mashed potatoes, 1 cup ground nuts, fish or meat, 1 egg, well beaten, 1½ teaspoons salt, ⅛ teaspoon pepper, salt pork, bacon or other fat.

Mix the mashed potatoes and seasonings with the ground nuts, fish or meat. Add beaten egg. Form into little cakes or susages, roll in flour and place in greased pan with a small piece of fat or salt pork on each sausage. Bake in a fairly hot oven until brown.

Scalloped Potatoes and Cheese

Arrange a layer of sliced raw or boiled potatoes in greased baking dish and sprinkle with grated cheese and a little flour. Repeat until dish is nearly full. Pour milk over the whole, about one-half cup to every three potatoes. Skim milk is good. Bake in a moderate oven until done. The length of time required depends upon whether the potatoes are raw or boiled and whether the baking dish used is deep or shallow. Boiled potatoes baked in a shallow dish will take only 20 minutes. Raw potatoes in a deep dish may take as much as 1½ hours.

POTATO BREAD

Josephine Burton.

"We can't afford cornmeal and we don't like it,' is an expression that is on many lips.

"USE WHAT IS AVAILABLE IN YOUR COMMUNITY" Mr. Hoover says. Then why not use more potato bread.

Potato Bread.

(For four pound loaves)

5 cups mashed potatoes, 9 cups flour (Graham, whole wheat or white), 1½ teaspoonfuls salt, 1½ teaspoons sugar, 2 cakes compressed yeast and 4 tablespoonfuls water, or 1 cup yeast (½ yeast if longer process is followed).

Mash potatoes thoroughly and when lukewarm add yeast, salt, sugar and part of flour. Let rise until very light. Add the remainder of the flour and knead thoroughly, making a stiff dough. Let rise till treble in bulk, shape into loaves, and let rise in pan till double in bulk. Bake 45-50 minutes. All the flour may be added at once, but the dough is difficult to handle.

1 2-3 cups mashed potatoes—1¼ cups water and 1 cup flour.

When an abundance of vegetables are served at a meal, bread can easily be omitted.

Bread crumbs and stale pieces of bread are delicious made into puddings or used in scalloped dishes.

Did you ever try serving popcorn with cream soups instead of crackers.

Canning Meat.

A "Feast or Famine" condition often exists where the home raised meat supplies the table. Why not fill your empty jars and enjoy your meat supply longer?

General Directions.

Select only perfect jars, caps and rubbers, sterilize before using.

Meat must be perfectly fresh.

In boiler method, water must cover jars, start counting time when water begins boiling.

Use 1 teaspoonful salt to each quart of meat.

Poultry

Kill fowl and draw at once; wash carefully and cool; cut into convenient sections and pack at once in glass jars; fill with boiling water; add salt; put rubber and cap in position, not tight, and sterilize.

Water bath 4 hours.

5 pounds pressure 3 hours.

10-15 pounds pressure 1 hour.

Remove jars; tighten cover, test joint, store in cool place.

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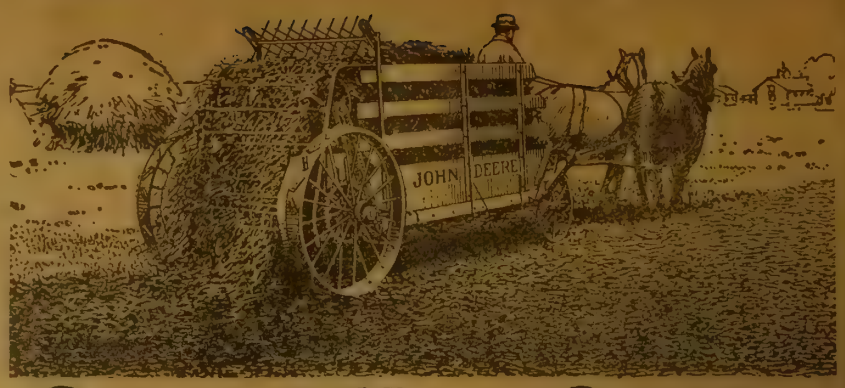


Spread Your Straw Don't Waste it

STRAW has big plant-food value. Utilize it. Let it help you get bigger yields. Use it to top-dress winter wheat, rye and similar crops.

Straw acts as a mulch—prevents winter killing—keeps the soil from blowing away from the plant roots. Straw properly applied will greatly increase your crop yield. Spread your straw with this two-in-one machine. Get a

JOHN DEERE Manure Spreader with Straw Spreading Attachment

This simple attachment on a John Deere Spreader will spread all kinds of straw, short or long, dry or wet, and does a real job. It spreads the straw uniformly, heavy or light, as you desire.

It has this big advantage—it handles perfectly the heavy, partly rotted straw found in the bottom of straw stacks. This is accomplished by loading the partly rotted straw in the spreader bed and light straw on top.

One man can load and operate it. It is easy to load—only 5 feet, 10 inches to top of the rack. It is easy to operate—only two levers. One lever puts both beaters in and out of gear, the other regulates the quantity spread per acre.

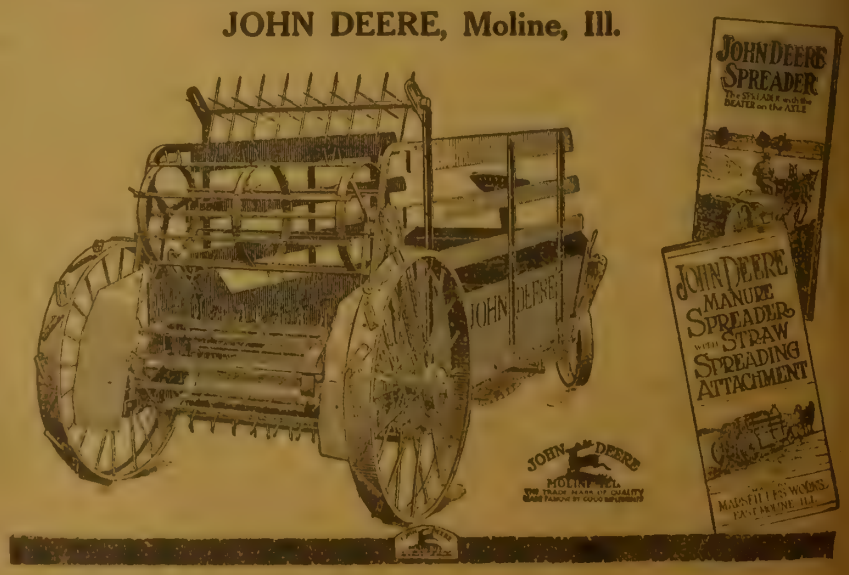
To spread manure take off the straw spreading attachment—a thirty minute job for one man and you have the regular John Deere Spreader, thousands of which are profitably used on farms in all parts of the country.

If you have no straw to spread at this time, get a John Deere Manure Spreader now and get the Straw Spreading Attachment when you need it. This attachment can be furnished for all John Deere Spreaders now in use.

Write for Free Package MX-242

and you will get full information about this wonderful straw-spreading attachment and also a special four-color folder, illustrating and describing the John Deere Spreader. These booklets also tell you all about straw and manure, their fertilizing value, how and when to spread it to get the most out of it. Write today.

JOHN DEERE, Moline, Ill.



Canned Pork.

After animal has been butchered, cool quickly; can only lean portions and keep pork cool for at least 24 hours; using fat to make lard boil or roast for 3 minutes; pack closely in jars in as large pieces as convenient; put rubber and cap in position, not tight and sterilize.

Water bath 4 hours.

5 pounds steam pressure 3 hours.

10-15 pounds steam pressure 1½ hours.

Remove jars, tighten covers, test joint, store in cool place.

Beef can be canned by the same method.

Carp and suckers are delicious canned. The bones will become as soft as the bones in the canned salmon you purchase.

Use more Utah Lake fish—let them do their share in winning the war.

USE VEGETABLES DURING THE WINTER

Everybody Needs Them—Grown People and Children, too.

Don't stop using them in winter even if they are harder to get than in summer.

Doctors say that the tired-out feeling at the end of the winter—"spring fever"—often comes from a lack of fruits and vegetables in the winter diet. Keep the family well and make their meals pleasanter by using vegetables. Give them to children especially. Young children can digest them better if they are mashed and put through a sieve.

The salts or "mineral matter" that vegetables contain is one of your chief helps in keeping your body strong and well.

In every part of your body there are salts somewhat like table salt, but of many kinds—iron, lime and others. Your body won't work smoothly unless it has plenty of these salts, and the children can't build strong bodies without them. You must get them from your food. Vegetables and fruit are rich in them. Eat a variety so as to be sure to get all the kinds of salts you need.

The salts and other substances in vegetables also help prevent constipation. Keep yourself and your children well.

These include cabbage, turnips, onions, carrots, potatoes, etc., which are always good simply cooked, stewed, boiled or baked, and served with a little butter or oleomargarine or a simple cream sauce.

You waste valuable salts when you throw away the water in which you cook vegetables. Sometimes the flavor is not desirable, but if it is good, save the water for soup or gravy. Even better—cook them in as little water as possible so there is none left to drain off. Or bake or steam them.

Cabbage is one of the vegetables that is best simply cooked. It may be poor or it may be delicious, depending upon how you cook it. Don't boil it too long—20 or 30 minutes in salted water is long enough.

The winter vegetables are excellent, too, combined with meats to make savory stews.

Here is a mixed vegetable chowder that is good. It makes a substantial dish. Rice and okra may be substituted for potatoes and carrots or almost any vegetables may be used.

4 potatoes, 3 carrots, 3 onions, 1 pint canned tomatoes, 2 tablespoons fat, or a piece of salt pork, 3 level tablespoons flour, 2 cups skimmilk, 2 teaspoons salt.

Cut potatoes and carrots in small pieces, add enough water to cover, and cook for 20 minutes. Do not drain off the water. Brown the chopped onion in the fat for five minutes. Add this and the tomatoes to the vegetables. Heat to boiling, add two cups of skim milk, and thicken with flour. Celery tops or green peppers give good flavor, too.

Spinach Loaf.

You can make a small can of spinach, chard, or beet tops serve seven or eight people by making into a loaf combined with rice or bread crumbs. Asparagus or string beans are also good served this way.

1 can chopped spinach, 4 cups boiled rice, 2 cups white sauce, 1 red pepper.

Make a thick white sauce of two cups skimmilk, four tablespoons flour, four tablespoons oleomargarine and one teaspoon salt. Melt fat and mix with flour, add to milk and stir over fire until it thickens. Mix with the rice, chopped spinach and pepper. Form into a loaf and bake 20 or 30 minutes.

RICE THE FOOD OF MILLIONS

A Good Mixer.

Rice has little individual taste and takes on the flavor of the dish with which it is combined. Whether freshly cooked or left-over, it can be mixed with the other ingredients in bread making in proportions varying from a 50-50 ratio in corn bread and a two-to-one ration in wheat bread down to the few left-over grains that should be dropped in somewhere. Don't be afraid to use cooked rice in any kind of bread you are making. One part rice flour to three parts wheat flour makes a loaf of fine texture similar in appearance to the all-wheat loaf. Housekeepers, however, need not wait for rice flour to be manufactured. All they have to do is to combine one-third of steamed rice, well mashed, with two-thirds of wheat flour, made up according to the usual formula for white bread.

Louisiana Rice Corn Bread—Rice improves either plain cornbread or cornbread made with eggs and milk. Use it in both. Cornbread made with eggs and milk is rich in protein and makes a good meal served with a little gravy. This recipe from Louisiana is not extravagant for the housekeeper who has an abundance of eggs and milk.

3 eggs, 1 pint milk, 1½ cups cold boiled rice, 1 teaspoon baking powder, 1½ cups cornmeal, 2 tablespoons melted fat, 1 teaspoon salt.

Beat eggs very light; add ingredients in order named; beat hard and bake in shallow greased pan in hot oven.

Cornmeal and Rice Waffles—Mix together a half cup of cornmeal, a half cup of flour, a cup of boiled rice, a teaspoon of salt, a teaspoon of baking powder, tablespoon melted fat, two beaten eggs, and a pint of milk. Beat well and bake in well-greased hot waffle irons.

Rice Gems—One egg, one cup milk, one cup cold boiled rice, one cup flour or three-fourths cup of cornmeal, one teaspoon salt, one teaspoon baking powder, one tablespoonful of melted fat. Bake in greased hot gem pans.

Rice Batter Cakes—Add to one cup of cooked rice a beaten egg, one-half cup of milk, one teaspoon fat, enough flour to make it hold together and one-half teaspoon baking powder. Cook on griddle and serve with syrup.

A Meat-Stretcher

Many recipes for combinations of rice and meat have come to us from those parts of Europe where meat is used mostly for the flavor it gives other foods. In our efforts to cut meat consumption rice becomes interesting as the most useful meat-stretcher. It can be used freshly cooked or as a left-over. In its many varieties Pilaf is most popular among the Oriental people and is frequently served at dinner as the principal dish.

Pilaf with Chicken—Pilaf is practically rice cooked in meat stock until the broth is absorbed. This broth or stock can be made from meat, chicken, turkey or game.

1 small fat chicken, 2 cups rice, 1 stick cinnamon, salt and pepper to taste.

Boil the chicken in a small amount of water until a rich broth is formed. Strain through a colander; add the rice to the broth, also the cinnamon and after seasoning it to taste, cook over strong fire until all the water is evaporated.

Pilaf with Tomatoes—Among the different flavors and dressings used to give variety to this national dish, toamto is generally the most acceptable.

5 cups stock, 2 cups rice, 2 tablespoons fat, 1 small onion, 4 ripe (or 6 tablespoons canned) tomatoes, salt and pepper to taste.

Chop the onion very fine and heat in part of the fat until pink. Place in a deep vessel, add the juice of the tomatoes, also the broth and the rice, which must be well washed. Season to taste and boil until done; pour over the whole the heated fat and place the vessel in moderately hot oven for 10 to 15 minutes.

Rice Stew—Wash a knuckle of beef

(Continued on page 14)

PRESIDENT SETS PRICE OF WHEAT FOR YEAR 1918

(Continued from page 3)

farmer of a reasonable profit even if the war should end within the year and the large stores of grain in those sections of the world that are now cut off from transportation should again come into competition with his products. To increase the price of wheat above the present figure, or to agitate any increase of price, would have the effect of seriously hampering the large operations of the nation and of the allies by causing the wheat of last year's crop to be withdrawn from the market. It would, moreover, dislocate all the present wage levels that have been established after much anxious discussion, and would, therefore, create an industrial unrest which would be harmful to every industry in the country.

Trusts in Farmers' Loyalty.

"I know the spirit of our farmers, and have not the least doubt as to the loyalty with which they will accept the present decision. The fall wheat planting, which furnishes two-thirds of our wheat production, took place with no other assurance than this and the farmers', confidence was demonstrated by the fact that they planted an acreage larger than the record of any preceeding year, and seven millions acres more than the average for the five years before the outbreak of the European war.

"It seems not to be generally understood why wheat is picked out for price determination, and only wheat, among the cereals. The answer is that while products has been subject to great disturbances during the last three years because of war conditions, only two commodities, namely, wheat and sugar, have been so seriously affected as to require governmental intervention.

Wheat Most Needed Abroad.

"The disturbances which affect these products (and others in less degree) arise from the fact that all of the overseas shipping in the world is now under government control and that the government is obliged to assign tonnage to each commodity that enters into commercial overseas traffic. It has consequently been necessary to establish single agencies for the purchase of the food supplies which must go abroad. The purchase of wheat in the United States for foreign use is of so great volume in comparison with the available domestic supply that the price of wheat has been materially disturbed and it became necessary, in order to protect both the producer and the consumer, to prevent speculation. It was necessary, therefore, for the government to exercise a measure of direct supervision as far as possible to control purchases of wheat and the processes of its exportation. This supervision necessarily amounted to price fixing, and I therefore thought it fair and wise that there should be a price stated that should be at once liberal and quitable.

Farmer Central Figure in War.

"Those peculiar circumstances governing the handling and consumption of wheat put the farmer at the very center of war service. Next to the soldier himself, he is serving the country and the world and serving it in a way which is absolutely fundamental to his own future safety and prosperity. He sees this and can be relied upon as the soldier can.

"The farmer is also contributing men to the army, and I am keenly alive to the sacrifices involved. Out of 13,800,000 men engaged in farm industries, 205,000 have been drafted, or about 1.48 per cent of the whole number. In addition to these, there have been volunteers, and the farmers have lost a considerable number of laborers because the wages paid in industrial pursuits drew them away. In order to relieve the farming industry as far as possible from further drains of labor, the new draft regulations have been drawn with a view to taking from the farms an even smaller proportion of men; and it is my hope that the local exemption boards will make the new classifications with a view of lightening the load upon the farmers to the utmost extent.

Plan to Meet Labor Needs.

"The secretary of war has asked for authority to furlough soldiers of the national army if conditions permit it, so that they may return to their farms when assistance is necessary in the planting and harvesting of the crops. National and local agencies are actively at work, besides, in organizing community help for the more efficient distribution of available labor and the drawing upon new sources of labor. While there will be difficulties, and very serious ones, they will be difficulties which are among the stern necessities of war.

"The federal railway administration is co-operating in the most active, intelligent and efficient way with the food administration to remove the difficulties of transportation and of the active movement of the crops. Their marketing is to be facilitated and the farmers given the opportunity to realize promptly upon their stocks.

System of Control.

"The department of agriculture and the food administration will continue to co-operate as heretofore to assist the farmers in every way possible. All question of production, of the marketing of farm products, of conservation in the course of production, and of agricultural labor and farm problems generally will be handled by the department of agriculture, while all questions of distribution of food supplies to the allies and of conservation in consumption will be handled by the food administration; but the chief reliance is upon the farmer himself, and I am sure that that reliance will be justified by the results. The chief thing to be kept clearly in mind is that regulation of this sort are only a part of the great general plan of mobilization into which every element in the nation enters in this war as in no other. The business of war touches everybody. It is a stern business, a co-operative business, a business of energy and sacrifice, a business in the largest and best and most stirring sense of that great word."

Make Your Shoes Wear Longer

All materials conserved at home mean just that much more for the boys "over there." Men and supplies, in sufficient number and quantity can end this war. Use—

DUCK-BACK Shoe Oil

and save your shoes! Uncle Sam has issued a bulletin requesting people to oil their shoes instead of using blacking. Get a can of Duck-Back Shoe Oil today and use it for the entire family's shoes.

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In union there is strength.

Co-operation spells progress.

A fundamental policy of this bank is co-operation with its customers, making their welfare a prime consideration.

Walker Brothers Bankers

SALT LAKE CITY

DISPERSION SALE

Having sold my ranch known as The Wayside, I will hold a

Dispersion Sale, March 8, 1918

At 1 o'clock at the ranch 1 mile east of town, of my entire herd of registered Holstein cattle. Consisting of 24 females. Twenty of them are sired by my herd bull Buffalo Duke Doeda a half brother to Duchess Skyback Ormsby the worlds record cow. 11 are bred to my Junior herd bull a grandson of Rag Apple Korndyke 8th. His 4 nearest dames average nearly 30 pounds. He will be included in the sale. As a herd the dams of these heifers produced 516 pounds butter in a year in the Pioneer Cow Testing Association.

There are also 3 young bulls of serviceable age and 6 bull calves. Also a new Empire Milking Machine 2 unit and a 3 horse electric motor, eight registered Poland China sows and 3 registered Poland China boars,

Mail bids may be sent to Col. E. H. Walter, Auctioneer, or Clerk S. J. Hammel.

H. H. STIYER

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Every plant guaranteed to bear continuously this year.

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RELIABLE FARM BARGAINS

) acres at $235 per acre within eight miles of Salt Lake City. Garden soil. First class water right. This land has been planted to alfalfa, grain and sugar beets. It has a good brick home, barns and other outbuildings. The man owning this place died some time ago and the widow is desirous of moving into town. She is unable to run this farm and for that reason we are offering here one of the best farms, price considered, that has come to our office in a long time. If you are looking for a farm right near the city that has every modern convenience this will appeal to you.

0-acre farm in Cache valley. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre; the pasture land at $10 per acre, or, if party does not wish to purchase the pasture land, we have now a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary as part payment. There is still some due on water.

0 acres of land in the Bear River valley, 80 acres irrigated and 80 acres dry. We can divide this 160 acres up to suit the purchaser. We can either sell the 80 acres of watered land separate, the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of dry together. We can sell the 160 acres at a cash payment of $3000 down and any reasonable length of time on the balance at 7 per cent interest. The purchase price for the 160 would be $10,500. Water can be had for the 160 acres.

) acres of land in the Bear River valley, all planted to fall wheat. The soil is of a sandy loam nature with full water right from the Bear River canal. We can sell this at $115 per acre on any reasonable terms at 7 per cent interest. If you are looking for a nice farm that will pay for itself it would pay you to investigate this.

480-Acre ranch divided as follows: 1280 acres is irrigated land, ample water. The balance of 2600 acres is grazing land, all fenced and cross fenced and is contiguous to the other land. There are 400 head of white-faced cattle; 80 head of short two-year olds and 20 head of long yearlings; ten head of good horses; tractor engine with plows and all necessary machinery to run the ranch. There is a large six-room house, barns and other outbuildings necessary to run a first class ranch. The price of this ranch is $140,000.00.

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is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.
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323 Judge Bldg. Salt Lake

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The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.
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Salt Lake City, Utah.

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List your farm with us.
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

AN IDAHO RANCH BARGAIN
320 acres near Corral, this ranch is located on a creek, the first ranch where the valley opened up, it is adjoined on three sides with high hills which are open range, the valley opens to the South East and one can stand on this place and see for miles over level land, it now cuts 200 tons of timothy and clover hay, and 1000 bushels of grain were raised on the place this year. It is all fenced and cross fenced, with a five room house, shade trees, cellar, wood shed, granary, stables, and machine shed, the creek is fringed on either side with timber and willows which makes excellent shelter for stock in winter, this land is watered by decreed water, and would make an ideal dairy ranch, or for pure bred sheep it would be excellent. Price eleven thousand dollars ($11,000) five thousand dollars ($5000) cash, balance to suit at seven per cent.
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A Genuine Opportunity.
An enlarged non-resident (320 acres) homestead relinquishment, 2½ hours ride from Salt Lake City. Located on main line of railroad and in a good growing district. Land of excellent quality with a good rainfall.
Buyer must use his homestead right. Same character of lands adjoining are yielding 20 to 40 bushels per acre. A real bargain to persons willing to use homestead right in connection. No better bargain in the state. Write for further particulars.
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Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.
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Span large registered Perchon mares, 2 and 4 year old, beauties. Dam imported from France. Must sell, price right. Write or call on
C. A. PARRISH
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A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.
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Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

DUROC BOARS
A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.
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Home of the Champion Durocs.

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Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.
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Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.
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White Leghorns, Brown Leghorns,
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SOY BEANS FOR SEED
GLOBE GRAIN AND MILLING CO.
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Salt Lake City, Utah.

RICE THE FOOD OF MILLIONS

(Continued from page 11)

and place in three quarts of cold water for an hour. Put it on the stove and let it gradually heat, then simmer for two hours. Any scum rising when it first begins to boil should be skimmed off. Prepare one-half cup each of chipped onion, carrots, cabbage, tomatoes, one-fourth cup of turnip, three cloves, a pinch of cayenne, black pepper and one and one-half teaspoons of salt. Add these to the simmering meat and let boil for one hour; then add a cup of rice and a bay leaf. Boil, stirring occasionally until the rice is cooked. When the kettle is closely covered there is little need of adding water. Add boiling water if needed.

Boiled Chicken with Rice—This is the favorite of all combinations. Usually in the South the chicken is cooked separately and the gravy served with the rice at the table.

This recipe describes the method of cooking rice with chicken broth.

1 cup rice, 1 egg, a fowl suitable for boiling, salt and pepper, grated cheese.

Cut up the fowl and boil until it is tender. Wash the rice and blanch it by letting it come to a boil and cook a few minutes in salted water. Finish cooking it in the broth from the boiled chicken. Do not cook it too long or it will be mushy. Add the broth a little at a time to be sure the rice is not too wet when it is done. Season with cheese if desired and add the egg yolk to bind it just as it is taken from the fire. Serve as a border around the fowl.

Rice with Chicken Giblets.

As a follow-up dish, prepare a broth by cooking together the giblets, neck, tips of wings, and well cleaned head and feet of the chicken used in recipe above.

2 cups rice, 1 egg, giblets of a chicken, cooking oil or chicken fat, chicken broth, onion, grated cheese, salt and pepper.

Boil the rice in salted water until it is about half done. Then let the water cook away and begin adding the broth, in such quantity that the rice will be nearly dry when tender. Fry the chopped onion in the oil or fat. Some mushrooms cut up small are a very good addition. Mince the chicken giblets and add to the onion. Stir this mixture into the rice. Add grated cheese and a beaten egg just as the rice is taken from the fire.

Okra Gumbo.

Among the famous creole dishes Gumbo and Jambalaya are deservedly famous. Take one quart of ripe tomatoes, one quart of okra cut in rings; put over the fire with three quarts of water; let come to a boil. Cut up a chicken into small pieces, bones and all; brown in fat, put into the vegetable mixture, add onion chopped fine, salt and pepper to taste, and let all simmer for two hours. When served put a tablespoon of boiled rice and a little garden pepper cut fine in each dish, dipping over it the chicken, vegetable and juice.

BORROWING FARM TOOLS

Most small farmers cannot afford to own all the farm tools necessary at all times, and under varying season's demands, for a variety of crops. Thus the borrowing of implements has developed to the point of being a habit with many.

Tools would be willingly loaned by those favored with their possession if they were always returned in good repair and wear replaced. The sad part of lending, and with good intention aiding a neighbor in need, is often to see one's tools return broken or worn and no offer of replacement made.

A member of one of the centers of the Farm Bureau recently wrote to the farm adviser, stating that he had that day loaned four implements, worth about $500, to neighbors, and thought a logical solution would be for the general establishment of a rental price for farm tools per day of use, as well as asking for any information as to such prices. The letter was referred to Professor Davidson replies as follows:

"The only carefully worked out data of this kind that we have is published in the United States Department of Agriculture Bulletin, No. 338. This bears the date of January 18, 1916:

"Grain drill—Average cost, $72; cost per day, $1.71.

"Mower—Average cost, $41; cost per day, $1.90.

"Land roller—Average cost, $24; cost per day, 57c.

"Sulky plow—Average cost, $42.50; cost per day, 59c.

"Data is not given for other machines.

"We are inclined to think that this cost should be increased at least 50 per cent.

"The cost of operating depends upon the size of the machine and the daily cost varies very much with the amount of work performed each year, but these suggestions should be of some interest, at least, in this connection."

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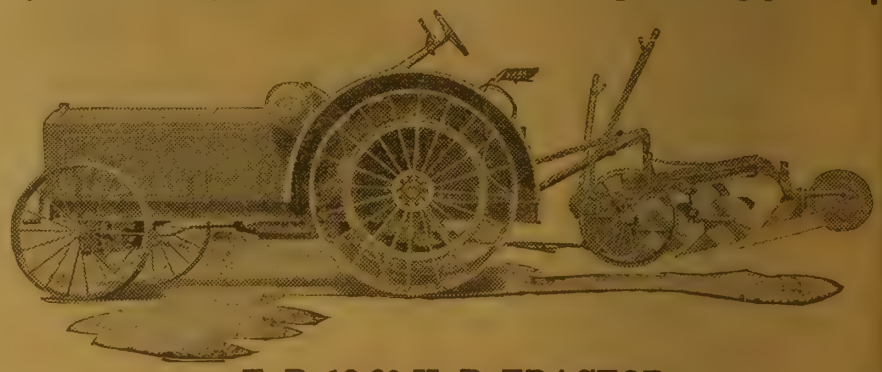
but your neighbors sons have gone; and man power will be scarce this year. The Gas Tractor will help fill the gap.



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(LIMITED)

POULTRY

USE STANDARD POULTRY

Standard poultry, as the phrase is commonly used in America, is poultry bred to the standards established by the American Poultry Association.

The object of making standards for poultry is the same as the object of making standards of weight, volume or quality for any product or commodity; —i. e. to secure uniformity and establish a series of grades as a basis of trading in the article.

In making standards for poultry which apply in the process of production the principal points considered are size, shape, and color.

Breed Characters.

Size and shape are breed characters and largely determine the practical values of poultry. Many standard breeds are divided into varieties differing in color, but identical in every other respect.

Color is not a primary utility point, but a secondary point often comes in for special consideration. For example, a white variety and a black variety of the same breed are actually identical in table quality, but because black birds do not dress for the market as clean and nice looking as white ones, it often happens that they are not as salable.

When a flock of fowls is kept for egg production only, uniformity in color in much less important than approximate uniformity of size and type, yet the more attractive appearance of a flock of birds of the same color justifies selection for color as far as it can be followed without sacrificing any material point.

When a poultry keeper grows his own stock year after year he ought by all means to use stock of a well-established popular standard breed. By doing so and by selecting as breeders only as many of the best specimens of the flock as are needed to produce the chickens reared each year, a poultry keeper maintains in his flock a highly desirable uniformity of excellence in every practical quality and with little extra care and no extra cost can have a pleasing uniformity in color.

Each Breed Has Its Place.

To the novice in poultry keeping it often appears that there is no real necessity for so many breeds and varieties as have been standardized in America. Further acquaintance with them, however, shows that although color differences are in most cases made merely to please the eyes of persons having different preferences for color, the differences in character have been developed with a view to adapting each to particular uses or particular conditions.

Leaving out of consideration the breeds kept as novelties, most of which originated before industrial progress created a large demand for poultry products, all the standard American breeds of fowls have been made and developed on the general principle of practical quality the foundation of breed character and value.

Classification of Useful Breeds.

In harmony with this principle the common classification of breeds according to their place in the general scheme of poultry production divides them into three principal classes; namely, laying breeds, meat breeds, and general-purpose breeds—that is, breeds that are not as ready and persistent egg producers as the laying breeds, and not as meaty and as easy to fatten as the meat breeds, yet combine in one individual fowl very good laying capacity with very good table quality.

The Leghorn, Minorca, Andalusian, Ancona, and Campine are well known breeds of the laying class; the Brahma, Dorking, and Cornish of the meat class; the Plymouth Rock, Wyandotte, Rhode Island Red and Orpington of the general-purpose class.

Characteristics of Egg Breeds.

The breeds mentioned as of the laying class, with the exception of the Minorca, are relatively small, very energetic and lively, mature early and are easily kept in good laying condition. The Minorca is of larger size and modified somewhat in the other particulars mentioned, yet has more the character of the laying class than of any other.

In the meat breeds there is not the same uniformity of type that is found in the laying breeds. The three mentioned are all quite different. The Branma is most popular because it is at the same time the largest and the most rugged in constitution. The Dorking excels in quality of meat but is generally considered somewhat lacking in hardiness. The Cornish is rather hard-meated but being very short-feathered has its special place as a large meat-producing foul in southerly sections where the more heavily feathered Brahma does not stand the summers well.

Characteristics of General-Purpose Breeds.

Among the popular breeds of the general-purpose class there are also difference in type, adapting breeds to different uses. The Plymouth Rock is generally regarded as the type meeting the widest range of requirements in the general-purpose class.

The Wyandotte is a little smaller and earlier maturing but still very well meated and easy to fatten

The Rhode Island Red has nearly the same standards of weight as the Wyandotte but is a more active bird, not putting on fat so readily; consequently it approaches the laying type and is popular with those who want eggs and meat, but want eggs most.

The Orpington is at the other extreme in the general-purpose class, being a heavier, meatier fowl than the Plymouth Rock.

A Breed for Everyone and Every Purpose.

Such a list of breeds affords so wide a range of choice that poultry keepers can always select a standard breed better adapted to their locality and their purpose than any non-standard stock they can procure, and having the further advantage of reproducing true to type.

CANDLING IMPORTANT IN RUNNING INCUBATOR

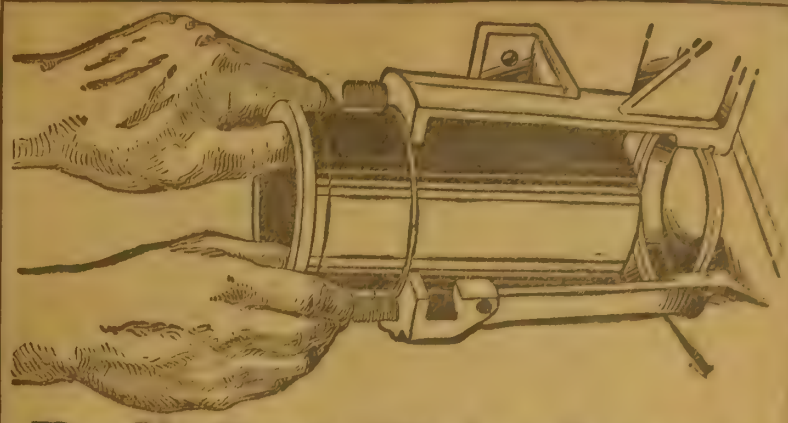
Operator can ascertain whether moisture supply is sufficient, and detect eggs containing dead germs. In running an incubator it is always advisable to test the eggs by candling at least once, and better twice during the hatch. This gives the operator a chance to study the growing embryos, to watch their development. From the size of the air bladder at the different stages, he is able to know whether he is supplying the proper amount of moisture. In cases of low fertility, very frequently the eggs from two or three machines can be combined after the first candling.

On the seventh day the infertile eggs will appear clear and much like fresh eggs. The fertile egg will have a central dark spot and radiating blood vessels. There are always a number of germs that for various reasons of weakness start to develop and die. These will show up on the fourteenth day. They will appear gray and lifeless, the partially developed embryo floating about in the egg. These should be removed. They tend to lower the temperature of the machine and decay very quickly.

An electric flash light makes a very good tester. Darken the room and pass the light around under the egg tray. The clear infetrile eggs can easily be detected. The same method can be used in candling for dead germs, but it will be necessary to turn the eggs about some to make sure of the absence of life.

If an electric flash light is not available, a piece of cardboard with a round hole an inch in diameter cut in the center will serve the purpose. With the cardboard held between the operator and a lamp, place the eggs one at a time before the small hole. The embryo will be easily seen.—C. S. Anderson, Colorado A. C.

Leave it to us and we'd say that the hardest jobs are trying to give satisfaction either as a stepmother or as manager of a tail-end baseball club.



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Other tractor motors must be taken out of the frame and sent to a machine shop to be rebored, reground and fitted with oversize pistons, which means heavy expense, much work and long delays, or a complete new cylinder must be purchased.

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HELP WIN THE WAR

Save Expensive Delays and Transportation Charges and Help in the Big Drive for Greater Food Production

If maximum crops are to be raised, all farm machinery likely to be used this year, must be put in good repair so as to avoid delays in the field.

A Warning to Farmers

Our duty to the Nation, as well as our duty to our customers, impels us to warn the farmers of this community of the danger of delay in placing orders for repairs they may need this spring for their farm machines, gas engines and tractors.

It is of the utmost importance that you examine your farm-operating equipment without delay and notify your dealer as soon as possible what parts you require to put the machines in workable condition.

Unless your dealer receives this information several weeks in advance of the using season, he will be unable to obtain the parts in time for your needs.

The manufacturers are short of material and labor, and the traffic conditions are causing serious delays in transportation. More time than usual therefore is required to fill orders for both machines and repairs.

When you order repairs early you enable your dealer to order in large quantities, which can be transported by freight at a big saving of expense as compared with express or parcel post charges. Late ordering often necessitates telgraphing or telphoning. It is no exaggeration to say that many thousands of dollars are wasted in needless expense every year as the result of delay in making known repair needs.

This year the question of expense is not so important as the question of crop production, which may be seriously interfered with by delay in ordering repairs. All of the machines available for use this year will be needed to increase crop production to the extent required by the United States and our Allies.

So important is the question of repair supply, that implement dealers, with the co-operation of the manufacturers, government officials has selected the week of March 4th to 9th as Inspection and Repair week.

The United States Department of Agriculture, our State Agricultural College and Experiment Stations, our State Councils of Defense are rendering assistance in this movement because they recognize its tremendous importance under existing conditions.

The farmer who does not make known his wants during that week or before will have only himself to blame if the parts he needs are not supplied in good season.

Examine your machines and make a list of broken parts.

Also list parts that are badly worn and likely to give out before their work is completed.

Take pains to give correct numbers of numbered parts and complete description of unnumbered parts.

Give the trade name or brand of machines. If in any case the brand and manufacturer's name have been obliterated, there is all the more reason for early ordering.

Place your orders at least three weeks before you expect to use the machines.

We pledge ourselves to spare no effort to obtain all needed repairs for farmers who will co-operate with us by making known their requirements in accordance with these suggestions.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 32 LEHI AND SALT LAKE CITY, UTAH. MARCH 9, 1918

Our Duty to Produce Sugar

R. S. Miller.

I was told this story about one of our Utah boys some where in France. He has been over there since early last fall. Friends at home sent him a Christmas box and part of it was candy. He was living in a French home that had been converted into a hotel or living place for our officer boys. When the package was opened he gave the children a part of his candy and they said it was the first they had eaten for about two years. The sugar shortage is so serious that candy in many places can not be secured at all. Some of the larger cities have closed the candy stores because they can not spare the sugar.

Information secured by the U. S. Food Administration on the beet sugar industry of France includes these important facts. In 1914 the battle line eliminated from French possession 203 of the 213 factories and a large proportion of them are still in the possession of the Germans. Last year, not more than one-fourth as much sugar was produced as before the war. The yield of sugar per ton of beets shows a slight falling off since the war began, which may be due to shortage of both labor and fertilizers.

This serious decline in the sugar production of France largely explains her dependence on imports and the necessity for the United States to share its normal supply with France.

The English are now receiving for household use only about half as much sugar as the amount to which they have been accustomed, and the French sugar ration since last October has been less per month than the American household use per week. Italy is on the same short sugar ration as France. It is to relieve these conditions that this country is now saving and sending sugar.

In our own country, the eastern part of the United States, there is and has been a shortage of sugar since last fall.

With such conditions is it any wonder that the Food Administration are asking the farmers to increase their beet acreage. There is no need of the Government going to the farmers of states where there are no sugar factories, they must come to those states where the growing and manufacturing of sugar has been a business in the past. To the farmers of Utah and Idaho a strong appeal has been made for an increased production of sugar beets, because our soil and climatic conditions are favorable for their production.

Because of the impracticability of shipping beets very far, the effective sugar beet production is limited to the areas in the vicinity of the sugar mills, and it is in these areas that most of this year's crop must be grown. Both from the point of view of the welfare of the farmers of those districts and the national interest with regard to adequate supply of sugar, it is important that the crop shall be grown as efficiently and economically as possible. It is believed that this can best be accomplished by adhering somewhat closely to the methods of crop rotation that have been worked out and tested in most of these producing districts, and by avoiding the planting of an abnormally large acreage of competing crops at the expense of a reduction of the acreage of beets.

The determination of the acreage to be planted needs to be made early so that the farmers can plan their work to best advantage and the sugar companies arrange in advance for the supplies necessary to operate the mills.

The sugar requirements of this country and the allied nations during the next year or more will be such as to render it imperative from the standpoint of national interest that our production of sugar be increased as much as possible.

In every request the government has made we have answered with more than our allotment—will we do it with sugar beets.

Those in charge of the Food Administration, who are supposed to know all these details, seem to think the sugar shortage is more serious than many of us will believe. Mr. Hoover has said that ',One of the most vital problems confronting this nation, is that of procuring sufficient sugar to meet the requirements of our people, and of the allied nations, fighting our common battle. Therefore I earnestly appeal to every farmer to come to his country's aid in this hour of need."

Under such conditions we ought to grow just as many sugar beets as possible.

Raise more hogs they are the best way to market your grains and alfalfa.

More Hogs on Utah Farms

Written for the Utah Farmer.

Since the pork production campaign was started in Utah, many developments have taken place that are of interest to every farmer.

Realizing the advantage of raising hogs, many breeders and the farmers generally have kept a good proportion of the sows from being slaughtered. A movement begun last December to keep piggy sows from going into the butchers hands has met with such response that this class of stock is difficult to obtain. Packing Companies of Salt Lake and Ogden now have more orders than they can fill. It is estimated that about 1000 brood sows have been saved from slaughter, which means a substantial increase in hogs for slaughter next fall.

The confidence of the hog raiser has not been misplaced as is shown by the present rising market and the promise of still better prices yet to prevail. The Packing Companies have further agreed to maintain a minimum price of $14.50 per hundred pounds live weight. However, it is expected that prices will range substantially above this figure for an indefinite period in the future.

A method of increasing our production which is generally overlooked is that of marketing our hogs at heavier weights. This is a matter of economy to the farmer, because the market does not call for the light and unfinished class of hogs which the farmers sometimes sell to their own disadvantage.

It is important to note that it is not yet too late to breed sows, and this should be done wherever possible. Breeding stock is available and should the demand warrant it The Hog Prodution Committee of the Food Administration will consider a plan to bring in sows from places outside Utah. This will be unnecessary until our present supply of unbred sows has been put on the farm and bred locally in the districts where they are to be raised.

Now is the time to place Utah among those states that are producing enough meat animals for home consumption. With conditions as they now are, this is not an unreasonable goal when we think that other states are going beyond our mark and producing a surplus with which to feed our Army.

It is hoped to place bred sows on many more farms that have not had hogs through the financial difficulties. The Farm Bureau, local banks, and the Food Administration are working to this end at the present time.

How to Feed Young Pigs

Dr. W. E. Carroll, U. A. C.

Profits in the hog business may be very materially influenced by the feeding and management of the pigs for a few months just after weaning. To put the young animals in proper condition to thrive without further aid from their dam, they should have been taught, while still sucking, to eat other feeds. Little difficulty will be encountered in teaching them to take skim milk or buttermilk if it is offered in a trough from which they can easily drink. As time goes on, a little shorts or ground barley or finely ground wheat screenings can be added to the milk to form a thin slop and gradually increased as the young pigs require it. If the grain can be soaked in the milk from one feed to the next it will be even better.

If skim milk or buttermilk is not to be had, satisfactory growth can be produced on a mixture of meat meal or tankage with one or more of the following: shorts, ground barley, or finely ground wheat screenings. The proportion of tankage to feed may vary from 1 part in 10 to 1 part in 5 or 6 of the other feeds according to the prices of the feeds used. Some feeders report splendid results when feeding as high as one part of tankage to two of the other feeds, though this is a higher proportion than is usually recommended.

It is possible to shift the responsibility of supplying the proper mixture of the various feeds entirely on to the pig, and curiously enough this has proved a very easy and satisfactory way of feeding. This is accomplished by the so called "free choice system, in which each feed is put in a separate compartment of a self feeder, and each pig is allowed to satisfy its own requirements and balance its own ration according as its appetite may direct. This system can of course not be used unless it is desired to feed all the grain the pigs will consume, as is usually the case in fattening.

Alfalfa pasture is one of the cheapest and best crops for growing pigs. They may be turned on before or after weaning. They will however not make satisfactory or economical gains on the alfalfa alone, as it is too bulky for the comparatively small stomach of the pig. On the average it has been found that from 2 to 3 per cent of grain must be fed to pigs on alfalfa pasture for best results. By this is meant from 2 to 3 pounds of grain daily for each 100 pounds of live pig. This is by no means a full feed, but seems to be enough to keep them in a thrifty growing condition and at the same time force them to utilize to the best advanage the maximum amount of the cheap pasture.

Where pasture is not available alfalfa and weeds or other green crops cut and fed in the pens have been found nearly equivalent in feeding value to pasture, though is much less advisable because of the extra labor involved.

POULTRY

THE POULTRY FEED SITUATION

T. E. Quisenberry.

There has been a lot of things said about the poultry feed situation both "pro" and "con," mostly "con". We had just as well face the facts and analyze the situation as it actually exists. We must all admit, that from a patriotic stand point, it is our duty to raise all the poultry and produce all the eggs we can. If Germany wins this war, your job and your porperty would depreciate far more than the little loss that you might suffer because of one years high priced feed. But is there any necessity for loss? We do not think so.

At the present prices of eggs and poultry, we can well afford to pay an increase for feed. For a period of five years previous to 1914, the highest average price paid for eggs during the months of December and January in the twelve leading markets of the United States was only 26c to 28c per dozen and they sold at an average of 16c during the summer. During the same years a good quality of scratch feed sold in the same markets for $1.80 to $2.40 per hundred. In 1918, eggs sold in these same markets at 75c per dozen and the same scratch feed at $3.60 to $4.00 per hundred. In some of these markets eggs sold as high as 90c to $1.00 per dozen.

In some Eastern markets in 1912 in January eggs sold for 30c a dozen. Today they are selling at 75c to $1.00. In 1912 table poultry sold in the same markets for 20c per pound. Today poultry is 35c and going up. In 1912 feed for poultry in that same section cost $1.80 per hundred. Today it is $3.60 and not likely to go higher. About the same ratio of prices prevails in most other sections. The prices of feed are now staple and we know what to depend on.

You must also figure that hens are bred up and laying far better than they did five or six years ago. There are not so many slackers. But we will say that the 1914 hen laid 120 eggs. They would bring a total of $2.20 which was the average price on the best markets for that year. She would eat 80 pounds of feed at $2.00 per hundred which would cost $1.60. Her eggs would leave a net profit above feed cost of only 60c. This past year, if the hen laid 120 eggs they would have sold for $4.50 in our own local market (not even considering the higher prices in these twelve best markets) and her 80 pounds of feed would have cost $2.88 leaving a profit of $1.62 in 1917 against a profit of only 60c in 1914. But by making substitutions and growing green food and giving range and using table scraps and waste from the kitchen and garden we can make more today than in 1912 to 1914 or previous to that date.

MAKING POULTRY A DEPENDABLE SIDE LINE

Never has there been a more favorable time for farmers to develop flocks of profitable poultry and make them a dependable branch of diversified agriculture. Comparatively few farmers are making the most of their opportunities in poultry keeping. A few farmers have taken up the business seriously, but the majority have not given it the attention its income merits. Recently the writer has had occasion to study quite thoroughly the effects of the high prices of grain feeds and by-products upon the poultry industry, especially in the Eastern states where the business is highly specialized. As a result of restricted range and soaring prices of feeding materials the business is in a state of chaos. The efforts to build up a profitable poultry industry, without making provision for an ample supply of suitable feedstuffs have failed.

To make poultry keeping profitable enough hens should be kept to make it a serious undertaking, one worthy of painstaking effort, the success of which will bring results sufficient to stimulate enthusiasm. The small flock should be kept if that is all that conditions will permit, but the larger numbers will make it possible to devote more time to looking after the poultry and finding better markets for the eggs and poultry.

The choice of breeds depends upon the demands of the trade one is supplying. Mixed flocks do not produce uniform products, and mixed products sell at a disadvantage on any market. It is folly for farmers to attempt to work up a fancy trade for eggs or dressed fowls while keeping a flock of mixed fowls. With a flock of uniform well-bred fowls one can sell eggs for market, a few eggs for hatching, baby chicks for breeders and the old stock for market or for breeders, while those who keep mixed flocks must depend upon the sale of eggs and stock for market. These facts should be sufficient to prove the value of the well-bred flock in finding profitable markets for the products.

It is useless to talk to some farmers about the superior qualities of pure-bred stock, or to try and convince them that egg or meat production will be greater from pure-bred than from grade stock. So many of them have had disgusting experience with pure-bred stock of low vitality and inferior breeding that they are ready to condemn pure-bred stock in general. If such a belief or experience is true it is the result of selecting the foundation stock of breeders whose birds lack stamnia, size, bone and maturity. The man who is buying foundation stock should know what to look for. Vigor or vitality is of first importance in establishing a flock. Never buy eggs for hatching or birds for the breeding pens from flocks that contain birds with crow heads, long necks or poorly developed, spindling shanks. Buy of some poultryman who has plenty of range for his fowls and who has established reputation for breeding along utility lines. Buying eggs or breeding stock from some nearby poultryman is often better policy than sending away for culls of low vitality from some fancier whose only claim of distinction is the fact that a few of his birds have won prizes at poultry shows.

The ability of the different breeds as egg producers seems to be a matter of care and feed more than of breed. As general rule it may be said that the more active, smaller breeds are more prolific layers than the heavy breeds while the intermediate breeds to a certain extent combine the laying tendencies of the smaller breeds with them beat producing tendencies of the heavier breeds. In studying conditions on various farms, it may be said in a general way that pure bred flocks are given more attention than mixed flocks. The pride which the farmer has in a uniform flock whose breed type is to his particular fancy is a very good reason for this, and the better care is usually the key to the better performance. A uniform flock of poultry is a farm asset. It adds to the interest and attractiveness of the business.

Let any farmer who grows corn, oats, clover and alfalfa and who keeps cows get pure bred hens of good strain; the breed does not cut any figure,—feed them these feeds in proper proportions along with sour milk, feed the grain mixture both ground and unground once a day, give the hens fine clover and alfalfa shatterings to pick over during the winter, furnish them with good houses and abundant range, grit and pure water and he can make them produce an average of 150 eggs in a year or something like $1.50 profit for each hen in the flock. Get the pullets out in April, keep them growing so they will be ready to lay in the fall and the next fall have enough pullets to take the place of one-half of the older hens, selling the two year old hens and inferior yearlings in the market at the time they begin to moult, and he can make more net profit from his 300 hens than from any other similar investment.

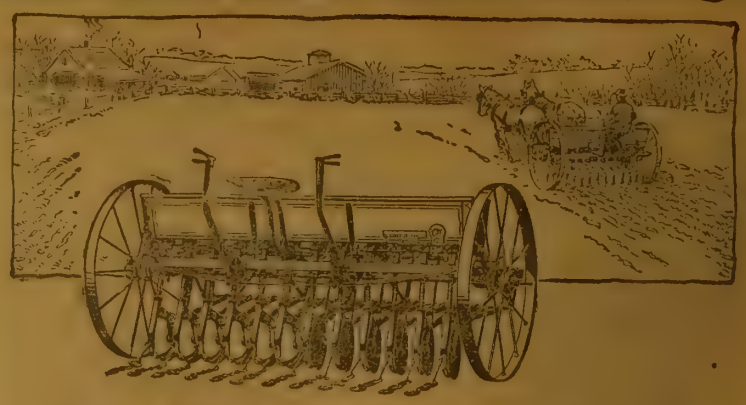
In his efforts to produce as much of the feed as possible the farmer poultryman may find it profitable at times to buy a limited amount of certain feeds, such as scratch feeds, chick feed, meat scraps and the like to increase the efficiency of his home grown feeds, but with the exception of meat scraps very little purchased feed will be needed to maintain the flock at maximum egg production during the year. The logical solution of cheap growth and egg production is the growing of suitable feeding materials and proportioning them in such way as to get desired results.—C. B. Ford.

RAISE MORE TURKEYS

In the present campaign to increase the production of poultry upon the farm, the turkey raiser is particularly well able to respond. The turkey is a farm bird, first and last, and is especially suited to the grain and stock farms where there is ample ranging ground abounding in such turkey food as grasshoppers and other insects, weed seeds, waste grain, such as is left in the fields after harvest, and nuts of such varieties as beechnuts, chestnuts, pecans, pine nuts and acorns. On such a farm, the present prices of grain affect the turkey raiser but little, for with the exception of what is used at fattening time, the feed consumed is largely of such a kind as would otherwise be wasted.

With but little additional outlay to the farmer, many more turkeys could and should be raised. The small number of turkeys per farm in the United States is surprising. According to the census of 1910, which is the latest census that has been taken, only 13.7 per cent of the total number of farms reported any turkeys at all and on these farms reporting turkeys, an average of but slightly over 4 breeding turkeys was found per farm. There are some farms which by the nature of the crops grown on them or because of unfavorable surroundings are not adapted to turkey raising, but most farms are adapted to turkey raising and could easily handle a breeding flock of from 10 to 15 hen turkeys and a tom, raising from 75 to 150 turkeys each year at a good profit.

Good prices were paid to the turkey raiser during the past marketing season. On December 15, 1917, the average price per pound live weight paid to the farmer was 30.5 cents in New York State, 23.7 cents in Illinois, 25 cents in Georgia, 19.3 cents in Texas, and 27.1 cents in California. The average price throughout the United States was 23 cents.



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DRILL planting saves seed, gives the crop a better start, increases yields, and produces grain of better quality than any other known method of planting. Drill planting pays so well, and so many farmers realize now how well it pays, that sales of **Empire Jr., Hoosier** and **Kentucky Drills** took a big jump last fall and promise a bigger one this spring. These are the years when every acre of small grain must produce every possible bushel and these are the drills that do the work.

If you are growing small grain, and are not using an **Empire Jr., Hoosier,** or **Kentucky** drill for planting, you are losing money and the world is losing grain. Buy the right drill to plant your crops this spring. Buy from your local dealer who has in stock, or can get for you, the best drill for you to use on your soil.

The dealer will show you all about feeds, furrow openers, bearings, attachments, the regulation of quantities, and all the other things you will want to know. Talk this over with him or write to us, and we will send you complete information about the **Empire Jr., Hoosier,** or **Kentucky** drill that is best for you to buy.

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VOLUME XIV. LEHI, UTAH, SATURDAY, MARCH 9, 1918 No. 32

Potato Production and Prices

M. H. Greene, Field Agent in Marketing, Utah Agricultural College and Bureau of Markets, Co-operating.

There are usually a number of theories entertained by potato producers at planting time, regarding the profitableness of producing a few or a great quantity of potatoes. A common understanding during the spring of 1917 was that the prevailing high prices offered sufficient inducement to increase plantings, so much so that the increased production for the United States was 55 per cent over that of the harvest of 1916. This applies not alone to the 1917 crop but has prevailed whenever prices were high at planting time. This general rule has hardly ever failed: High prices of potatoes in the spring time result in a market increased production at harvest time with a consequent decrease in price.

Occasionally a producer of potatoes can be found, who substitutes another crop for potatoes when he finds his neighbors planting potatoes abundantly being enduced to do so because of the short crop the previous season and the high prices in May and June.

How many potato producers were there who refused the prevailing prices last fall, feeling sure that an increase would come, as it did in the spring of 1917. The Official Bulletin of the Federal Government, dated January 30th, 1918, reports that "Only 1-3 of the marketable surplus of the crop of 1917 has been moved up to December 31," while the Field Agent of the Bureau of Crop Estimates for Utah reports that 2-3 of the harvest of 1917 was still in the hands of our Utah farmers January 1. At the present time the potato market has taken a slump and producers are receiving less now for their product than at any time during the period of the war.

Production and Prices 1908-1917.

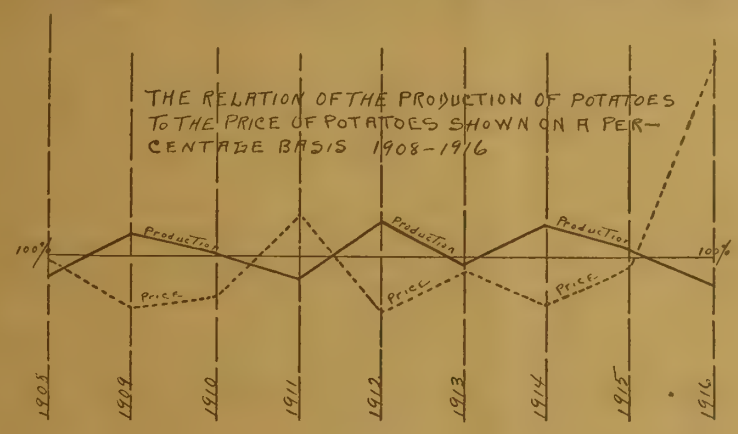
The price curve shown in connection with this article illustrates very well the above considerations. In the spring months of 1909, 1912, 1914 and 1917 prices were high, accounted for principally in that production was low during the preceeding years, 1908, 1911, 1913 and 1916. A low productive year followed by a high productive year. Each of the years in which prices were high at planting time, production increased rapidly, resulting in decreased prices, with the lowest returns from the sales of potatoes being realized during the spring months. A notable example is the price of potatoes now as compared with returns from sales last fall.

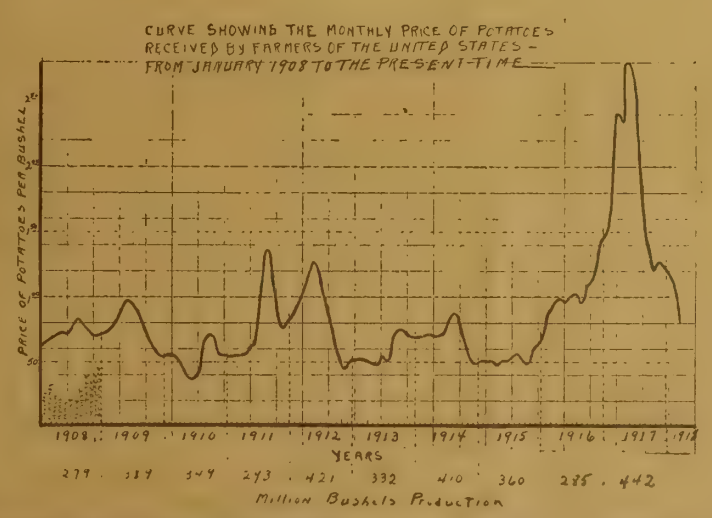
The national production of 1908 amounted to 279,000,000 bushels of potatoes. The highest price realized for these potatoes was during the following May and June when approximately a dollar a bushel was received. This high price stimulated increased plantings which resulted in an increase of 110,000,000 over the production of 1908. Prices in the fall of 1909 reached the cent a pound mark but in the folowing spring the decline was more rapid when only ½ as much was received. Note similar examples during 1912-13, 1914-15, 1917-18.

It is also noted that the year following the one of heavy production, show an increase in price, with prices being higher in the spring than in the fall.

A curve has also been carefully prepared showing the relation of the production of potatoes to their price during the same period of years. Whenever production increases price decreases and when production decreases, price increases, thus exemplifying the effectiveness of the law of supply and demand.

A careful study should be made of the curves to see if there are not certain reasons why it is more profitable to produce potatoes one season than another. Also if there is not a proper time to sell. Much time and money would undoubtedly be saved by giving just a little more thought and attention to the demands of the markets both in planting and selling potatoes.





Preparing Seedbed for Gardens

George Stewart, Professor of Agronomy, U. A. C.

A good seedbed is essential to any form of crop production. This is particularly true of garden and truck crops. The reasons for this are: (1) that these crops are grown on high-priced land, (2) that they are planted very thick and then thinned to insure as nearly perfect stands as possible, and (3) that the tender plants must be given a vigorous start and then kept growing. Without a mellow seedbed which will retain moisture for a long time, good stands of tender garden crops can scarcely be secured or hastened to a market condition with sufficient rapidity to pay rent on the land and also make profitable returns for the necessary hand labor.

In order to reduce the labor required in preparing for gardens, it is wise to choose soils that are naturally fertile and well-drained. Deep loam soils that are neither very compact nor extremely porous are best. Compact clays and clay loams are likely to be sticky when wet and to be crusted when dry, whereas it is difficult to keep coarse sands and gravels sufficiently moist for garden crops. For best results, it is highly important not only that the soil be of medium texture but also that it be neither water-logged or alkali laden.

Manuring and Plowing.

Liberal applications of well rotted—not "heated"—manure greatly benefit any seedbed. This manure is most serviceable when about 20 tons to the acre is plowed under the fall before the garden is to be planted. If this has not been done, it is well to haul out the manure during winter or in early spring and to plow it under as soon as possible or work it into fall plowed land with a harrow or disk in order to hasten decay.

Deep fall plowing is best because clods are pulverized by frost action. The seedbed has time to settle, thereby filling up all air spaces and encouraging the decay of manure, stubble, or weeds. When not fall plowed, garden plots ought to be plowed as early as possible in spring and harrowed down at once. In any case all organic matter must be completely covered or rapid drying hinders complete decomposition. The thoroughly decomposition of coarse organic matter allows this material to become part of the soil structure. Once reduced to this condition, the partly decomposed stubble, manure, leaves, and plant stalks not only render the soil more fertile but increase its water-holding power and also improve its tilth.

Control of Weeds.

Seedbeds handed after this fashion usually contain but few weeds. Whether these weeds be few or many and whatever their kind or habits, they should be killed as soon as they begin growth. This saves moisture, labor, time, and criticism of the neighbors.

In case there are not enough weeds to justify cultivation the soils should not be allowed to form a crust, which is fatal to the proper germination of small seeds. Then, too, some harrowing firms the under soil. This holds enough moisture near the surface to insure the rapid germination of the seed when planted.

Although horse-drawn tools should perform all the operations possible, it may be advisable to smooth the surface with hand rakes just before planting. Ideal seedbeds are moist, firm beneath, fine, and yet well-aerated and warm.

Soil in this condition needs no irrigation until the plants are established. This is well, for it avoids injury to young plants due to sun scald or to the baking of the soil.

Don't overstock your yard. Twenty to thirty square feet for each hen is an average allowance.

Those who can't nurse can keep people from getting sick—and what's that about an ounce of prevention?

The Housewife's Garden

By Alice Ravenhill, Professor Home Economics, U. A. C.

At the present time when every housewife is being urged to use more vegetables in order to conserve other forms of food the advantages of home production are numerous and great. The small cost, possible variety, good quality, known freshness and consequently better flavor are but a few among the many which might be quoted. Most emphasis should be laid upon variety—perhaps, because of the incentive to eat more freely and any food which offers a pleasing fillup to the palate and at this crisis adults must be encouraged to substitue vegetables for certain other foods.

Potatoes are of first importance, and ample space should be set aside for this inexpensive substitute for

(Continued on page 11)

Hooverizing The Garden

By Dr. M. C. Merrill, Horticulturist, U. A. C.

The poor neglected garden is at last coming into its own in a glorious fashion—it is going to be Hooverized. We saw the beginnings of the process last year when the nation eagerly and sympathetically turned en masse to the home garden for both pleasure and profit in producing food-stuffs so seriously needed. The result of the year's efforts was the most abundant production from the gardens of our country since the stars and stripes began their majestic career. Three million war gardens there were, yielding products worth $350,000,000.

Yet the Hooverizing process has only just begun. This year the earnest appeal is for FIVE million war gardens and the elimination of

(Continued on page 15)

Put Your Machinery In Good Order

By J. W. Paxman, Specialist in Dry-Farming.

This week has been designated for farmers everywhere to put their farming utensils into proper repair and make ready for the maximum production and conservation of all farm crops.

A great national movement is on to have every farmer prepare his machinery and farm implements for the best service possible and to make sure against unnecessary delays when the real working season shall open upon him.

Never before in the history of the nation was so great a burden placed on the farmer or so much expected of him as at present.

To meet these demands in these serious times he must be 100 per cent efficient and utilize to the fullest his time and energy. More must be accomplished with less help if the imperative needs of the nation are to be conserved.

That there will be a real shortage of farm labor and farm machinery is evident. It is equally true that the farmers are required to produce more.

The element of time, then, for those who are wrestling with the farm work becomes a very vital and valuable factor. It is the one thing in connection with skill that measures for success. Any action taken or deed done that will save time is of real value to the nation at this critical period and it follows that any waste of time at this crisis would deprive our nation of a full measure of its strength.

Real Service Asked.

Under present circumstances no man can be a full-fledged, loyal citizen who does not utilize his time and give the best service possible to meet the crying needs of the nation. The spirit of American patriotism now, as never before, cries aloud for genuine service. To waste time, especially at the sacrifice of production, is nothing short of a sin. The gravity of the sin lies in the extent of the slothfulness, the idleness off the individual, or the wastefulness of his time.

A great weight of sin rests upon the farmer who does not fortify himself against the possibility of any delay happening when the stress of work is in progress.

To provide against any such an economic waste the farmers of the entire nation are asked to spend some time during the next week and overhaul every piece of farm machinery, including mowers, reapers, headers, harvesters, plows, harrows, cultivators, drills, threshers, engines, wagons, harnesses, etc.—put the same in good repair and have them in readiness for efficient use when the season shall open. If any repair parts are needed, place the orders for them at once.

Delays Mean Disaster.

Delays in this matter may be fraught with disastrous results and materially impede the work of the farm.

If any new farm equipment is needed it should be ordered at once as a matter of safety against an inevitable future shortage in materials.

Stocks of both repairs and implements are sure to be near the mark of depletion before the season is far advanced, and it is hoped the farmers of Utah will heed the warning of the national authorities and the appeals of the state and place all their farm equipment in prime condition and ready to meet any exigency in successfully carrying on the farm work, and without the danger of retarding the seasonal operations thereof, or hindering the progress rightfully expected of the farmers. The implement houses have done their bit and are ready to serve the farmers at this time.

Farmers, be up and doing. Let not next week close upon you without all your farm equipment placed in first-class condition or ample provisions made for its full efficiency.

In union there is strength.

Co-operation spells progress.

A fundamental policy of this bank is co-operation with its customers, making their welfare a prime consideration.

Walker Brothers Bankers

SALT LAKE CITY

HANDLING THE INCUBATOR

Artificial incubation has been in general use on the farm so long, that no argument is needed to show its value. The reason why the incubator is better than the hen is that eggs can be set at any time in winter or early spring.

I find it best to set the machine the first of February so as to bring off hatches for early pullets or for cockerels for the market. The hens may or may not become broody, while the machine is ready at any time for business. If one desires to raise a large flock of chicks the incubator can be made to turn out the amount desired. When hens are used for hatching, the broods come off in small numbers, generally scattered all through the spring and summer, while with the incubator hatching and brooding may be done in such a short time it will not interfere with other work of the season. I think it is about as easy to care for a hundred chicks from the machine as a dozen from one hen.

On many farms both hens and incubators are being used, the busy wife finding it as easy to care for the machine in the house as to bother with so many hens outside. The first thing with artificial incubation is a good machine, one from a firm which is guaranteed to do the work perfectly. When you buy a machine, always study well the direction for running it. The careful operator generally secures larger hatches from a cheap machine than the careless person from a high-priced machine.

The temperature of an incubator filled with eggs should be kept about 103 degrees. First start the machine and see if you can regulate the lamp and temperature so that a regular heat will be maintained day and night. The regulator must be set according to direction and must not be changed after once in good working order. Let the machine run two days and if it is found that a constant heat can be held, place the eggs in it. The eggs of course will be colder than the inside tepmerature of the incubator, and when they are placed in it the inside temperature will drop and remain low till the eggs have become warmed all through. Do not turn up the wick for increasing the heat when the first temperature drops, but wait for half a day for the temperature to rise gradually.

The best place for the machine in use is a room of the house where the night and day temperature are constant. A room where the sun does not shine in at the windows is best. An incubator is really a nice piece of furniture and should not be objectionable in any room of the house. After one gets used to the machine it will be as easy to operate as a lamp or range, and frequently less bother. The hen that steals her nest always brings off the largest hatch for she is not disturbed and is able to carry out natural requirements.

For this reason do not "quarrel" with the incubator when in operation. Let it alone and keep the door closed when it is going all right. When visitors come allow them to look at the machine and at the eggs through the glass door, but do not open the door after the nineteenth day and keep it shut till the hatch is fully completed. Many chicks are killed by opening the door of the incubator on hatching day.

Save Your Time and Strength on Washday

Electrically

The Automatic Electric Washer is one of the greatest of all Electric Labor-Saving Devices. It transforms the all-day drudgery of wash-day into a simple task, so easily and quickly done that it can hardly be called work at all.

More than 40,000 housewives use and recommend the Automatic Washer. The manufacturers guarantee it for five years—and so do we.

To make it easy and convenient for you to own and use one of these great labor-saving electrical appliances, we are selling them this month on very special terms. For a small cash payment an Automatic will be delivered to your home, ready for use. The balance of the price is payable in small monthly installments. You may have a full year to pay for the washer.

If you are now paying to have your washing done, your Automatic will save its cost and more, in actual money before the year is up. If you are doing your own washing, the Automatic will save you hundreds of hours of hard work—hours that you can give to needed rest and recreation.

Call at our store and let us explain to you how simple and how safe the Automatic Washer is to operate, and how it does its work perfectly without injuring the finest fabrics.

Utah Power & Light Co.

Efficient Public Service

INEDIBLE FATS MAY BE MADE INTO SOAPS

Process of making soap in home is simple—no fats fit for food should be used.

In these days it is decidedly unpatriotic as well as extravagant to waste one bit of fat. All housekeepers know that the price of soap is advancing rapidly and steadily. It is a very simple thing, indeed, to make your kitchen soap, yourself. But, do not use fat that might be needed for cooking purposes. Mutton tallow or fats that have been scorched and are of no further use for cooking may be made into soap in the following way. For each pound of fat, use one-seventh pound (1-7 lb.) of caustic potash (lye), dissolved in 1¾ cups cold water. Heat the fat to the melting point, then add the lye and water mixture; beat with an egg beater until an emulsion is formed. Or, if you have a large quantity, turn in an ice cream freezer. Unless you mix it thoroughly it will separate in layers. Pour into a pan and mark in squares.

If the fat is very dark or has a strong odor, it will be improved if it is clarified. To do this, heat the fat with water, stirring constantly. Allow to boil one half hour, then put aside to cool. Remove the hardened, cold fat from the water and scrape any waste matter from the bottom.—Magdalene Hahn, Colorado, A. C.

Good pastures are essential for profitable beef production. Plant pasture grasses over the waste lands and care for the pasture as if it were a regular money crop.

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.

NEW MEASURES TO SAVE WHEAT

Americans are buckling down to a gigantic task of conserving wheat. To meet the needs of the Allies and other demands upon us, including those of Belgian Relief and Cuba, we must send them 100,000,000 bushels of wheat in the next four months. Our commercial surplus from the 1917 harvest has already been shipped to them, so this amount can only be secured from the savings of the people.

To bring about the necessary cut in the consumption of wheat the Food Administration has put in force regulations which affect every branch of the flour trade and is urging the consumer to adjust his household to meet the needs of the hour. These measures bring home to us with startling force the necessity that war lays upon us. The following is a summary of the new regulations and suggestions.

(1) The mills under license regulation are required to produce a barrel of flour from 264 pounds of 58 pounds per bushel wheat. This is a white flour and represents a 74 per cent extraction as against 70 per cent, the average of last year.

(2) Millers are permitted to sell to jobbers only 70 per cent of their purchases of last year and are called on to distribute flour through their customary markets and channels of distribution.

3. The government through the Food Administration buys 30 per cent of the output of the flour mills. This reserve will be held to supply the needs of the Allies and supply any local shortage that may occur in this country.

(4) Jobbers can sell the retail trade in the proportion of one pound of wheat flour to one pound of such cereals as permitted under regulation.

(5) Bakers of bread and rolls must buy one pound of wheat substitute for every four pounds of wheat flour and must use a minimum 20 per cent of cereals other than wheat flour in baking.

(6) Bakers of all other bakery products and manufacturers of wheat products can purchase no more than 70 per cent of the wheat flour they used during the corresponding months of 1917.

(7) In public eating places Monday and Wednesday of each week are to be observed as wheatless days.

(8) The consumer is called on in purchasing flour to buy at the same time an equal weight of other cereals. He is asked to observe the two wheatless days a week and a wheatless meal every day, and to bake or buy only "Victory Bread."

These measures are swift, efficient and businesslike, they bear on all alike, and it is believed that the individual will give the same hearty support to this wheat conservation program that has been given by the trade.

WORKING FOR NOTHING

The war times have not especially helped everybody in the farming business. We all know men who are getting along no better today than they have been succeeding for the last 20 years. Some men have a great faculty of always laboring and getting nothing for their work. They seem to lack the business foresight that spells success, while others may be rated as efficient and all that but are lagging behind because they indulge in useless luxuries and are careless about paying their debts.

A farm cannot properly be called profitable unless it pays a fair rate of interest on the investment and gives the owner a reasonable wage for his labor, while, at the same time, the fertility of the soil is maintained. In every community there are farms on which the difference between the receipts and expenses is not enough to pay the interest on the investment, while the owner gets nothing for his year's work. In other words, he really pays for the privilege of working on the place. If he should sell out and loan the money at interest, he would have the income from his capital and he could then hire out to someone else and get pay for his labor.

This, however, does not mean that the ranch should be sold, for it is possible to make it pay, not only interest on the investment but a good salary in these ripsnorting war times when everybody is supposed to be getting rich. In every community there are farmers who are managing their estates in such a manner that, regardless of the season, the returns are enough to pay all the operating expenses, the interest on all the capital invested, and a good salary to the boss for his year's work. If the farm does not do this it does not mean that the owner is not working hard enough, but that there is something the matter with the system followed.

There are certain controlling factors or conditions in every community which determine the profitableness in farming. The only satisfactory way to determine what these factors are is to compare a large number of farms managed in different ways, and see which systems are getting the best results. By comparing the profitable and unprofitable ranches in different respects, it is possible to point out what there is about the profitable ones that cause them to make money. We notice that the fellow who succeeds is the man who does a good deal of reading and is quick to pick up the suggestions that come to him from time to time. The knowledge of the world is now assembled in such simple form that everybody can have the advantage of it and to be forearmed is to be forewarned in these peculiar times.—Denver Feild and Farm.

DOES AN EDUCATION PAY?

Does it pay an acorn to become an oak?

Does it pay to escape being a rich ignoramus?

Does it pay for a chrysalis to unfold into a butterfly?

Does it pay to learn how to make life a glory instead of a grind?

Does it pay to add power to the lens of the miscroscope or telescope?

Does it pay to acquire a personal wealth, which no disaster or misfortune can wreck or ruin?

Does it pay to learn how to focus thought with power, how to marshal one's mental forces effectively?

Does it pay a diamond to have its facets ground, to let in the light, to reveal its hidden wealth of splendor?

Does it pay to have expert advice and training, to have high ideals held up to one in the most critical years of one's life?

Does it pay to open a little wider the door of a narrow life? to push out one's horizon in order to get a wider outlook, a clearer vision?

Does it pay to experience the joy of self-discovery, to open up whole continents of possibilities on one's nature which might otherwise remain undiscovered?—Dr. Orison Sweet Marden in The New Success.

Stockmen are usually advised to keep their hogs a safe distance from streams and public highways when cholera is near. Would it not be more rational to advise that hogs be kept a safe distance from such sources of infection at all times? It must be remembered that there are a few unscrupulous men who continue the practice of disposing of their dead hogs by throwing them into streams and into the brush along public highways. Until this vicious habit ceases, hogs cannot be considered safe along streams or public highways at any time.

When you answer the advertisements always mention the Utah Farmer.

HEREFORD BULLS
At Auction Sale

Twin Falls Registered Livestock Association

Sells at the McMaster Sale Barn, Twin Falls, Idaho

Tuesday, March 12, 1918

50--HEREFORD BULLS--50

Ages 12 to 24 months, old enough for immediate service, weighing from 800 to 1200 pounds.

By an arrangement with some of the best breeders of Hereford cattle of Iowa, Missouri and Ills., we are enabled to bring to you this great offering of high class bulls of the choicest breeding and of such individuality and quality as will please the most discriminating buyer. They are the big boned, productive, beefy type, that give satisfaction.

Don't miss this great opportunity of attending this sale of the best lot of herd heading Herefords ever offered at auction west of the Rockies. Everyone registered and good enough to head any herd. Stockmen in need of bulls will appreciate this opportunity when they see this herd.

SALE WILL COMMENCE PROMPTLY AT 12:30 P. M.

Terms: Cash, or time by special arrangement before sale.
Hereford Headquarters: Rogerson Hotel.
All bulls will be cared for on ranch for thirty days if desired.

C. A. McMASTER, Sales Manager.

Walters and Clayton, Auctioneers **T. F. Warner, Clerk**

A few Shorthorn bulls will be offered. Also Reg. Percheron and Belgian Stallions and Mares.

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Transportation prepaid.
Every plant guaranteed to bear continuously this year.

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If not send in your order today.
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Vogeler Seed Company

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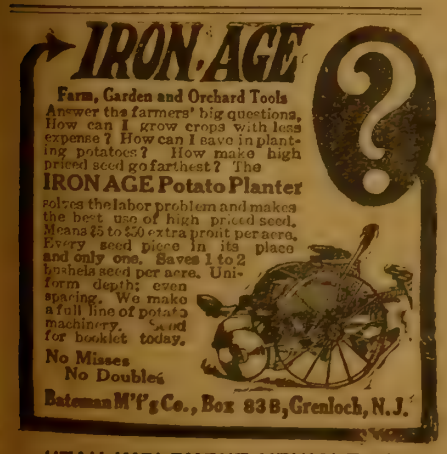

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

DAIRYING

THE MARKS OF A GOOD COW

By F. L. Vincent.

While it is a fact that the test of the milkpail and the Babcock machine ought to settle the question of the worth of a cow, nevertheless, there are certain marks visible to the naked eye that have a great deal to do with the matter. The physical appearance enters into consideration to a great extent. What are some of the leading features to be looked for in the cow which will prove to be worth the money we expect to pay for her?

With most practical dairymen, the udder is about the first thing examined. If that is bad, the interest quickly disappears. And this is all right, too, for there is no more essential factor in the production of milk than the udder. The good cow, then, will have a large, capacious udder, reaching well up in front and also attached high behind. The quarters ought to be quite uniform the front ones very nearly, if not quite, equal in size to the back ones. Too much long hair on the udder is not a good thing. It should be short and fine.

As for the teats, small ones are a decided drawback, for most men have large hands. There is such a thing, however, as over-large teats, which are tiresome to manipulate. The milk veins connected with the udder and teats ought to be of good size, rather crooked and entering the body through a large opening.

Now, we may look at the general appearance of the cow. To be capable of doing good work for a long time, the cow should be big, with a large well developed body. Much food is required and there must be a capacity for caring for it. The body ought to be thinner in front than behind, the back should be straight, neither hollowing down nor humped up. Where the legs join the body in front, the body should be wide, showing good breathing, capacity, without which we need not look for great vitality. The limbs ought to be strong and yet not clumsy, and the joints prominent but never enlarged.

The hair shows much about the quality of a cow. Coarse, long hair is not a mark of a first-class animal. We prefer it to be short, thick, soft and fine, coming from a skin that is pliable, soft and rich in color. The skin of a cow of superior quality is not usually very thick.

The eye, the muzzle and the ear each has its story to tell. A bright eye, a wide muzzle with big, open nostrils, and a big mouth are characteristics of superior cow. The inside of the ear ought to partake of the same rich color that marks the nose of a good cow. Just why it is, perhaps, we may not be able to determine, but it seems to be a fact that the best cows have foreheads that bend back a little. In a cow or a horse it is to be noticed that a bulging forehead indicates a bad disposition.

As we stand back of a good cow, we are led to observe that the hips are wide apart and right up with the spine. Care should be taken also when examining the front of the cow. Deformities of the shoulders are to be avoided. Even the tail has its story to tell of the quality of the cow. We do not often find big, clumsy tails on the choicest cows. Good breeding tends to long, slim tails, ending at the lower end in a nice switch. If the cow has her horns, these may be examined to determine age. It is not wise to buy a cow that has passed her prime for dairy purposes. She is not apt to last long as a profitable member of the herd.

Those who can't fight must do the next best thing they can.

THE MONEY IN THE CREAM

G. B. Sharpe.

Many cow owners are selling milk instead of cream because they are getting big prices for it—bigger prices in fact, than for a good many years. They are taking a good immediate profit and they argue, it is much less bother to care for milk than cream. In other words, they believe that selling milk brings better pay and with less work. As a matter of fact, the cow owner who sells milk does not get as much money from his cows as if he separated the milk at home, sold only cream or butter and fed the skimmilk to the calves and pigs.

Furthermore, when a man sells his milk he takes fertility from his farm, which, as a general rule is not paid back. When he uses a separator, selling only cream or butter, and raises calves and pigs on the skimmilk, with a proper grain ration, he increases the richness of his land. And the cow owner who thinks it is less work to care for milk than cream has not in all probability stopped to compare the labor necessary in each case. Handling cream involves less labor and expense than taking care of milk. A little figuring will show that the cow owner who separates his milk on the farm, selling cream or butter and feeding the skimmilk to growing calves and pigs, actually makes more out of his milk than the man who sells it whole.

Take a dairy of twenty cows, with an average butter-fat test of four per cent or four pounds of fat in each 100 pounds of milk. The milk at present is bringing the cow owner about six cents a quart. Butter-fat sells for about fifty cents a pound and better. Now is six cents a quart for milk as profitable for the cow owner as butter-fat at fifty cents a pound? A forty quart can of milk at six cents a quart brings $2.40, from which must be subtracted ten cents, the average cost of hauling the milk to town. This leaves $2.30, which the farmer receives for forty quarts of milk.

The forty quart can of milk weighs eighty-six pounds. If four per cent is fat, the can contains 3.44 pounds of fat, which, at fifty cents a pound, brings $1.72 as cream generally is sold on the basis of its butter-fat content. But this is not all. When eighty-six pounds of milk are separated on the farm the cow owner gets about seventy-four pounds of skim-milk in addition to the cream. Skimmilk, as feed for high-grade calves and pigs, is well worth $1 per cwt. considering the high prices for cattle, pigs and grain feed.

The seventy-four pounds of skimmilk therefore, would be worth seventy-four cents, which must be added to the $1.72 derived from the butter-fat, giving $2.46 as the money value of the cream and skimmilk in forty quarts of milk. Therefore the cow owner who separates his milk sells only cream or butter and feeds the skim-milk to calves or pigs, makes a margin of sixteen cents on forty quarts of milk over the cow owner who sells milk whole.

QUESTION AND ANSWER

Pleasant Grove, Utah.

Editor of Utah Farmer:

Can beet tops and crowns be siloed in the regular silo used for corn.

R. S.

Answer.

Beet tops and crowns may be kept successfully in a regular silo structure. It is not necessary to chop them.

Large numbers of stock men have siloed their beet tops and crowns successfully, using only a natural earth silo and the products appears to be just as good as would be had if the tops had been put in a regular silo.

The feeding results indicate a value of $7.00 per ton for the silage and the growers have averaged 50 per cent of the weight of the beet tonnage. In other words, a 12 ton crop of beets has averaged about 6 tons per acre of tops and the value is about $7.00 per ton, meaning a feeding value from the beet top silage which amounts to $42.00 per acre.

In one instance, it was found that it cost about 75 cents per ton to gather and silo the tops.

The Wellsville Cow Testing Association will start again the 1st of March, with L. H. Maxwell as tester. 500 cows were subscribed at $1.80 per cow.

When you answer the advertisements always mention the Utah Farmer.

U.S. LIGHTING PLANTS

"U. S. Light—Bright—White—Just Right!"

Daylight all time in home. Will wash, churn, fan, toast, supply electric flat iron, save hundreds of steps, provide water all over house. Operating cost low. A comfort and a joy.

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The Man-Saver

The Martin Ditcher is a man-saver, and a time-saver—therefore a money-saver. Two men, four horses and a Martin will make or clean more ditch *in one day* than they could plow and shovel out in *three weeks*—time and man saving are big items *now*.

Fine for Terracing, Dykes and Roadwork

Made in 2, 4 and 6 horse sizes; can be used with tractor. Works equally well on side hill or level, or in wet or dry soil. Handles rocks and cuts alfalfa roots without plowing. Cuts or cleans ditches down to 4 feet deep. *All Steel, Reversible and Adjustable. Investigate the Martin NOW.*

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Bigger and Better Crops Mean Victory

DO YOUR SHARE—START RIGHT WITH

Bailey's Reliable Seeds

SEND FOR SAMPLES AND PRICES TODAY

BAILEY & SONS CO.

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SALT LAKE

"Ball-Band" is the Vacuum Cured Rubber Footwear

This means extra long wear because the Vacuum Process forces rubber and fabric into one solid piece that is tougher than either rubber or fabric separately.

Look for the Red Ball and get the "Ball-Band." For men and women as well as boys and girls.

Write for booklet picturing the different kinds of footwear we make.

MISHAWAKA WOOLEN MFG. CO.
370 Water St., MISHAWAKA, INDIANA
"The House That Pays Millions for Quality"

FREE 1918 PLANTING GUIDE AND PURE SEED BOOK
GET THIS BOOK FREE
Tells how to cut living cost through productive gardens. Why our Pure, Tested Farm, Garden and Flower Seed grows the biggest crops—the finest flowers. A beautiful 112 page book in colors; Describes new 1918 varieties vegetables and flowers. Handsomely illustrated; beautiful home grounds, flower and vegetable gardens, landscaping, shrubbery orchards, farms. Veritable dictionary on gardening! Flower lover's delight! Berry-growers' book! An orchardist's manual! Plan your 1918 garden from this valuable book.
A postal gets it.
Gallowy Bros. & Co., Dept. 157 Waterloo, Iowa

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on every saddle. Send for our free catalog from maker to consumer.
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Only $2 DOWN ONE YEAR TO PAY
$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here. Earns its own cost and more by what it saves in cream. 125,000 now in use.
30 DAYS' FREE TRIAL Postal brings Free catalog-folder and "direct from-factory" offer. Buy from the manufacturer and save money.
ALBAUGH-DOVER CO., 2127 Marshall Blvd., CHICAGO

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

HOME

RECEIPES FOR USE OF RICE

Oyster Jambalaya.

Put a tablespoon of drippings in a pot. Heat and add a large onion chopped fine; brown and add a tablespoon of flour; brown, then add two or three tomatoes or their equivalent in canned tomtoes; stir carefully to keep the flour from thickening in lumps. Now add the hot liquor from 50 oysters with enough boiling water to make one and one-half quarts. Boil until the ingredients are well combined and add one cup of washed rice. Boil until the rice is tender, stirring often. Season as desired with cloves, parsley, bay leaf and celery, chopped fine; pepper, salt and a pinch of cayene. Add last of all 50 oysters and let them cook until the edges begin to curl, when it is ready to serve.

Scalloped Rice.

To prepare this economical dish use two cups of boiled rice, one cup of white sauce and one-fourth cup of finely shredded codfish which has been parboiled 10 minutes in hot water. Cover the bottom of an oiled baking dish with rice, then add the codfish and cover with white sauce. Sprinkle the top with bread crumbs and bake in a moderate oven until brown.

Eggs may be used to top this scallop instead of bread crumbs. Arrange fish and rice in alternate layers, finishing with rice. Add white sauce to each layer and sprinkle with paprika. Carefully break four eggs on top, dot with sauce, and season with salt and paprika. Bake in oven until eggs are 'set."

White Sauce—Melt two tablespoons of fat, and add two tablespoons of flour, and salt and pepper to taste. Cook thoroughly until blended. Pour in gradually one cup of milk, stirring constantly. Cook until smooth and glossy.

Cheesed Rice.

Put in a double boiler or chafingdish 2 cups of boiled rice, one-half cup of hot milk, and heat thoroughly over water. Then sprinkle lightly over it half a cup of grated cheese and a few shreds of pimiento. Cover tightly and let stand over the hot water until the cheese is melted. This is acceptable for Sunday tea.

Rice With Vegetables.

Rice can be combined successfully with vegetables, and some of the dishes are substantial enough for meatless days. Red beans with rice make a favorite dish in many parts of the world.

Red Beans and Rice.

Soak overnight a pound of red beans. Then simmer for at least four hours in two full quarts of water. When the beans are quite soft, add a teaspoon of salt, a teaspoon of fat, a small onion (minced) and half a red pepper. Continue the simmering process for two hours longer.

Serve with boiled rice. The combination is not only good but represents a complete ration.

Cabbage with Rice.

Boil a head of cabbage until tender, drain and cut out the heart and center, fill in the opening with a cup of boiled rice, which has been highly seasoned with salt, pepper and fat. Pour over all a cream sauce. Chopped pimientos may be added to the rice or paprika dusted over the whole after the sauce is added. This makes an excellent dish when the meat course is light.

Rice and Onions.

Chop six onions and put them into a frying pan with one tablespoon of fat. When tender add an equal quantity of boiled rice, and season with salt, paprika, one teaspoon of kitchen bouquet, and one teaspoon of lemon juice. Stir lightly together, heat thoroughly and serve very hot.

Rice Farce.

This combination of vegetables makes a flavory accompaniment for warmed up, left-overs of meat.

1 pint chopped tomatoes, 1 cup rice, 1 cup chopped celery, 1 cup chopped olives, ½ cup chopped peppers, 1 tablespoon minced onion, 1 teaspoon salt, ¼ teaspoon paprika.

Rub the tomato through a sieve, and heat, then add the rice, chopped celery, seasoning, and other ingredients and boil for five minutes. Then put it on the side of the range and simmer for one hour until the ingredients are thoroughly blended.

Spanish Rice.

This is a deservedly popular dish and like rice farce is excellent to serve with beans for meatless dinners.

4 teaspoons fat, 2 green peppers, 1 onion sliced, 1 cup rice, ½ tablespoon paprika, bit of bay leaf, 4 large ripe tomatoes or ½ can tomatoes, 2 tablespoons sugar, 2 teaspoons salt, ¼ teaspoon white pepper, ground thyme.

Heat the fat in a heavy frying pan, and in it brown deliciately the peppers and onions. Remove and brown the rice. Add all other ingredients. Cover and let simmer on the back of the stove until rice is soft; add boiling water as the rice swells.

These numerous way of using rice recipes do not cover the usefulness of rice. Soups and desserts have not been touched, a whole volume could be filled with recipes on rice cookery. Less meat and less wheat, more rice might be adopted as the conservation program of America while the world shortage of food lasts. Get acquainted with rice, the food of millions.

ATTRACTIVE DRESSES MAY BE MADE FROM OLD WOOL SUITS

Ina Cowles.

Wartime conservation should apply to clothing as well as to food and fuel. Attractive dresses may be made from old wool suits that are not too badly worn, if the material is used in combination with figured wool or silk.

Before making over a suit or dress, one should consider whether it will look well after remodeling, and whether it is to be made at home or by a dressmaker. If the changes to be made are so great that it cannot be used as it is, the first step is remodeling is to rip the garment apart, and then to clean all spots and dirt from the cloth. If it is a good piece of material, it may be washed either in a lukewarm solution of any good white naphtha soap or with soap bark. If it is light colored, faded or streaked, it is well to dye it or have it dyed.

In selecting a pattern, choose one which is particularly adapted to the lines of the suit to be remodeled. If the skirt fits closely at the waist and is tight at the hem, raise the waist line and use a wide band of new material at the bottom. This gives greater width at the hem and fulness at the waist.

A Russian blouse or a jumper could be made from the jacket. The old sleeves may be recut if they do not fit too closely and a cuff of the new material may be added. If new sleeves are used, make the cuff of the old material. If the waist is much pieces, the piecings may be covered by using one of the many styles of large collars.

In choosing new material to use with the old, be careful that the weaves of cloth harmonize. Do not use two kinds of twill together ,and be careful not to combine a brocaded material with one that has a wide twill. Broadcloth goes well with serge, gaberdine, or wool poplin, as also do taffeta or silk poplin The new material may be plaid, striped, or plain.

A potato crop this year is all important. The farmer who plans only two acres can well afford to use a modern planter. The uniformity of the hills and the more certainty of the work is good reason for the moderate expense of a machine for this important work. The world claims of the farmer every effort to enlarge the food supply. Besides good seed and proper ground a machine will prove a great economy.

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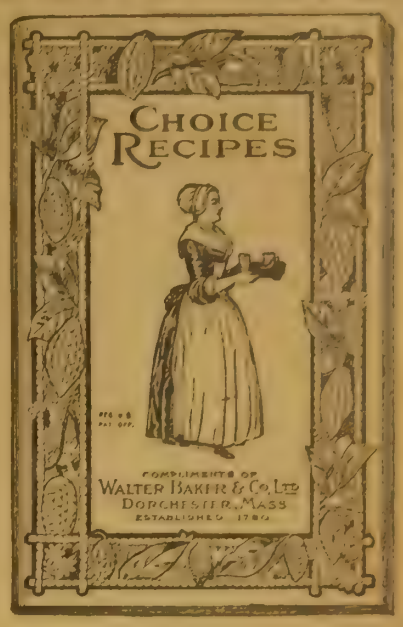

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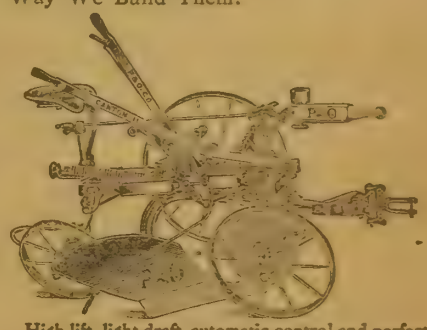
Made right or left hand, all standard sizes, all styles of bottoms, to meet local requirements. For 18 years the leading riding plow in this country. "It's the Way We Build Them."



High lift, light draft, automatic control and perfect bottom. Removable dust proof wheel boxes with hard oil screw caps. Beam is high in the throat, giving ample clearance in deep plowing. Double bails hold plow steady and rigid, making it run absolutely true and leaving a smooth, level furrow bottom. Only truly automatic rear wheel control ever put on a plow; holds rear wheel rigid regardless of ordinary weaving of team, but allows it to castor naturally on the turn, making a square turn possible.

Collars and linch pins inside the screw caps take end thrust off of boxes. Bottom so hung in frame as to throw weight of plow, dirt and driver all on wheels, insuring light draft. Spring washers prevent nuts from working loose. High grade coulter with chilled cone take-up bearings, and quick adjustable clamp.

Powerful foot lift. Hitch adjustable without removing bolts or pins. Bottom is built on a double ribbed malleable frog, the strongest made; strong in the bend where steel frogs are weak. Different types of P & O bottoms interchangeable. P & O Diamond Plows have every convenience and adjustment for the performance of perfect plowing.

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Devoted to Agriculture in the Rocky Mountain Region

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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

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OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

In some states wheat is only handled in bulk, sacks are not used.

How about the increased poultry. Have you put the wooden hen to work?

Test your seeds. Be sure they are free from weed and other seeds before you plant them.

Don't be influenced by some sharper or promoter to trade your liberty bonds for some wild cat stocks.

The clean up days of spring will soon be here There ought to be clean up days all the time.

If for any reason you were not able to go over your machinery last week do so at once and order any extras or new parts needed.

Plenty of vegetables in your garden will help to reduce the cost of living and will help to save the wheat for sending abroad.

Seed time will soon he here, are you ready to start planting. Is your seed recleaned and treated ready for planting. Right now is the time to get ready.

If you can not sell your potatoes they have a feeding value of about one fourth the price of grain. The prices vary in different localities, one can take local prices and figure whether it is best to sell or feed his potatoes.

Get out the road drag just as soon as the roads show any signs of drying up. Too often we wait to long and then the road becomes so dry it will not pack down good and hard when it is worked with the drag.

The art of catalog making has advanced wonderfully in the last few years. Some of them are like an instruction book, they go into every detail of the machinery that is offered for sale. If you do not send for an incubator, seed, engine or other catalogs that advertisers are offering, you are missing a good chance to learn things you ought to know.

How many of our readers are planning to put a few sheep on their farm. There is only one farm out of seven that has sheep on them. The high price of wool, mutton and lambs should make the keeping of a few sheep on the farm profitable.

NAMING THE FARM

A good name for any farm that is well known becomes a valuable asset. In this state a farmer can record the name of his farm and no one else can use it. A certificate is issued by the State Auditor bearing the name and location. The products and livestock of a registered farm can be advertised under that name and will be a help in selling or marketing any thing the farmer produces.

FARM HELP

We have plenty of help for our farm work in this state if it was properly organized and used in a systematic way.

Even with the hundreds of boys who have gone to the front we believe the labor problem can be solved by a co-operative effort. System and organization and then well directed labor is what we need. Some places will have a surplus, others will need help at certain seasons, to get results all concerned must co-operate together.

HAVE YOU ORDERED REPAIR PARTS

The importance of ordering NOW your repair parts and any extras you may need for putting old machines in good working order, does not seem to be understood by some farmers.

Our government wants to know the amount of steel needed by implement manufacturers, the supply is limited, there are enormous demands. If you do not make know your requirements, both repair parts and new machinery, chances are you will not be able to secure them when you need them.

Implements and labor saving machinery, will be your big help this year so you can not afford to take any chances by neglecting to place your orders now.

BE PREPARED

The importance of being prepared with harrow and leveler to work your ground at the right time so as to retain the moisture and prepare your seed bed, should be understood by all farmers. To get a good stand of beets or grain means a good crop. Get on the land just as soon as possible and work it down with harrow and leveler both the fall plowed land and land you will plow this spring, a good fine mulch will retain the moisture and make a better seed bed. Done at the right time it does not take so much work. Too early or too late means a loss of crop, a short stand. One must know their soil and be prepared to act promptly. No two tracts of land will be alike. If you want to get increased production, which means increased profit, be prepared to work your seed bed at the right time.

"BLUE SKY" STOCKS

We have a number of times suggested to our readers about being careful in buying stocks that "selling agents" are so willing to dispose of. Some of these smooth promoters think they can work the farmers and often start their selling campaigns in the country or farming communities.

We want to commend the Commercial Booster Club of Logan for the stand they have taken in the matter. They recommend that, "the sale of any questionable or unknown stock should be discouraged."

The government has just exposed some schemer for trying to organize loan associations charging so much for doing it.

Good reliable stocks do not have to be peddled off, the way the promoters do it. The investment in safe, dividend paying stocks is all right. But when a man is so anxious to "share" with you the profits, be careful. First class stocks are seldom, if ever sold by promoters, it is usually those with a long chance and the buyer takes the chances.

DAIRY PROGRAM FOR 1918

The Western Dairy Division has outlined a splendid program for this year. In three words it is, culling, feeding and breeding.

Cow testing associations will be emphasized, to find the low producers, to encourage the keeping of records so that one knows just what each cow is doing.

High cost of feed means a more careful study of a balanced ration. How to secure good feed at a low cost. How silage will help to reduce the cost of keeping a dairy cow.

How to secure better and higher producing cows, by better breeding, keeping of better bulls. The value of co-operative bull association.

This program will help the farmer or dairyman and also help to produce more dairy products for the nation.

THE VALUE OF MANURE

Do you know the actual value of a load of manure? Are you going to increase your production by putting as much manure on your land as possible.

Many farmers are hauling out their manure and where they can not get onto the land they are piling it on the side of their farm and will use a manure spreader as soon as they can get on the land without hurting it.

One authority has said that every load of manure, of three tons, that is put on reasonably good land and properly applied will produce an extra ton of sugar beets on that acre of ground. At present time several loads a day can be hauled onto the farm depending some what on the distance.

The increased production received, where the land is well manured, give the farmer good returns for the time he spends in putting this manure on his farm. No work is more profitable than hauling manure.

PLAN TO FEED MORE LIVESTOCK

A farmer who has just returned from an eastern trip was much surprised to find that the alfalfa hay he had been shipping to Kansas was being ground up and mixed with molasses that came from Utah and made into a prepared feed. After being made into a stock food it was shipped out to feeders or farmers who were fattening lambs that had been purchased in Utah and shipped east.

Why don't we feed our own livestock, the products of our farms and mills and ship the finished products? If we want to keep up the fertility of our soil we must feed our alfalfa and not ship it away. Increased profits will come to the farmer who feeds livestock on his farm. We have all the advantages that the eastern farmer has and in many cases better chances. If he can make a profit why not the farmers here. We must plan to feed more livestock if we want to make more money.

JOIN THE FAR BUREAU

There are many reasons why a farmer should be a member of the local farm bureau. Much more can be accomplished by co-operative efforts than where one is working alone. No one farmer could hope to eradicate or destroy pests like gophers or grasshoppers, it must be done by working together. The fighting of weeds, the killing of sparrows, must be done by co-operative effort. One farmer might free his farm from any of these pests but it would soon be over run again unless his neighbor had done his share in helping to control such pests.

When farmers are organized and working together, the County Agent has a better opportunity to serve the people, better results can be accomplished. Co-operative buying of seed and other supplies can be done. Purchasing of pure-bred stock, so important to many of our communities has been accomplished by the farm bureaus.

United we stand, divided we fail, is just as true today as ever. The thing for farmers to do is work together for better agriculture, better farm life. Join the local farm bureaus and help make them what they ought to be, an organization through which the farmers can speak and act.

LOOK AFTER FARM TOOLS

Now is the Time to Put Every Farming Utensil in Working Order.

Farm machinery in recent years has played a very important role in crop production, and this year its place in farm operations is more important than ever before. The proper amount and kind of tools will enable the farmer to work more land and obtain better returns. In fact, the increased use of farm machinery frequently makes it possible to manage the farm with less help. One of the greatest causes of deterioration of farm tools and implements is their exposure to the weather and the failure upon the part of the farmer or laborer to clean them properly before they are put away for the season when they are not in active use. There is a wide variation in the length of life of those farm implements treated properly and those left to rust out in the fields. This difference is sufficient to pay high interest on the initial cost of good farm machinery. The lack of proper storage and care during the winter months is responsible for much of the depreciation. This season also is the best time in which to repair machines and put them in proper mechanical condition.

The farmer has everything to gain and nothing to lose by placing his order as early as possible for new machines and repair parts which will be needed next season. If this fact is true in normal times, its importance is magnified many times now that shipments frequently require longer time.

The farmer has been advised times without number concerning the desirability of overhauling farm tools and implements during the slack season. Whether such advice is necessary or whether it is acted upon in normal times is not a question to be considered now. The need for ample machinery, running smoothly and without breakdowns in 1918, is more important to the farmer than ever before. To this end steps should be taken this winter.

Growing Demand For Hogs

Feed your hogs in a way that will produce well balanced, firm, yet tender meat. Such hogs bring the highest prices. Give them

High Protein Tankage

and it will help develop them to this standard. Make sure your hogs brings the highest market prices by feeding them "High Protein Tankage" and other good feeds.

Ogden Packing & Provision Co.

Ogden, Utah.

Any Slackers In Your Herd?

This is no time for slackers in the dairy herd. If a cow is not producing a maximum amount of milk, there is something wrong. A liberal feeding of

SUNRIPE

Stock Feed

brings remarkable results. It's economical too. Sunripe Stock Feed is a scientificaly balanced compound of oats, barley, cotton seed meal and sugar beet molasses. Write for our free booklet "Feeding for Results."

Utah Cereal Food Co.

Ogden, Utah.

—o—

ONE-THIRD POTATO, IS NEW WAR BREAD

Lucy M. Van Cott, University of Utah.

Though made of one-third potato the newest war bread is found palatable, digestible and nutritious.

Many food experts in the State have pronounced it impossible to substitute more than ten per cent potato for flour and have successful bread. But it seems reasonably certain now that it can be accomplished with as much as one-third potato.

The recipe is as follows:

Bread That Contains 33 1-3 Per Cent Potato:

1¼ cup liquid (milk preferred).
2 teaspoonfuls of salt.
2 teaspoonfuls of sugar.
2 teaspoonfuls of fat.
⅛ to ¼ yeast cake.
1 pound of flour.
½ pound of riced or sieved potato.

Directions—Into the scalded milk or boiled water put salt, sugar and fat. Cool to luke-warm. Add yeast cake and riced potato. Stir in flour and knead or mix well. Let dough double its bulk. Knead and shape into loaf. Place into tin. Let double its bulk again. The ordinary wheat loaf is baked 1 hour. Bake this loaf 1 hour and 30 mniutes. Cool without covering. Store in clean jar or can.

—o—

CHANGES IN HARVESTING

With a sickle a man could harvest one-half acre of grain a day.

With a scythe a man could harvest one acre a day.

With the cradle a man could harvest 2½ acres a day.

With the first reaper, invented in 1831, a man could harvest six acres a day.

With a modern binder a man can harvest 20 acres a day.

With the modern tractor and two binders a man can harvest 40 acres a day.

With the modern harvester thresher two men can harvest, thresh and bag from 12 to20 acres a day.

—o—

Deep early plowing is best, but if the plowing must be late it should be more shallow in order that the soil may be pulverized and firmed into a good seed bed condition before the crop is planted.

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When you hatch them in a Buckeye or Queen Incubator from your own flock instead of shipping them in from the outside. Let us prove it. Send for full particulars today.

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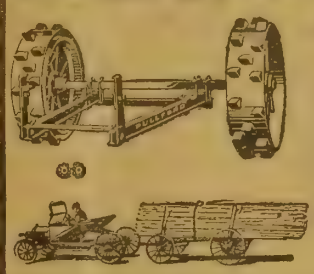

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It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

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This West-wide distribution has been made necessary *by demand*—a demand for a delicious, sustaining food-beverage; a demand that is met by Ghirardelli's, and by this alone.

Result? Today Ghirardelli's Ground Chocolate is in daily use in more homes in the West than all other brands combined.

As a beverage it is beneficial; as an aid in baking and cooking it is invaluable.

Be sure to ask for it —at "the store where you do your trading."

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

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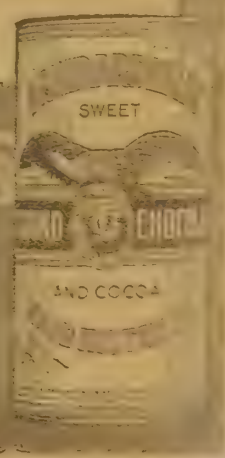
Ghirardelli's Ground Chocolate



LIVE STOCK

WATCH THE SOWS AT FARROWING TIME

L. A. Weaver, Missouri A. C.

Farrowing time is the most critical season for the swine herd. At no other time will care and attention pay greater returns. The results of several months of labor and care may be lost by neglect at this period. Emphasis is justly placed on prolificacy of brood sows, but the number of pigs which the farrow is not the most important consideration. The number they raise determines whether the sow has been kept at a profit or loss. The sow which farrows five pigs and raises all of them is more profitable than the one which farrows fifteen and saves two or three. The disposition of the mother has much to do with the number of pigs she will raise. The way she is handled influences her disposition and, consequently, the results that may be expected.

Strict account should be kept of breeding dates and a week or so before a sow is due to farrow, she should be removed from the other sows to the quarters where she is to farrow. The feed just before farrowing should be the same kind that will be fed while the sow is suckling her pigs. This feed should contain plenty of protein and should also be laxative in nature. A ration of corn 50 per cent, shorts 25 per cent, bran 15 per cent, linseed oil meal 10 per cent, should give good results; and while it is not recommended as the best ration, it can be taken as an example, and similar ration may be used successfully. A few days before the sow farrows the amount of the ration should be reduced somewhat. If this is done, and a laxative feed is fed, the sow will come up to farrowing time without fever and will, for this reason, not be apt to injure the pigs by her own restlessness.

The quarters should be warm enough that excessive bedding will not be required. If too much bedding is provided the pigs may become hidden in it and smothered or crushed. A bushel or more of wheat chaff or cut straw will be sufficient. After the sow farrows it may be necessary to change the bedding, but the amount need not be increased. Dry bedding is more important than the amount of bedding. It should be changed often enough to maintain a dry bed.

Individual cots will be found valuable for keeping the sows away from other hogs at farrowing time. Usually the less the sow is disturbed when she is farrowing the better. It is important that one be on hand, but unless she needs assistance, keep away from her. If the sow needs assistance, be as quiet in giving it as possible. The pigs should not become chilled before they have dried and suckled. If the weather is very cold, a lantern hung in the top of the cot will be of service. As such times, if the sow is gentle, it is well to place each pig as soon as it is farrowed in a barrel or box containing some warm bricks covered with old sacks. The pigs may be left here until they are dry and lively enough to be returned to the sow. If the pigs do become chilled, there is no better way to revive them than to dip them in warm water.

The sow should not be fed much for twenty-four hours after farrowing. The pigs are not able to take much milk, and the milk flow should not be stimulated for the first few days. The sow will be more or less feverish and should have all the water she will drink but will not need feed for a day or so. If the weather is cold, it is well to take the chill off the water before giving it to her. The first feed should be the same kind that she received before she farrowed and should be fed in small amounts as a thin slop. The feed may be gradually increased as the pigs become able to take the milk until the sow receives all she will eat of a good, laxative, milk producing feed. Ordinarily about two weeks should be taken to get her on full feed. After the pigs are old enough to take all the milk the sow can produce, she should be fed liberally since there is no better way of feeding pigs than through the mother.

—o—

ROOTS CHEAPEN HOG RATIONS

By William Hislop, Professor of Animal Husbandry, Washington State College.

During the winter roots can be fed advantageously to brood sows, growing gilts and fattening shoats; however, as an exclusive diet, roots are not satisfactory because they are too bulky and watery for the restricted capacity of swine. Their value lies in the fact that they reduce the amount of grain required to the pound of gain, exert a tonic effect upon the digestive system, thereby promoting better health, and add variety to the ration.

During the next three or four months an excellent daily ration for pregnant brood sows should be seven-eigths of a pound of roots, six-sevenths of a pound of red shorts, fed as a warm slop, and alfalfa hay freely fed in a rack: As pregnancy advances, the roots should be reduced and the red shorts increased. For growing gilts a ration similar in composition, though less in bulk, would promote efficient and economical development.

For fattening shoats now weighing 90 to 125 pounds of daily ration of four to six pounds of roots and three to five pounds of red shorts and ground barley, equal parts by weight, would be a mixture well adapted to muscle and fat production; however, in the later stages of finishing, the daily allowance of roots should be cut down to two or three pounds and the concentrates increased to seven to eight pounds. The grain should be fed as a warm slop made by pouring warm water over it just before feeding.

At the Copenhagen experiment station 204 pigs fed whole or sliced roots plus skimmilk, whey and grain, demonstrated that 7.5 pounds of mangels or four pounds of sugar beets are as good as one pound of ground barley when all are combined with dairy by-products.

At the Utah experiment station pigs fed shorts in combination with sugar beets and also with beet pulp, made daily gains of 1.2 pounds each. In the above trial 396 pounds of sugar beets or 609 pounds of wet beet pulp proved equivalent to 100 pounds of wheat shorts.

At the Oregon experiment station cooked or steamed potatoes were fed with barley at the rate of three to six pounds of potatoes to one pound of barley. In this case from 340 to 381 pounds of cooked potatoes replaced 100 pounds of grain, while it required 552 pounds of raw potatoes to replace 100 pounds of barley.

Artichokes, pumpkins and squashes may also be used as grain savers. Arichokes have effected a saving of 150 to 200 pounds of grain for each 100 pounds of gain made, while 367 pounds of raw pumpkins plus 273 pounds of grain produced 100 pounds of gain with fattening pigs

In summarizing the experimental work reported, it should be said that roots alone are never advisable, but as grain savers and health givers they have a rightful place in hog feeding at all times, but more so today than ever before.

—o—

CARE OF MARES BEFORE FOALING

E. A. Trowbridge, Missouri A. C.

Carelessness and lack of knowledge are responsible for a large number of losses which occur during foaling. This is doubly true because in case of trouble, aid must be given quickly and accurately. The loss of foals be-

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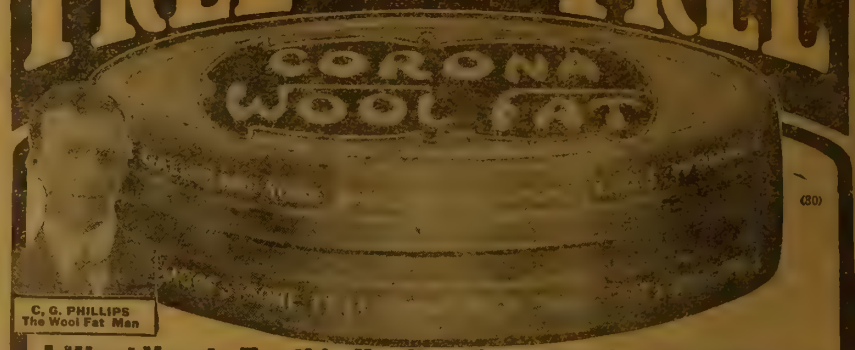

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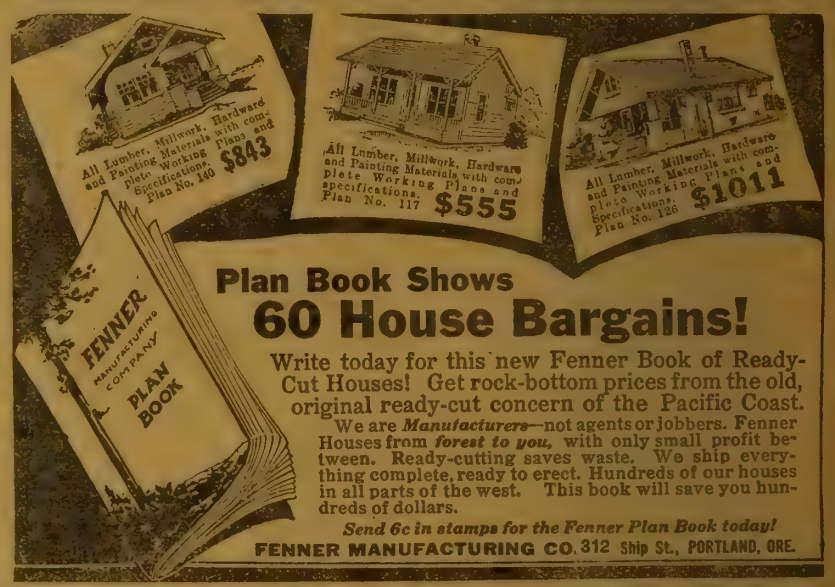

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fore weaning time has been estimated from ten per cent to twenty-five per cent of the crop and the greater part of this loss occurs before the foals are two weeks old. Much of it can be avoided by attention and care.

Prior to the birth of the foal, mares should have enough of good wholesome food and water; plenty of exercise; clean, light and altogether sanitary quarters along with regular attention directed or given by a man who likes the horses and who looks after this matter not from a sense of profit and loss alone, but because of human interest and duty.

On the average farm the problem of exercise is not troublesome. The great difficulty is to find help that will handle broodmares carefully. Brood mares may work up to within two or three days of the date of foaling, and be benefited by it. They should be given moderate but steady work. Such mares should not be given work which requires backing heavy loads, or where there is a chance of slipping. But they can and should be worked.

Feed for this class of horses should always be of the best quality and of such a composition that it will not cause digestive trouble. As a general rule mares doing light work should eat approximately one pound of hay and one pound of grain per day per 1,000 pounds live weight. This matter should be governed, however, by the condition of the mares and they should be gaining in condition with digestion in best of condition as the critical time approaches.

Mares should be given a box stall at least four weeks before they are due to foal, in order that they become accustomed to it, and may also have a place large enough to be comfortable during the night. The stall should at all times be kept clean and well bedded, but particular care should be taken regarding these details when the foal is born. If truly known the source of navel trouble in foals is generally a dirty stable or yard. As a safeguard against "navel disease," besides the scrupulously clean stall, the navel should be tied and treated with a strong disinfectant, such as a solution of carbolic acid.

If the season of the year and other existing condition permit, mares may well be allowed to foal on grass which lessens the danger of infection.

THE HOUSEWIFE'S GARDEN

(Continued from page 3)

wheat bread. For beans, also plenty of room should be found, and a selection made of several varieties, which will ripen at different dates and keep up a continuous supply of this valuable meat substitute over the longest possible period.

For fats the vegetable garden furnishes no corresponding substitue, until the cultivation of the soy bean has been further tested in this climate and its best mode of preparation demonstrated by reliable investigation—then fat in its cheapest form will be also a product of the vegetable plot. A twenty foot row of sugar beets is another timely addition to the garden, boiled with water each beet will furnish a thick syrup for use in making desserts.

The most urgent need is the production of a sufficiency of roots, such as carrots, turnips, parsnips, and beets, to permit of ample winter storage as well as immediate consumption and the claims of the Jerusalem artichoke must not be overlooked—from the point of delicious flavor as well as of food value in which this tuber ranks next to the potato. Last but not least—the ordinary seed list should be revised, and several varieties of lettuce, cabbage, and spinach should be added to those kinds which experience has shown to be tried and trusty friends.

These vegetables serve at least three purposes. They are wholesome, attractive and appetizing when properly prepared. They furnish the essential "roughage" in the day's diet, which counteracts the prevalent tendency to constipation, a cause of a very high percentage of poor health today. Finally—these garden foods give feeling of satisfaction from the point of view of bulk to those men and women whose weight increases more rapidly than is beneficial, while, by eating garden produce they do not feed this tendency to put on flesh, which in such cases is rather a menace to health than an evidence of its possession.

LENGTHEN THE SUMMER WITH A HOT BED

By T. H. Abell, Assistant Horticulturist Utah Agricultural Experiment Station.

The 1917 War Gardens constitute a splendid barometer of the patriotism of the American people. Yet, in the 1918 War Gardens, we are asked to double the production of last year. Among the many means of increasing the production of the garden is that of lengthening the growing season with a hot bed. Few people realize the benefit and pleasure to be derived from such an investment. It is not only possible to have fresh vegetables earlier in the season, thus cutting down the food bill, but also to start certain long season plants and early start. There can be transplanted to the garden later in the spring after the danger from frost has passed.

In planting for a hotbed, it is well to choose a site with southern exposure, protected from the cold winds on the north and west, and situated on well drained ground. The place should be near the house so it may be watched more conveniently, and also near the water supply.

The pit for a hot bed should be dug in the fall before the ground freezes, and filled with straw to keep out the snow and frost, but it is not too late even now, to dig the pit. It should be a little over six feet wide, two feet deep, and as long as necessary, according to the number of sash to be used. Sash are of a standard size; six feet by three feet. The pit should be boarded upon sides and ends; the boarding should extend above ground, eighteen inches on the north side, twelve inches on the south side, the upper edges of the ends following the slope from north to south sides. The slope catches more of the sun's rays than if the top was flat, and provides good drainage for rain water. If more than one sash is to be used, it is well to nail a strip of wood connecting the north and south sides so that the two adjoining unsupported sides of adjacent sash will rest upon it, thus strengthening the frame and keeping out the rain and cold drafts.

Hot bed sash may be bought from seed houses, dealers in farm implements, or made by local carpenters. If they are hard to get or seem too expensive, one may use unbleached sheeting which can be nailed to one side of the frame and fastened to a pole on the opposite edge so that it can be rolled up like a curtain. The frame is now ready to receive the manure which is to furnish the heat for the growing plants.

GOOD READING

We once had an old friend who engaged in work that kept him alone and entirely away from those whom he knew best, for weeks at a time. We told him that we often felt sorry for him. His reply has always remained with us, for he said, "I am never lonesome when I can have good books to read." This man realized that in reading a book he was merely availing himself of what some writer had thought and said. He was listening to some one talking. He was following the thought of the writer and either agreeing with him or disagreeing with him. For the person who can read understandingly the world offers no limitations. Progress can not be made by merely doing what others have done. Great discoveries are never made by merely following precedent. Good reading is the basis for progress, but even good reading cannot add much to the world's sum of knowledge. Reading alone will not accomplish results except in the mind of the reader. Accomplishment is not made by giving commands unless the commands are executed. A farmer may read and study forever about improved methods, but his farm will not be improved and his crops tended and his livestock made to produce increased returns unless the ideas gained in reading are put in practice. good reading and good conversation are the basis of progress, but unless they are followed by action they will avail nothing tangible. Get good reading. Take and read the best farm papers, the most elevating books and magazines. Knowledge is to be used. To accumulate knowledge and not use it is miserly. It is not returning to society what society deserves for supplying it.

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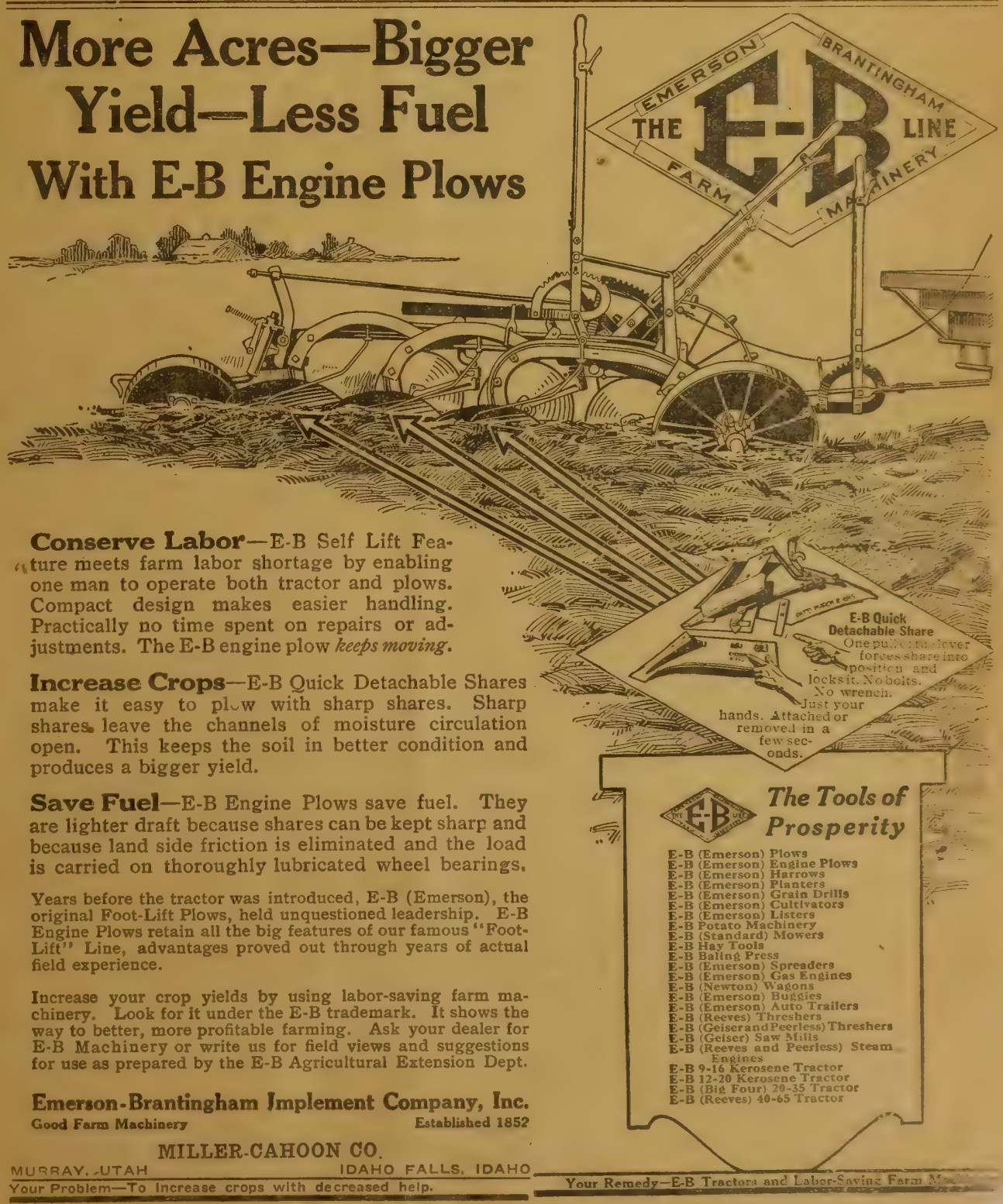

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FARROWING TIME

Many people have been urged to grow more hogs this year. For the first time some have the care of sows at farrowing time. Because of the urgent need of hogs, the spring crop this year should have more than ordinary care. Every pig that it is possible to save must be looked after. This takes a bit of extra care—probably a few sleepless nights and getting out in some mighty nasty weather—but these inconveniences are necessary if we are to meet the demands for pork.

Do not confine the sow in her farrowing pen more than forty-eight hours before farrowing time if it is possible to avoid doing so. Reduce the heavy feed to some extent, probably about half, for that length of time. The farrowing house or pen should be comfortably warm, well ventilated, and well lighted. Above all else, it should be well bedded. Do not allow any circulation of air under the floor. Too many hog growers make the mistake of bedding too lightly. Heavy bedding naturally makes the sow confortable and warm—conditions necessary if she is to be quiet. Use wheat or rye straw. Wild hay is good, as is millet. Do not use oat straw unless there is absolutely nothing else at hand.

Under no circumstances should the sow have any feed whatever for twenty-four hours after farrowing. She must, however, have plenty of water at frequent intervals. This water must not be icy cold—that drawn directly from the well is about the right temperature. Commence after twenty-four hours feeding lightly, increasing the feed gradually for probably a week or ten days, when she may be gotten onto full feed, conditioned on the size of the litter and the milking qualities of the sow.

Look Over Pigs Before Each Feeding.

A good herdsman, for the first week at least after farrowing, will look the pigs over carefully before each feeding. If any indications of scours appear, the sow's feed should be reduced immediately or possibly cut out entirely. A heavy feed of rich slop given when scours begin to show up possibly may kill the entire litter. A little extra care for these few days is absolutely necessary.

When the pigs are from four or five to ten days old, be on the lookout for thumps. The best looking fat little pig is the one to go first every time. An almost certain indication is a little roll of fat around the neck. While there is no known cure for thumps, the trouble is quite easily prevented. Plenty of exercise for the pigs is the answer. In cold stormy weather out-of-odoor exercise is impossible, but if a central farrowing house with an alleyway, is used, get the little fat fellows into the alley and put in about ten or fifteen minutes three or four times a day chasing them with a buggy whip, until they are pretty well tired out. If this is impossible, try putting one or two of the little pigs at a time in a large barrel or hogshed, placed by the farrowing pen. The pigs will hear the old sow making a fuss and in running around the barrel hunting for a corner to climb out, generally will take the exercise necessary to ward off thumps. A considerable part of the battle is won if the litter gets past the first ten days or so with a good start.

MORE LIVESTOCK NEEDED

It is customary nowadays to blame the war for all advancing prices. In many cases there is no doubt but that the war is to blame, but in other cases speculators have taken advantage of existing condition to boost prices. That there is an actual shortage of foodstuffs all over the world admits of no doubt. It could not well be otherwise. Millions of men formerly engaged in tilling the soil are now making a business of war and as a natural result food production has been interfered with. Last year climatic conditions were also against large production and it now looks as though conditions this year may not be much more favorable. This means continued high grain prices, which is bound to still further interfere with live stock production.

There is a widespread movement among farmers to sell off their cattle because even at present high beef prices many are of the opinion that cattle cannot be profitably maintained.

In the present confusion of things let us not overlook the fact that previous to 1914, before the war started, our population had been increasing and the production of livestock decreasing. From 1910 to 1914 our population increased 7 per cent, while cattle decreased 10 per cent and sheep 5 per cent. Hogs increased a little over 1 per cent. Thus it is self-evident that even if war had not come livestock values would still have advanced, though, of course, not nearly so much as they have.

Up to now the war has tended to still further decrease cattle and sheep in this country because extreme high prices have greatly encouraged selling. In Europe there has been a tremendous decrease in production because it has become necessary to slaughter millions of breeding cattle for feed. A short time ago an American breeder and importer of registered beef cattle was enjoined by the British government from shipping the cattle he had purchased in Scotland for export to this country. He was compelled to leave half the number he had bought and be satisfied to ship the other half to this country. The reason assigned for this embargo was that the cattle were needed for breeding purposes at home and might be needed for food. Thousands of fine breeding herds in Europe and the British colonies have already been destroyed and many thousands more will disappear before the war is over.

Agriculture must be maintained. The world must be fed. To maintain the fertility of the soil livestock is essential—a fact well known to everybody. This being the case it is a certainty—not a supposition—that livestock values will remain high not only during the war, but also after it is over. Europe must restock her farms and the American farmer and breeder will be called upon to help in that great work. It is a mistake, therefore, for anyone to diminish his breeding herd. Don't kill profitable breeding cows; don't destroy good heifer calves. Keep all good breeding stock and increase the size of your herd. It will pay.

We are not in favor of passing a law prohibiting the slaughter of all female cattle under six years of age

Will Your Harnesses Hold Up

under the heavy strain of this summer's work? The world is looking to the American Farmer to produce more this year than he has ever produced before. Get your harness in readiness now by applying.

DUCK-BACK Harness Oil

to them. This natural oil gives the harnesses pliability and toughness and preserves their life and appearance. Order a can from your dealer today and use it.

Utah Oil Refining Co.

Salt Lake City, Utah.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS.

184 ACRES IN THE BEAR RIVER VALLEY, under high state of cultivation and the very choicest land in the valley. Being next to the foothills the soil is of the choicest kind. This land is all under irrigation and is suitable for any kind of farming suitable for this intermountain section, especially the beet raising. There are five acres of orchard and one-half acre of small fruit; sixty acres of alfalfa and 142 acres of wheat was raised on this place the past season. The place is fenced with a net wire fence 26 inches high, with barbed wires on top. There is an 8-room house on the place, and a barn that cost $2500. This farm is considered to be one of the very best farms in the Bear River valley. If you are in the market for a firstclass farm, it would pay you to investigate this.

40 ACRES NEAR BEAR RIVER CITY. Sandy loam soil. This place is all under cultivation and all under irrigation. Has a 4-room house, a barn, stable and other outbuildings. Has a family orchard; twenty acres of alfalfa. Ten acres were plowed up from alfalfa last year for sugar beets this year. Balance is plow land. This is three-quarters of a mile from the railroad station and on the main county road. We can sell this for $187.50 per acre, on terms.

14½ ACRES ON OLD FOURTEENTH SOUTH, two miles east of State St., at $475 per acre. This is first-class truck garden land. Has a full water right, and all under cultivation. We can sell two or three acres, if desired, off this property. If you are looking for a garden spot close in, this would meet your requirements.

50-ACRE DAIRY FARM, located at Union, Salt Lake county, Utah. This is about sixteen miles out from Salt Lake, at $252 per acre. We can take $2000 down on this and an easy terms on the balance, at 7 per cent interest. This place is all under cultivation and all under irrigation; has more water than is needed from the Jordan canal and Riverdale-Deckers ditch. We consider this an excellent buy and would advise that you investigate same.

150 ACRES AT CLEARFIELD, DAVIS COUNTY, UTAH; 5-room brick house; all fenced; right near the depot; good location, and on the main road. Price $150 per acre. We can also sell fifty shares of Davis-Weber County canal with this farm. The place is adapted for beets and tomatoes.

KIMBALL & RICHARDS
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

We Write Fire Insurance.

Go to Lakeview, Oregon now and purchase an alfalfa farm under the Goose Lake Valley irrigation project. Price $50.00 to $75.00 per acre. $5.00 per acre down and the balance in 20 annual payments, with interest at 6 per cent. Land is level, soil black loam, neighborhood is well settled, free wood, posts and fine outside grazing on the National Forest. Soil very productive. For particulars call or write E. J. Groesbeck, Room 53, City and County Bldg., Salt Lake City, Utah.

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

AN IDAHO RANCH BARGAIN

320 acres near Corral, this ranch is located on a creek, the first ranch where the valley opened up, it is adjoined on three sides with high hills which are open range, the valley opens to the South East and one can stand on this place and see for miles over level land, it now cuts 200 tons of timothy and clover hay, and 1000 bushels of grain were raised on the place this year. It is all fenced and cross fenced, with a five room house, shade trees, cellar, wood shed, granary, stables and machine shed, the creek is fringed on either side with timber and willows which makes excellent shelter for stock in winter, this land is watered by decreed water, and would make an ideal dairy ranch, or for pure bred sheep it would be excellent. Price eleven thousand dollars ($11,000) five thousand dollars ($5000) cash, balance to suit at seven per cent.

FEDERAL LAND COMPANY
Ogden Utah

WHEAT LANDS $3.00 PER ACRE
A Genuine Opportunity.

An enlarged non-resident (320 acres) homestead relinquishment, 2½ hours ride from Salt Lake City. Located on main line of railroad and in a good growing district. Land of excellent quality with a good rainfall.

Buyer must use his homestead right. Same character of lands adjoining are yielding 20 to 40 bushels per acre. A real bargain to persons willing to use homestead right in connection. No better bargain in the state. Write for further particulars.

J. W. PAXMAN
Nephi Utah

$12 TO $25 PER ACRE FOR WHEAT LAND

that will produce 30 bushels of wheat per acre.

Wheat farming with tractor is extremely profitable on these low priced, rich, smooth lands. Sold on easy terms at low interest.

For particulars write to

P. O. Box 1162
Salt Lake City, Utah.

PERSONAL ATTENTION

Is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.

BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.

and male cattle under one year old, as is being urged by Representative Britten, of Chicago. Such a law would be foolish. Nobody can afford to keep a barren cow till she is six years old; nobody can afford to raise inferior breeding cattle. If there is danger of too many good female cattle being slaughtered let the government establish a minimum profitable price on beef cattle in line with the cost of grain and the cattle industry will be safe. There is not the slightest danger of farmers selling good breeding cattle if they were assured a profit by retailing them. For the government to tell the farmer that he must continue milking a cow that produces only 100 pounds of butter fat a year, and to raise heifer calves for breeding purposes from such inferior animals would not only be unwise but absolutely foolish. It would be far more sensible to augment production by guaranteeing good prices and in some way encouraging the use of good bulls and high-producing females.

The point is that we need more livestock to feed the world, that we shall need more than ever after peace has been established to restock the whole of Europe, and that we need more in this country to maintain the fertility of our land. So don't sell good breeding stock, whether of cattle, horses, sheep or hogs.

DUROC JERSEY BOARS

Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.

ERIK W. OLSON
Virginia Idaho

S. C. WHITE LEGHORNS

Greatest layers year in and year out. Shipments arrive safe—small expressage. Single Comb White Leghorns guaranteed. Chicks shipped everywhere west of the Rocky Mountains—always at lowest prices. Full information on request. Established 25 years.

J. A. DOSS
337 Howard Street Petaluma, Cal.

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

Fat Stock Show

The second annual fat stock show will be held at the Salt Lake Union Stock Yards, North Salt Lake, April 4th, 5th and 6th.

The sole purpose of the fat stock show, as announced by the association, is to stimulate interest in the development of the livestock industry of the intermountain country and with this in view an attractive list of prizes has been arranged for the exhibition. There are to be no entry fees and no admission fees, and a blanket invitation to the stockgrowers and the general public of the intermountain country has been issued to do their share toward making the second annual exhibition an unqualified success.

The entry list will close March 31, and all stock to be exhibited must be at the Salt Lake Union Stock Yards not later than April 2.

Boys' Judging Contest.

A unique feature of the exhibition is the boys judging contest, limited to boys and young men of the intermountain region who have not be employed as instructors in agricultural work. The boys' judging contest will be staged on the opening day of the show at 9 o clock in the morning and will be under the direct supervision of Dr. W. E. Carroll of the Utah Agricultural college. The contestants will be divided into two classes. Class A will comprise men under 25 years of age and class B will include boys under 20 years of age.

Individual Fat Cattle.

Class 1—Two-year-old steer, spayed or Martin heifer, calved between September 1, 1914, and September 1, 1915; three prizes, $25, $15 and $10.

Class 2—Yearling steer, spayed or Martin heifer, calved between September 1, 1915, and September 1, 1916; $25 $15 and $10.

Class 3—Calf steer, spayed or Martin heifer calved between September 1, 1916, and September 1, 1917; $25, $15 and $10.

Champion steer, spayed or Martin heifer, competition limited to first prize winners in above classes; $25.

Special—$25 offered by Salt Lake Union stockyards for best individual fat steer or heifer.

Carloads Fat Cattle

Class 4—Carload, 15 head, fat steers or heifers, 2 years old or over; $50, $30 and $20.

Class 5—Carload, 15 head, fat steers or heifers, 2 years old or over under 2; $50, $30 and $20.

Champion carload fat steers or heifers, competition limited to first prize winners in foregoing classes; $50.

Carloads Fat Cattle Specials.

Cudahy Packing Co., $25 for best carload fat cattle exhibited at the show.

Wood Brothers, South Omaha, $25 for best carload fat cattle exhibited at the show.

Stagner-Megredy-Perionnet Livestock Commission Co., Kansas City, $100 for best carload fat cattle exhibited from Idaho, Montana or Utah.

M. K. Parsons & Co., Salt Lake, $25 for best carload fat cattle.

Robinson-Hoover Livestock Commission Co., Kansas City, $25 for best carload fat cattle.

Papworth & Sons, Salt Lake, $25 for best carload fat cattle.

Carload Fat Swine.

Class 1—Carload, 25 head, heavy hogs, each weighing 260 pounds and under 300 pounds, $30, $20 and $10.

Class 2—Carload, 25 head, packers' hogs, each weighing 220 pounds and under 240 pounds, $30, $20 and $10.

Class 3—Carload, 25 head, bacon type, each weighing 175 pounds and under 200 pounds, $30, $20 and $10.

Champion carload swine, competition limited to first prize winners; $50.

Carload Fat Swine Specials.

Salt Lake Livestock Commisison Co., $30 for best carload of fat hogs exhibited at the show.

Cudahy Packing Co., North Salt Lake $25 for best carload fat hogs.

Austin Brothers association, Salt Lake, $25 for best carload fat hogs.

Salt Lake Union Stockyards, $25 best carload fat hogs.

OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, December 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, White Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.

BATES & SONS
Guhama Farm
Provo Utah

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
Wellsville, Utah

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Ramb ullet Sheep.

W. S. HANSON, Prop.
Collinston Utah

Registered Holsteins For Sale

A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.

LELAND STEVENS
Oakley Utah

The Rich-Livingston Co., Salt Lake, $25 for best carload fat hogs.

Holtman Livestock Commission Co., Salt Lake, $25 for best car fat hogs.

Ballamoar Farms, Richmond, Utah, pure bred boar valued at $50 for best carload fat hogs.

Carloads Fat Sheep.

Class 1—Carload, 50 fat wethers, any age; $30, $20 and $10.

Class 2—Carload, 50 fat lambs; $50, $30 and $20.

Class 3—Carload, 50 fat ewes; $30, $20 and $10.

Carload Fat Sheep Specials.

National Woolgrower, Salt Lake; $50 best car fat lambs.

M. K. Parsons & Co., Salt Lake; $25 best car fat lambs.

Clay Robinson & Co.; $25 best car fat lambs.

Salt Lake Union Stockyards; $25 best car fat lambs.

Cudahy Packing Co.; $25 best car fat lambs.

Utah Packing & Provision Co., Salt Lake; $25 in baby bonds or best car fat lambs.

Boys' Judging Contest.

Utah-Idaho Sugar Co., Salt Lake, for individuals making best records in judging:

Class A—$15, $10 and $5.

Class B—$15, $10 and $5.

Modern Stenographic Institute, Salt Lake; complete correspondence course in modern shorthand, valued at $15, to individual in class B scoring highest number points as judge of fat livestock.

DUROC BOARS

A few spring boars sired by the Grand Champion Richards Defender and Keystone Volunteer. Good big growthy fellows, ready for service now. Price $65.00 each. We guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

ORDER SPRING PIGS NOW

Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.

VICTOR R. FISHER
Oxford Idaho

WE WANT FARM LANDS

IN EXCHANGE FOR

SALT LAKE CITY PROPERTY

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah

BABY CHICKS—BABY CHICKS

White Leghorns, Brown Leghorns,
March delivery $12.00 per 100
April delivery $11.00 per 100
R. I. Reds, $15.00 per 100.

ORLAND HATCHERY
Orland, Glenn County, California.

BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS

Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.

J. H. SHAFER
Proprietor Ogden Feed Co.
2246 Wash. Ave. Ogden, Utah

MACHINERY FOR SALE

The U. S. Cream Separator like John Brown's soul, goes marching on. If you want to know about the new United States or need repairs for the old one, write

H. E. WALKER, Sales Manager
Box 194 Salt Lake City, Utah

SOY BEANS FOR SEED

GLOBE GRAIN AND MILLING CO.
Kearns Building
Salt Lake City, Utah.

Utah's Experimenters In Agriculture

FRANKLIN STEWART HARRIS

Written for the Utah Farmer.

No man is worthier of his position than is Franklin Stewart Harris, Director of the Utah Agricultural Experiment Station.

Good business men like their managers to have begun at the bottom. This enables them to be familiar with all the operations they oversee. In this respect Dr. Harris is especially well prepared to lead Utah to better agriculture. He was born in Utah, has operated farms in Utah, Mexico, and Canada, and has studied widely in both the East and the West.

He did his high school work at Juarez Academy, Colonia Juarez, Chihuahua, Mexico. The year previous to his graduation he clerked in a mercantile establishment. The frequent meeting of people gave him opportunity to cultivate his already sincere good will for all. In the fall of 1903 he entered college at the Brigham Young University. The next year he had valuable experience as instructor of science at Juarez Academy. Returning to school, he was graduated from the B. Y. U. in 1907. While a senior he taught Agricultural Chemistry. The following year he was employed at the Utah Experiment Station and Agricultural College as Assistant Chemist. After one year here he went East to study. His ability soon brought recognition. During his second year he was made Assistant in Soil Technology at Cornell University, and during his third year he became instructor. When he finished with the degree of Doctor of Philosophy, in 1911, he was offered a position at Cornell, but chose to return home as Professor of Agronomy in the Utah Agricultural College and as Agronomist of the Experiment Station. A year later he was made Dean of the School of Mechanic Arts and Agricultural Engineering. On July , 1916, during his thirty-second year, he was given the highest honor in the agriculture of Utah —the Directorship of the Experiment Station.

As a teacher his place is also a high one, his students both love and respect him. The various positions he has held indicate his rank among fellow workers. But these are merely outward reflections of the inner man. He makes everyone from freshman to congressman feel at equals with him. These are rare qualities, but greater still is his mastery of research,—he is a natural experimenter.

No sooner had he returned from Cornell than he attacked the problem of improving the agriculture of Utah. In the beginning, he replanned the experimental farm. Seeing our important problems, be plunged into irrigation, alkali, manuring, potato and sugar beet breeding, and dry-farming. His great success came from two things; his ability to pick out the fields of vital work, and his power to concentrate on them. In consequence, he has brought to light much new truth. He found when and how heavily to irrigate wheat, potatoes, corn and sugar beets. He showed for the first time which alkali salts were most injurious. This work is now quoted throughout the nation. He proved that Utah could compete successfully with Europe in the commercial production of sugar beet seed. He demonstrated the most profitable methods of utilizing farm manure on irrigated land. He adapted crop varieties and cultural methods to the needs of the various dry-farming sections of the State. Though as yet incomplete, potato breeding and varietal and cultural tests of corn hold much promise. He is contemplating similar work with alfalfa and other crops.

Meantime he has not "hidden his light under a bushel." He has written widely in order that others might profit from his hard-won knowledge. He is author of sixty-five treaties in bulletins and agricultural journals; he is senior author of "Principles of Agronomy," a high school text; he has also published over 150 editorials in agricultural papers. His vision is broad. His new book, "The Young Man and His Vocation" deserves the attention of the youth of Utah. In this, as in other things, his life exemplifies the exhortation that he who would save his life must give it in service to others. That he is known outside of Utah is shown by the fact that he has been elected to eighteen national agricultural societies. In addition, he has been a member, a fellow, vice-president, and president of the Utah Academy of Science.

His home life is truly happy, he represents a high type of Americanism. Finally he is optimistic. Just the other day, during conversation, he remarked: "This is a fine old world; we ought to be glad to live in it.

If there is one thing the world needs more than another, it is more knowledge. Man's power over nature lies in his knowledge of how she works. Experimenting is asking nature a definite question and so planning the test that she simply has to answer. This is no easy task; here is a laborer worthy of his hire.

Just as the great strength of Germany lies in her research, so our greatest hope for the future lies in our experimental activity. In this very thing—the finding of new truth—Dr. Harris excels. Utah may well be proud of her Station Director. He is not asleep at the wheel; our agriculture has a true pilot.

Utah Implement-Vehicle Co. Agents, Salt Lake City, Utah.

CONTROL STOCK DISEASES

We find certain conditions on almost every farm from which disease may be easily spread, such as:

Stagnant pools.
Filthy and poorly ventilated barns.
Filthy pens.
Running water through premises.
Straw stacks.
Swamps.
Poorly drained barn lots and feed lots.
Unrestricted movements of infected animals.

On the average farm there is too little consideration given to the control and eradication of livestock diseases, from the standpoint of sanitation. This may be accounted for by the fact that the farmer has not associated the presence of the disease to the existing unsanitary or filthy condiions until forced to it by the rather sudden occurence of losses among his stock.

There is at this time a most wonderful growth in our livestock industry, but with it comes the increasing danger of loss from disease, unless we make use of what are really simple but effective livestock sanitary measures.—Dr. M. Jacob.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha
(LIMITED)

HOOVERIZING THE GARDEN

(Continued from page 3)

the waste and the avoidance of the mistakes made in 1917. No April spurts are wanted if the work is not to be followed up during the later season when the heat and the weeds are opponents to be taken into consideration. No planting is recommended on ground either too dry or infertile to produce a crop. No hysterical plowing up and planting of valuable and beautiful lawns is urged. Unwise enthusiasm must be curbed and Hooverized into positive results. Seeds are scarce and expensive and MUST NOT BE WASTED. Hence more care and forethought must be given the subject this year than ever before. Every garden resource MUST be conserved; every foot of idle ground that will grow crops must be utilized; and above all, the garden that is planted must be cultivated, weeded, and watered with patriotic devotion and the products harvested and used, all in such a way that energy, time, money, and materials may be Hooverized to the best advantage.

In this connection two things need to be grappled with in a conquering manner—the waste of space and the growth of seeds. A survey of 309 irrigated farms in Utah shows that the garden occupies an average space of eight-tenths of an acre. What does this mean—that this amount of land is actually necessary to produce vegetables for the average-sized family? Not at all. It means waste of space, waste of money, waste of opportunity and the growth of extravagance. Data show that a family of five can be comfortably garden-fed on an area 50 by 100 feet, while the maximum size of an average farm garden coud better be five-tenths than eight-tenths of an acre. Of course, it must not be forgotten that one of the dominating ideas for the farm garden is to use horse labor the maximum, and hand labor the minimum, amount. Weeds must not be allowed to crowd out the garden plants or seriously compete with them for water, plant food and sunshine, thus reducing the yield. When the area planted is too large for the purpose and more than can be properly handled, weeds begin such a rousing offensive that it is hard to defeat their conquering army. Because land is becoming more valuable each year and hence must not be wasted; because a garden too large invites both weeds and neglect; because expensive seeds are thereby worse than thrown away; because the urgent call this year is not only for more gardens but for MORE PRODUCTIVE gardens; because making two gardens flourish where but one languished before is an evidence of patriotism; because the labor problem is so acute that not one iota of energy must be lost; and because of the world-wide appeal for conservation; let us therefore Hooverize our gardens to the utmost this year and make every foot of soil, every seed, and every stroke of the hoe count in the great conquest for world freedom.

BEES AS A SIDELINE

J. Landy Breeding.

Four years ago I decided to give bee-keeping a trial. My only experience with bees was when a lad of 12 years while on my grandmother's farm. On an Easter egg hunt I spied an egg under the approach of a beehive, for which a cousin and I had a wild scramble. I, being successful in getting the egg, was also successful in getting a sting which closed both eyes for a day.

Having a family of children fond of sweets as well as myself I decided to purchase several colonies of bees. Having a patron on my route whose hives numbered 20 I drove a bargain for 10 prime swarms of bees, hives to be furnished by me for $1.00 a swarm. I purchased one 10-frame hives and all necessary paraphernalia such as foundation, smoker, queen excluders, hive tool, and last but not least, a pair of gloves and veil. The cost of the swarms and freight on supplies amounted to $80.41.

I wired my frames in hive body, using full sheets of foundation both in hive body and supers. My bees were hived in July just as the main honey flow began and they filled the hive body in a few days and as soon as they capped the tops of the frames of honey I gave them each a super. They at once began work in them and filled them so rapidly that I was kept busy exchanging the empty one for full supers as fast as I could get the honey out and dispose of it during my spare time.

When I purchased the bees I did so only with the expectation of their furnishing my family with honey, but they surpassed all expectations, and I decided that I would increase my number of hives year by year and grow into the bee business.

On August 15, three swarms were cast making me 13 colonies. From these after using all of the honey we cared for and keeping 220 pounds for winter I sold $69.95 worth of honey. September 20 I took off all supers so bees could store plenty of honey for winter, all colonies going into winter with plenty of stores and young bees.

Bees wintered well, and I purchased during 1916 $126.26 worth of supplies including freight on same. Desiring to increase my number of colonies I allowed them to cast prime swarms and increased to 26 colonies. However, later I had a second making a total of 27 hives.

Owing to nine colonies going queenless I failed to secure any surplus from the nine but the 18 colonies making surplus produced 1820 pounds of honey from which my family consumed all they cared for and I sold the remainder for $213.20. I had spent for equipment to that time $206.67 and had sold honey to amount of $283.15 in the two years and had all of the honey we cared for which was no small item and had a profit of $76.48 and 27 colonies valued at $8 each or a profit of $292.48 on an investment of $206.67.

Let me add that I was and still am content to grow into the business (for such I consider it) as knowledge of same justifies. To be successful in beekeeping one must be content with a few colonies until experience permits an increase in number, or he will find himself with a lot of empty hives.

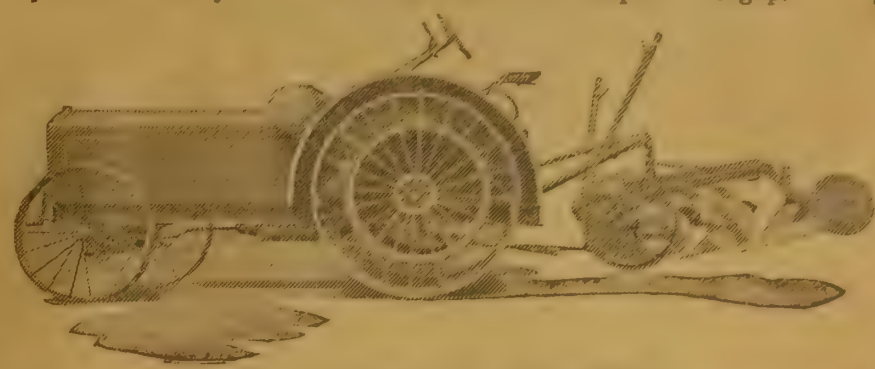
The first thing one should procure is a good book on beekeeping which should be read and studied. There is much information in the farm paper.

There is not a farmer in the Southwest to whose interest it would not be to have a few colonies of bees. With a small initial investment he could supply his table with nature's best sweet and at the same time increase his fruit and other crops by his bees having visited their blooms and conserving a sweet that would othewise go to waste for which there is a crying need. I am omitting what my bees poduced during 1917 for the fact that I did not manage them.

Nearly any good agircultural country is a good bee territory. Get several colonies of bees to supply the babies and grownups with nature's best sweet and sugar shortage won't bother you to any great extent.

You May Not Have a Son to Send to the Front

but your neighbors sons have gone; and man power will be scarce this year. The Gas Tractor will help fill the gap.



E. B. 12-20 H. P. TRACTOR

will handle 3-14 inch mouldboard bottoms, or four Discs. A 24 inch Thresher with Blower and Self Feeder.

12 Years Experience back of this Tractor.
4 Cylinders.
3 Speeds Forward 1 Reverse.
8 Hyatt Heavy Duty Roller Bearing.
All Transmission gears are cut steel and run in a bath of Oil.
Auto Type Steer.
Spur Gears and Pinions are reversible.
Call or write for further information.

MILLER-CAHOON COMPANY
Distributors.
Murray, Utah Idaho Falls, Idaho

HERE'S A WAY TO TEST SEED CORN

Every ear of seed corn should be tested before the crop is planted. This precaution against a poor stand has been made necessary by the shortage of good seed this year. While seed corn testing is the only save practice in ordinary years, it is doubly important this year because a big crop of corn will be necessary to meet the country's demands for food and feed. The Missouri College of Agriculture offers the following suggestion for testing seed corn. This is one of the simplest ways by which the test may be made.

Usually several shallow wooden trays are made and nearly filled with sawdust or fine soil. They may be of any size desired, but a tray about 2 feet square is perhaps the most convenient one to handle. A cotton cloth the size of the tray is marked off in 2-inch squares, each square numbered, and laid on top of the soil. The ears to be tested are laid out in sets of 10, each ear being given the same number as one of the squares on the cloth. Taking a set of ears, remove 6 kernels from an ear and place them on the square in the cloth, which bears the ear number. Do this for all the ears. When all the squares on the cloth are filled, the kernels are covered with a second cloth, a third cloth is placed over this an inch of sawdust or soil is spread on top and thoroughly wet with warm water. In place of the layer of soil, a pad filled with sawdust may be used to cover the tester. This is somewhat cleaner and more convenient than loose soil or sawdust. When all the trays are filled, stack them in a warm place and wet the top layer of soil in each tray with warm water once a day for 5 or 6 days. At the end of this time remove the top cloth and examine the kernels. If the kernels from any ear do not show strong germination, that ear should not be used for seed.

By the use of germination test all ears unfit for seed may be found and thrown out. The result will be a better stand and a thriftier growth of the young crop.

USE THE WESTERN PULVERIZER, PACKER AND MULCHER
3 MACHINES IN 1

for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.
MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS
1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information.
Western Land Roller Co., Box 322 Hastings, Neb.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

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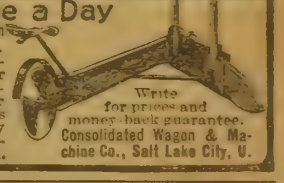
A Mile a Day
Is Easy With



This Simplex. Unequaled on irrigated farms for cutting or cleaning laterals. War time tool. Equals 100 men. Mostly all steel. Reversible. 10 days' trial.
Write for prices and money-back guarantee.
Consolidated Wagon & Machine Co., Salt Lake City, U.

FROM PRESIDENT WILSON

"County agents, joint officers of the department of agriculture and the colleges are everywhere co-operating with the farmers and assisting them. It is not only necessary that the achievements of the past year should be repeated, but that they should be exceeded. I know what this advice involves. It involves not only labor but sacrifice and painstaking application of every bit of scientific knowledge and ever tested practice that is available. It means the utmost economy even to the point where the pinch comes."—Woodrow Wilson.

When something seems drudgery, think of the trenches.

REO

"THE GOLD STANDARD OF VALUES"

THE GOLD STANDARD OF VALUES

Salient Features of the Reo Six

50 HORSE POWER, Six-cylinder motor cast in threes.

REO DESIGNED, Reo made—throughout.

126 INCH Wheel Base.

CANTILEVER rear springs—Semi-elliptic front springs.

FULL FLOATING rear axle.

TIMKEN BEARINGS throughout.

NOISELESS spiral-bevel driving gears.

REO ONE-ROD centre control.

HYATT QUIET bearings in transmission—at all points.

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BOTH BRAKES operated by foot levers and provided with ratchet locks. Extra large and both operating on rear hubs. No hand brake.

CLUTCH AND SERVICE brake are interconnected.

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TORQUE SHAFT relieves driving mechanism of road stresses.

SUB FRAME carries motor and transmission.

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OVER-SIZE TIRES—34 in. x 4½ in.

PERFECT LUBRICATION at every moving point.

REO RADIATOR—Reo designed, Reo made.

REO-REMY Electric Starting, Lighting and Ignition system.

REO STEERING GEAR—exclusively Reo. No back-lash—self-adjusting for wear. Positive.

50 PER CENT OVERSIZE in all vital parts—crank-shaft, axles, driving shafts, gears, frame, wheels, tires.

NET RESULT—Reo upkeep equalled by no other 7-passenger car.

PRICE IS F. O. B. LANSING AND SUBJECT TO INCREASE WITHOUT NOTICE

A Seven Passenger Six That You Can Afford

WE ARE NOT THINKING of the price—for that isn't the primary consideration in the selection of a car.

YOU KNOW YOUR OWN NEEDS—whether a five passenger car is sufficient, or if you really need, at times, room for more.

AND YOU KNOW better than anyone else can tell you, what your price limit is.

AND SURELY AT ITS PRICE this Reo Six is the greatest value obtainable in a car of established reputation.

AND REO REPUTATION is second to none.

WHEN WE SAY "Here is a seven-passenger Six that you can afford," we are thinking of the same item that you, an experienced motorist, are considering—

NAMELY—UPKEEP. That is the first thing to consider in the selection of an automobile.

CERTAINLY YOU CAN afford to own a seven-passenger car—if you can feel that not only in first cost but also in cost of upkeep it will be well within your means and accord with your ideas.

ASK ANY REO SIX OWNER to tell you of the upkeep cost of his Six—and the longer he has owned and the farther he has driven his Reo, the better will his answer sound.

AND HE'LL TELL YOU, too, that he has yet to find even a five-passenger car—four or six—the operation, repairs, replacements and general upkeep cost of which proved as low as his Reo Six—except one the five-passenger Reo.

NATURALLY a five passenger car ought to be cheaper to maintain than one of seven-passenger capacity—but most are not, when you look up the figures.

REO DEALERS TELL US that their records for the past three years show that Reo Six owners on the average have paid less than eight dollars per car per year for replacement parts.

JUST READ THAT AGAIN—with thousands of Reo Sixes running in all parts of the country, over all kinds of roads and handled by all kinds of skilled and unskilled drivers; most of them owner driven and owner cared for (or neglected)—

THE AVERAGE COST per car, per year, for replacement parts was less than eight dollars!

FRANKLY WE DON'T believe that record can be equalled by any other seven-passenger car on earth.

AND WE MAY ADD that the records on the five-passenger Reo show less than seven dollars per car.

THE SAME QUALITY—the same sound engineering; the same ripe experience; the same attention to little details and the same construction, inspection and testing of every car enter into the making of all Reo models.

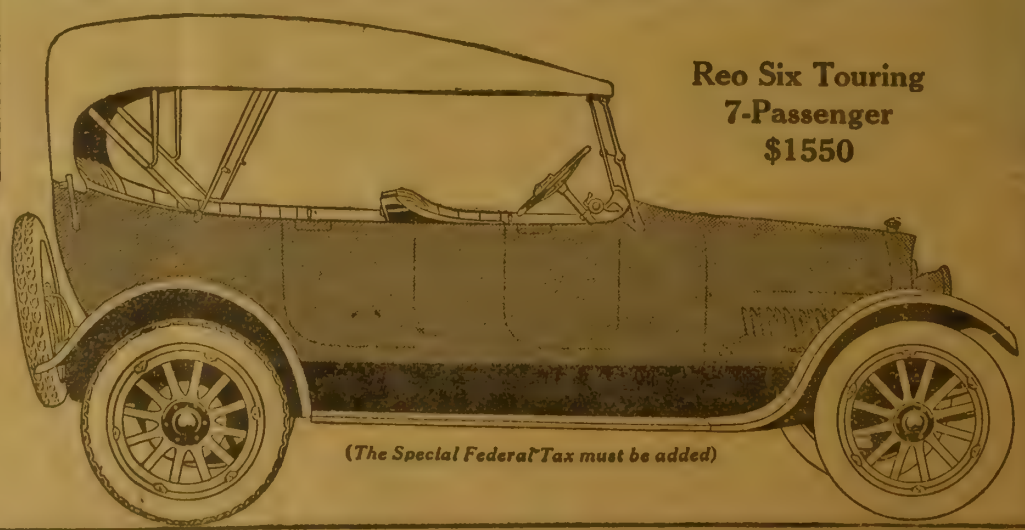
COST OF UPKEEP is always uppermost in the minds of Reo engineers, when designing and when specifying materials. And since the same desire is uppermost in the minds of the most experienced buyers—we meet on a common ground.

WE ARE FRANK TO ADMIT that to a large extent the phenomenally low cost of upkeep of Reos is due to the fact that Reo buyers are, as a class, better informed and more careful in their selection than the average.

IF YOU ARE ONE of that kind, we say to you, here is a magnificent, luxurious, seven-passenger six that, both in first cost and cost of upkeep, you can well afford to own.

REO EFFICIENCY sets the price lower—Reo quality guarantees low upkeep.

Reo Motor Car Company, Lansing, Mich.



Reo Six Touring
7-Passenger
$1550

(The Special Federal Tax must be added)

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 33 LEHI AND SALT LAKE CITY, UTAH. MARCH 16, 1918

Our Highways and National Preparedness

The General Use of Motor Trucks Operating on the Important Roads of The Country Will Help Solve The Transportation Problem.

BY WM. F. LONG.

"ROADS rule the world—not kings nor congresses, not courts nor constables, not ships nor soldiers. The road is the only royal line in a democracy, the only legislature that never changes, the only court that never sleeps, the only army that never quits, the first aid to the redemption of any nation, the exodus from stagnation in any society, the call from savagery in any tribe, the high priest of prosperity, after the order of Melchisedec, without beginnings of days or end of life. The road is unpire in every war, and when the new map is made, it simply pushes on its great campaign of help, hope, brotherhood, efficiency and peace."—Author unknown.

Highways, ships and railroads. These represent the three great subdivisions into which the transportation system of the nation is divided. These comprise three of the most vital links in the big chain of our national efficiency and preparedness. They represent the very arteries and veins of our Democracy, through which ebbs and flows its life blood. Destroy, ill treat, or detract from the efficiency of any one of these links and you impair the efficiency of the whole system.

When the United States first entered the war last year, there was a great hue and cry throughout the land that all "non-essential" work must stop; that the American people must refrain from any enterprise or purpose that would not aid in the successful propagation of the war; that pleasure seeking, such as theatres, moving picture shows, automobile riding and the like, should be curtailed to the last degree, and that the cash funds necessary for these indulgences be diverted to Uncle Sam for the maintenance of a vast army and navy.

As a matter of fact almost everything did stop, with the possible exception of the theatres, moving pictures and the automobile riding. This new broom of public sentiment swept the boards almost clean. In the sweepings could be found not only "non-essentials," but some "essentials." Included in the latter was one of the three links of the transportation system referred to—Highways! Even the Government at first encouraged the cessation of road building activities; it even went so far as to place an embargo on the transportation by railroads of the materials necessary for their construction. Important highway work in almost every section of the country was forced to stop on this account.

In the meantime, the mobolizing of the army had begun. A great program for building ships was started. Huge cantonments were being erected by the scores in all parts of the country involving the use of millions and millions of feet of lumber. Volumes of foodstuffs and other supplies for the relief of war stricken Europe were being rushed to the Atlantic seaboard to await shipment across the water. America, the sleeping giant, had at last awakened, and began to use some of its tremendous power in the great fight against the German war god.

But the machinery of this newly awakened activity and power did not turn as smoothly as was expected. The cogs were slipping somewhere. Supplies were not moving as swiftly as they should, and some not at all. During the past months of December and January, the coal situation in some of our eastern states was so grave that the government was compelled to issue and enforce the "heatless Monday" closing order, in order that the amounts of fuel used by some of the lesser essential industries on that day could be diverted for more vital needs. Despite the closing order, however, the situation remained practically unchanged. Ships, instead of being on their way to France, rode idly at anchor for want of coal to fill their bunkers and tonnage to fill their holds. Such cities as New York, Philadelphia, and Baltimore, within a radius of 200 miles of the richest coal deposits in the United States, contained many homes in which the inhabitants were actually freezing. Many deaths from pneumonia were being reported daily. There was plenty of coal—thousands of tons of it, but the railroads lacked adequate facilities to bring all that was needed from the mines.

It was found that there were not only an insufficient number of locomotives and cars with which to transport the exigencies of war together with our normal necessities, but that a serious shortage of trackage facilities existed as well. It was this lack of trackage that seemed to be responsible for the unprecedented congestion of cars in almost every freight yard in the country. It would be comparatively easy to replenish the shortage of locomotives and cars by building a new supply. This would not involve a very great amount of time. But the other is a matter of much more serious moment. To double or tripple track a railroad line. or increase its terminal trackage, requires considerably more work than is at first apparent. It means not only the manufacture and laying of a quantity of steel rails, together with all the

(Continued on page 4)

What Our Food Commissioner Says Concerning Highway Construction During The Present Crisis.

POSTAL TELEGRAPH — COMMERCIAL CABLES
TELEGRAM

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FA WASHINGTON DC. FEB. 2, 18

F. A. CANNON
EXECUTIVE SECY GOOD ROADS ASSN OF WISCONSIN MADISON, WIS.
SPEEDING UP CONSTRUCTION ON GOOD ROADS IS AN INTEGRAL PART OF GOVERNMENT WAR WORK. EFFICIENT TRANSPORTATION IS NECESSARY TO REDUCE MARGIN BETWEEN PRODUCER AND CONSUMER.
HERBERT HOOVER.

Three views of the concrete road between Ogden and Salt Lake City.

The Sugar Beet and Its Relation to Good Farming

By E. J. Iddings, Dean of the College of Agriculture of the University of Idaho.

The sugar beet is doing a great work in agricultural education. It comes to an agricultural district, that is suited to its culture, bearing the message for better farming and is the primarv incentive sooner or later in the development of a livestock feeding industry.

Beets Means Better Farming

In order to be highly successful year after year with sugar beets the farmer must employ cultural methods that are essential to maximum production and must plan definite measures for retaining soil fertility. Soon after the arrival of the sugar beet, therefore, comes almost invariably, deeper plowing, more thorough cultivation, more careful use of irrigation water, careful conservation and application to the soil of farm manures, and the seeding of legumes, not essentially for hay, but primarily for fertilization as a part of a well planned and balanced system of crop rotation.

Ordinarily we think of the sugar beet as grown for its sugar yield alone which is now a very definite and highly valuable contribution to the needs of America and her allies for the period of the war. From the

(Continued on page 5)

Utah's Experimenters In Agriculture

HYRUM JOHN FREDERICK

Utah has a skilled and experienced veterinarian in Dr. H. J. Frederick.

His early life was such as to prepare him well for his work. His intimate boyhood acquaintance with livestock, his later ranching experience, his thorough technical training, and his love for the work, made him a true veterinarian.

Dr. Frederick was born in Providence, Cache County, Utah, in December, 1871. As a lad he performed the usual tasks of the farm boy. It is not hard to imagine the careful attention that he, even as a boy, gave to his father's horses and cattle. Meantime, he was plodding through the grade schools, becoming proficient in fundamentals. Following this came four profitable years in the Brigham Young College at Logan, from which he was graduated at 20 years of age. He then studied at the Utah Agricultural College for three years, after which he taught school in Wyoming for three winters. During this time he homesteaded land and began ranching, in which occupation he remained six years. Who will say this was not valuable training? To tend cattle for six years, watching for each sign of injury or symptom of disease, gave him a practical point of view that has since meant so much to the livestock men of Utah.

A three-year mission to Germany broke into his agricultural pursuits. Before returning home he visited most of the countries of Europe, in each absorbing livestock wisdom. Returning, he disposed of his ranch in order to secure the technical training necessary for his chosen occupation. During the next four year at the Iowa State College, he earned the degree of Dotcor of Veterinary Medicine, which was conferred on him in 1905. Following his graduation, he came to the Utah Agricultural College as Professor of Veterinary Science and Bacteriology.

At the Utah Agricultural College and Experiment Station he began a long career of sanitary livestock work for Utah. During the twelve years that he has been associated with Experiment Station workers of Utah he has done almost constant work in the Extension Division. The towns of Utah in which he has not spoken are either small or otherwise unfortunate. Most livestock men in the state know both Dr. Frederick's direct method of telling them the causes of trouble in their herds and also his skill at [illegible] their troubles.

Research work has also occupied a [illegible] of his time. Sheep in the Western States were affected with [illegible] After four years of careful work he discovered how to control the disease. Since this work was in co-operation with the Bureau of Animal Industry, United States Department of Agriculture, his bulletin describing bighead and explaining methods of prevention was published by the national government. Tuberculosis in cattle, he also studied, from the points of view of prevalence, methods of spread, and infectiveness from diseased cattle. He has also made studies of contagious abortion in cattle and of moldy and otherwise spoiled forage.

In other fields also Dr. Frederick's experience is wide. He has taught veterinary science, bacteriology, animal husbandry, and zoology in the Utah Agricultural College. Ever since the organization of the Utah State Board of Horse Commissioners, Dr. Frederick has been a member and the veterinarian for it. He is now resident secretary to the American Veterinary Medical Association, and president of the Utah State Board of Veterinary Examiners.

But these technical duties are not all: his citizenship is broader. He long served on Logan's Board of Education. It was during his term that the new high school was begun. Besides all this, he has written many articles and answered hundreds of questions in the papers of Utah and other states. Readers of Utah Farmer in particular have profited by his writing.

REPORT OF SPARROW CAMPAIGN IN SALT LAKE COUNTY

Joseph W. Fox.

The Commissioners of Salt Lake County financed the movement which was conducted under the direction of County Agricultural Agent Heber J. Webb and the Salt Lake County Crop Pest Inspector.

The wheat was treated with Strychnia—Sulphate at the rate of two ounces per bushel of wheat. An ounce bottle of strychnine was dissolved in a two quart fruit jar full of boiling water, a half bushel of wheat was placed in an ordinary wash tub, and the poison solution stirred rapidly into it. After a thorough stirring the wheat was resacked.

Two thousand small manila sacks were purchased and labeled with a gummed label as follows:—POISON WHEAT.

For Sparows:—Feed birds clean wheat until they are accustomed to the feeding place, then put out a small amount of the poisoned wheat, or sprinkle lightly over the tops of wall plates, etc., in chicken houses and sheds.

For Mice and Ground Squirrels—Scatter thinly over runways and burrows of mice, and put small quantity down burrows of Ground Squirrels in Early Spring before grass starts.

DON'T PUT IT WHERE NATIVE BIRDS CAN GET AT IT.

About five ounces of the wheat, or an ordinary teacup full was placed in each bag, the top folded over away from the label, and an elastic band snapped round the package to hold it. They were then distributed.

They were delivered to High Schools, Farm Bureaus, District Road Supervisors, Drug Stores, Implement Houses, Flour Mills and Ward Bishops, in quantity, and from them distributed to the Farmers.

From the reports received from all sources, it is conservatively estimated that this movement resulted in the death of 250,000 Sparrows, and as each bird consumes annually four quarts of grain, the estimated saving is in the neighborhood of $63,000.00, directly through the birds killed, making no allowance for the indirect saving, because of the annual increase of these pests.

This saving would maintain the Crop Inspection and Farm Bureau Departments of Salt Lake County at the present rate of Compensation and expense, for fifteen years.

In view of the hearty co-operation of the majority of Farmers in this County in this movement, the Commissioners of Salt Lake County have agreed to Finance a similar Campaign to be directed against Ground Squirrels and Pocket Gophers, in which a slightly different method of distribution will necessarily be adopted.

CASE

Case 9-18 Kerosene Tractor

A Tested Tractor
Is Best and Cheapest

Most farmers know that. Most farmers know how costly it is to experiment.

Case has an experience of 76 years in the power-farming field, and this experience has taught us that our policy of selling only tried and true products is right.

Case Kerosene Tractors have been in the process of development for 26 years, and when you buy one you become the owner of a tried and proven tractor. You do not have to experiment.

From official tests, and from records kept by thousands of farmers owning Case Tractors, it is now an established fact that Case Tractors are most economical in the long run. The cost of fuel per acre is low and upkeep at a minimum. We will be glad to furnish you the evidence to prove these facts.

Case Kerosene Tractors come in four sizes: 9–18, 10–20, 12–25 and 20–40. So there is a size for every farm.

We have a very interesting catalog regarding Case Kerosene Tractors which will be sent free upon request. It contains a lot of valuable data in addition to giving you an opportunity to know the leading tractors.

J. I. CASE THRESHING MACHINE CO., Inc.
(Founded 1842)
937 Erie St., Racine, Wisconsin

Send for This Descriptive Printed Matter—All Free

Below are listed the different series of booklets and folders. Tell us which interest you.

1—Kerosene Tractors
2—Steam Tractors
3—Grand Detour Plows
4—Threshers
5—Hay Balers
6—Silo Fillers
7—Road Machinery
8—Automobiles

Or, if you wish, ask for our General Catalog, describing the entire Case line. It is free.

FREE Books

Write Today

HIGH PRICES WILL CONTINUE

Dr. W. E. Taylor.

In all foreign countries that are engaged in the war, livestock is nearly depleted, due to the great demand for foodstuffs. It is estimated that after the war is over, it will require many years for those countries to get back to their normal livestock supply; hence, it is reasonable to assume that the demand from this country for meat and breeding stock will be great for a long time, and the prices will undoubtedly continue to be fully as attractive as they are at the present time. The demand has been so great during the past two years, that our exports have increased more than one hundred per cent, and would have been much greater had we been able to supply the demand.

Imports from Mexico—where in past years we have received many of our feeders—have practically ceased on account of the internal wars that have been going on in that country. It is reported that cattle and sheep, especially the former, are depleted in Mexico as much or even more than in Europe; therefore, we cannot look to our border country for much of a supply for years.

In our country, the livestock feature of farming should not be permitted to dwindle, but, on the contrary, should receive special attention and be increased as rapidly as possible. We know that meat and meat products and dairy products are absolutely necessary for human food. We also know that livestock can be maintained to a great extent on roughages that are not useful for human food. We know, too, or should, that the manure from livestock is the sheet anchor of fertility, and unless it is utilized, the producing ability of our soils will soon wane.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, MARCH 16, 1918 No. 32

Influence of Moisture on Seed Production and Vitality

By Geo. Stewart, Assistant Professor in Agronomy, Utah Agricultural College.

Moisture bears an extremely close relationship to seed production in the West. The total yield of our grain crops and of other seed crops is not only influenced, but is largely determined, by available moisture. Besides affecting the yield, moisture influences the keeping quality and also the vitality of seed. Crops grown with the idea of being utilized for seed deserve, therefore, careful attention in this respect. Since our climate is naturally dry, the seed grower has at his disposal the means of controlling the moisture supply of his crop by controlling the application of irrigation water.

Increasing Production.

Wherever water is scarce, as it is in most of the intermountain region, the easiest and the most practical method of increasing the production of grain is by spreading the streams over more and more land. Years of careful work at the Utah Experiment Station, and at other places for that matter, have shown that the less the water applied the greater is the total yield for a given stream of irrigation water. In other words, where land is plentiful and water scarce, it is more profitable to apply water lightly to several acres rather than heavily to one acre. This is particularly true where over-irrigation is a common practice and it is a common practice in far too many of our farming sections. In fact, this has been found to be one of our most flagrant mistakes even in valleys where water was thought to be already too widely scattered.

Widtsoe (Utah Bul. No. 117) has shown that thirty inches of water applied to one acre gave a yield of 47.51 bushels of wheat. On two acres it gave 91.42 bushels; on three acres 130.59 bushels on four acres 166.16 bushels; and on six acres 226.86 bushels. In this connection it is well worth remembering that thirty inches is not an unusually heavy application, and yet one sixth of this quantity of water gave nearly as large acre yields, that is, thirty acre inches gave five times as much grain, when applied to six acres of land as when applied to one. These figures, of course, are really indicative only where land is more plentiful than water. This condition, however, is rapidly becoming general as our irrigation streams are made to serve larger and larger tracts. Where dry-farm lands lay adjacent to irrigated farms, there is only one limit to the extent which this practice may eventually reach, and that limit is set by the smallest quantity of water than can profitably be spread over land at one irrigation. About five inches is the quantity of water accepted as a good application. Every dry-farmer knows that were he able to give his dryland wheat a good irrigation at just the right moment, he could increase his yields very considerably.

Increasing Acre-Yields.

Not only may the total production of grain be increased materially by distributing irrigation water wisely, but in many cases the acre-yields may be increased notably by decreasing the quantity applied. Harris (Utah Bul. No. 146) found that 9 inches of water gave 44.3 bushels of wheat; that 22½ inches gave 44.6 bushels; and that 45 and 67½ inches gave 45.8 and 43.5 bushels, respectively. The yields from 22½ and from 45 inches were only slightly greater than that from the 9-inch application, whereas 67½ inches gave actually less grain than did 9 inches. Other experiments showed an increase up to about 15 inches. It may be seen from this that there was no gain from increasing the applications fourfold or more. Still heavier applications gave considerable decrease. Actual harm results, then, in any one year from too heavy applications, to say nothing of injury to the land when this practice is followed year after year as it is in far too many sections. Injury from water-logging need no longer be argued; it is admitted by all, especially when alkali accompanies the seepage water.

(Continued on page 15)

About the Price of Mill Feeds and Flour

Written for the Utah Farmer.

As the war progresses and the Federal Food Administration are able to put machinery to work, the prices of wheat, mill feeds and flours are being made more definite. It was a wonderful big undertaking when the government tried to regulate price of wheat and its products.

The price of wheat should only vary a few cents in any part of the State. The price at Cache Junction or at Price, Utah, is about the same having a common rate to Chicago, which is the basis of practically all our wheat. The price on which nearly all our wheat is figured is $2.20 Chicago, less a freight rate of 50 cents a cwt. in car lots or 30c a bushel or $1.90 for No. 1 Hard Wheat. Our No. 1 Turkey Red wheat has brought this price of $1.90. Of course the wheat that is off the railroads will be just that much less, as the freight will be to the shipping point. No. 1 soft wheat is 2 cents less and No. 2 of grade is 3 cents less No. 3 of grade is 6 cents less, below this wheat is sold on sample. The greater part of our wheat as best I can learn has sold about $1.85 a bushel. On this basis of $1.85 a bushel a government official gave out these prices and said that flour should sell for:

High Patent Flour $2.75 a sack of 48 pounds.

Straight Grade Flour $2.65 a sack of 48 pounds.

Graham flour $2.55 a sack of 48 pounds.

Whole wheat flour $2.45 a sack of 48 pounds.

These are maximum price at which flour should be retailed where wheat is costing the miller $1.85 a bushel.

The miller is allowed to figure a cost of production and he can only add a profit of 25 cents a bbl. or 12½ cents on a cwt. on flour. Of course the cost of making flour will vary but I understand the above prices allow for such conditions. Some might be able to sell at a little less on account of manufacturing flour at a lower cost.

The Food Administration have made a scale of profits for whole sale and retail wheat flour dealers.

Wholesale, gross maximum profit not to exceed from 50 to 75 cents a barrel.

Retailers'—Gross maximum profit on original mill packages not to exceed 80 cents to $1.20 a barrel, depending on the character of service performed, on less than original mill packages not to exceed one cent a pound.

Warning is given that margins charged in excess of these would be considered cause for investigation. At the same time dealers are cautioned against charging more than pre war profits on wheat flour and against asking more than a reasonable margin on wheat flour substitutes.

In figuring the above costs the millers are now compelled to make a barrel of flour (198 lbs.) from 264 pounds of wheat or 4.24 bushels. To this must be added the one per cent paid the government and the wheat at $1.85 a bushel, cost of grinding, cost of 4 sacks holding 48 pounds, which is now about 23 cents each.

In the making of a barrel of flour 68 pounds of offal, bran, shorts or mill feed is obtained and this has been deducted from cost of making flour.

This mill feed that the millers are now selling is really a mixture of bran and shorts and should be sold for not more than $1.50 to $1.65 a cwt. at retail. Again I suggest this price is based on the price of wheat at $1.85 a bushel. Straight bran at $1.50 and shorts at not more than $1.75 a cwt.

All the mills are expected to ship 30 per cent of their output to the government where the pre war period allotment of wheat has been ground, many of the mills are now, grinding exclusively for the government.

The above prices were obtained from government officials and are the maximum prices of flour and mill feeds. The basis has been on $1.85 wheat if you live off the railroad and wheat is selling at a lower price flour and feeds should be lower in the same proportion.

Food for Thought In Feeding Livestock

By Dr. W. E. Carroll, U. A. C.

One of the points in most all branches of the livestock business where money in most likely to be made or lost is in the kind and amount of feed supplied and in the method of feeding. In these days of high priced feeds too much attention cannot be paid to the various economic phases of this question.

The kind of animal and the object for which it is being fed will govern in a large measure the kind and the amount of feed to be used in any given case. It is a matter of common knowledge that hogs and cattle for example, require rations which differ in kind as well as in amount. It is not however, a matter of common practice to feed the average farm milk cow a ration differing materially from that given the horses on the place. The needs of the various kinds of animals should be studied carefully so that rations which will most nearly supply these needs can be fed.

Another point which is probably of even greater importance, because it is less frequently considered, is the difference in the requirements of a productive and an idle animal. Under-productive animals would be classed those which are giving milk (whether it be cow, mare, ewe, or sow), growing a fetus, growing wool, just growing, fattening, or being worked.

Each of these objects of production makes different demands on the body from every other, and these demands must be met by something in the ration, for after all, the feed is the ultimate source of all animal products. Just as these demands differ, so must the ration be changed.

An animal which is expected to accomplish any productive result in an economical manner must be considered at hard work and fed liberally. Light feeding of any heavy producing animal is a source of loss to the owner. Another source of equal or even greater loss is the over feeding of the idle or light producing ones. The appetite of the idle animal is not a reliable guide to the amount of feed to allow. Especially is this true with idle horses standing at a manger full of alfalfa hay.

Feed liberally is a necessary slogan if success is to be achieved, but don't feed wastefully is equally important. Wasteful feeding may occur as mentioned above in over feeding idle and light producing animals. Another source of waste which is even less excusable is the feed which is lost by using poorly constructed or a poor type of feed racks and troughs. A feed rack to be effective must permit ease of feeding both to the man and animals and must prevent waste of feed. More thought and study on such points will eliminate large preventable losses in the livestock business.

Our Highways and National Preparedness

(Continued from page 1)

appurtenances thereof, but the widening of bridges and tunnels, of huge cuts and embankments, and many other tasks of a stupendous nature. In consequence, although this war might last several more years, there would scarcely be sufficient time to materially increase the trackage facilities (both terminal and main line) of many of our railroad systems.

Look to Motor Trucks and Highways for Help.

It was a most serious problem, and one which commanded the quick interest of all our transportation experts. In their dilemma they seized upon the use of motor trucks like a drowning man snatches at a floating straw. Motor trucks, they argued, could be built cheaply and quickly. Already there were a total of 400,000 trucks of all capacities in the United States. By permitting motor trucks to assume the burden of practically all short haul traffic, the railroads could most efficiently take care of the remainder, and our transportation problem would be virtually solved.

Motor Trucks Must Have Roads to Run On.

But motor trucks require roads to run upon; and the better the road, the more efficiently and economically can the motor trucks be operated. And yet the construction of good highways but a few months ago was classed among the "non-essentials."

Newspapers Making Publicity Campaign for Better Roads to Help America Win the War.

In consequence this all important matter of good highways is now being regarded in an entirely different light. Newspapers and other publications from every nook and corner in the country are urging their speedy construction. The Manufacturers' Record in an editorial of December 6th, 1917, says: "Every move made to lessen the amount of highway work in this country is a move against our ability to win the war" The Engineering News-Record, America's foremost engineering journal, in an editorial dated January 3, 1918, makes this statement:

"For the present, therefore, road construtcion is in a more favorable position than it was in the spring of 1917. The agitation that held it back is past and will not recur.

"Moreover, the agitation regarding highway work has produced a very beneficial effect for the future. For all time the place of the highways in the transportation system of the country is settled. This is a real gain and one that those who have the interests of highway development at heart should not belittle. In the past there has been inveighing against "pleasure roads" and ill concealed prejudice in some quarters against motor transportation. That is definitely and finally dead. Highways are an economic necessity for the nation. Sensible men have known and recognized it for a long time. Now the country at large has been forced to its recognition, and insofar as that recognition has been secured, all the stress and strife that we have passed through during the last year has been more than paid for."

Poor roads cost more for maintenance. It costs a great deal more to move vehicles of any kind on a poor road.

Logan Waller Page, Director of the Office of Public Roads, U. S. Government, probably the most able and recognized authority on road matters, also makes some very pronounced statements along this line:

"The long haul is essentially a rail proposition. The short haul by reason of the phenomenal motor truck development of the past few years is becoming to an increasing degree a question of highway transport. This is the case, for the reason that the expenditure of time, energy and money in drayage, loading and unloading represents an economic loss greater than the margin between the cost of actual transport by rail and by highway. Now that the tremendous strain on our rail transportation system, due to war conditions, has made necessary the consideration of every possible auxilliary means of transportation, attention is keenly focused upon the highways of the nation."

The above is a most direct statement; and coming from our government's very last authority on road matters, it should be accepted in all seriousness. In consequence the watchword in the future will be not alone "ships and more ships," but "Efficient highways and more efficient highways," for it has been shown time and time again, that they are most vitally necessary in the successful propagation of the war.

The price of permanent, mudless and dustless and smooth easy riding highways is nothing more than the desire. Like Liberty Bonds they will not only help win the war but net an appreciable return on the money invested for their construction. Every trunk line highway from the Atlantic to the Pacific and from the Canadian Border to the Rio Grande should and will be constructed on some hard surface and permanent material. Already Uncle Sam has appropriated millions with this end in view. But you and your city and your county and your state must all "do your bit" in this vast undertaking and permit no one to discourage or detract you from this most worthy purpose. No other enterprise within the confines of the imagination could so benefit all the people of this nation, so effectively conserve its resources, cut down the high cost of living, or better prepare it for war, than this one. The price is your desire. The need is both your own and your country's.

—o—

CONCRETING THE MAIN HIGHWAYS A SOUND AND ECONOMIC MEASURE

"It is cheaper to build good roads than to pay mud tax" is a saying which is more typical of the truth than the one "It is cheaper to buy than to pay rent." In that connection it is quite interesting to note that the farmer and others living in the country districts adhere too stringently and believe in the latter but are inclined to ignore the former. The reverse is generally true of the city man. At first thought the reasons for this are not very apparent. Probably it is the mud, more than anything else which inspires the country man to "pull up stakes" and seek refuge in the city. Arriving there he seeks a home on a paved street, so that the new environment will differ as much as possible from the old. While buying a home might be decidedly more economical than renting one, he is content to pay the difference for the sake of living where he won't be obliged to wade knee-deep in the clay and dust he just left.

Paving a street in the city is a far more costly enterprise and nets con-

(Continued on page 16)

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THE SUGAR BEET AND ITS RELATION TO GOOD FARMING

(Continued ffom page 1)

standpoint of good farming, however, the by-products of the industry are of greater importance to a sugar beet growing district than is the sugar itself. These by-products which are of chief value to the livestock man are the beet pulp, the molasses, and the sugar beet tops.

Sugar Beet Pulp.

Sugar beet pulp is a highly valuable succulent feed used in fattening beef cattle and sheep and has been found, when properly handled, to be of value in milk production. Pulp, when given ample time to go through the siloing process, furnishes quite cheaply a large portion of the bulky livestock ration, is succulent, and, in fulfilling that function in the ration, carries with it much of value that the chemist does not find upon analysis. It serves one of the fundamental needs of the livestock feeder by cheapening the ration and increasing the net profits. Higher appreciation is had, year by year, of the value of sugar beet pulp in animal feeding and unquestionably further use can be made in the many fields of livestock husbandry as compared with the practice in the past.

Molasses.

The molasses may be utilized in many ways in animal feeding. Alfalfa hay, straw and other roughages, when given a molasses coating are rendered more palatable and the molasses adds to the carbohydrate content of the ration. Molasses may be fed with concentrates to steers and other cattle and gives excellent returns in comparison with its cost.

Beet Top Silage.

Another highly valuable product of the sugar beet growing industry is the beet top. The writer has seen hundreds of acres of tops in various beet growing districts handled in the usual careless way and thereby a large part of the real feeding value lost.

In a climate that can be depended upon for a large number of dry days in fall, the tops give excellent returns when piled up and left for the use of cattle and sheep. The new plan with the beet top, however, is one that results in little if any waste and is much more economical than the plan of past years and results in a product that is more highly relished than as compared with the raw tops as they come from the beet.

The Pit Silo.

A trench is dug four to five feet deep, twenty to thirty feet wide and long enough to take care of the entire crop of sugar beet tops. The tops are hauled and spread in a pit of this kind, making a solid mass of tops, or a mass made up of alternate layers of tops and of straw.

Beet Top Silage Value.

This pit, therefore, is the silo and its contents go through a siloing process which results in a highly palatable feeding material that can be utilized for both sheep and cattle with but little waste. The beet growers tell us that each ton of beets has as a by-product amounting to one-half ton of tops. Some feeders have claimed such returns from the siloed tops as to give them a value approximately one-half by weight as compared with alfalfa hay. If this estimate is correct, it means that the return from the sugar beet tops of a heavy crop are almost equivalent to a full year's crop on the same acre of alfalfa hay. If it is granted that it requires three tons of the tops to equal a ton of hay, still the showing is very satisfactory and the relative value of the by-product as compared with the main crop is very great.

A Valuable Industry.

Those interested in the future of Idaho agriculture, therefore, feel that the introduction of sugar beet culture into Idaho, extending over considerable areas, is a movement that means for good farming, better probably than has existed before, and that in addition to the direct value of the beets, the by-products will, after a little experience, be held of very very great value. Ultimately the sugar beet industry will assist in the development of a feeding industry which will mean a larger interest in animal husbandry and greater prosperity to the districts in which this development takes place.

Let us welcome the sugar beet, therefore, as a bearer of the possibility of ample sugar supply for the allies and as an agent of diversified farming and of livestock feeding and breeding.

SNOWFALL IN UTAH DURING FEBRUARY 1918

J. Cecil Alter, Meterologist.

During the month of February the snowfall over the state was below normal. Both the January and February reports show that the greatest deficiencies are in the south eastern counties. The opinions expressed by Co-operative Observers and Forest Rangers over the state are the prospect for irrigation water over the Great Salt Lake watershed is above the average; over the Sevier Lake watershed, average, and over the Green and Colorado Rivers watershed is below the average.

The average snowfall for the state during the winter months for the last twenty six years is 8.5 inches for December, 10.9 inches for January and 9.8 inches for February. The state average for December 1917 was 2.4 inches; for January 1918 was 19.9 inches, and for February 1918 was 13.9 inches. A seasonal excess for the state of 5.0 inches. The February state average this year was 13.9 inches at co-operative stations and snow stakes, and 36.1 in the adjacent mountains. The same month last year the state average was 24.6 inches and 46.9 inches respectively in the same places. Over the same regions two years ago the state average was 22.3 inches and 60.9 inches respectively.

The snow on the ground at the end of February over the Great Salt Lake watershed averaged 21.2 inches at the places of measurement and estimated at an average of 45.7 inches in the adjacent mountains; for the same time last year 34.9 inches and 64.8 inches respectively. Over the Sevier Lake watershed, the snow averaged 7.2 inches at the valley stations and snow stakes, with an estimated depth of 39.5 inches in the adjacent mountains; for the same time last year the average at the same places was 9.7 inches and 30.8 inches respectively. Over the Green and Colorado Rivers watershed the average depth was 12.3 inches at the stations and estimated at 21.3 inches in the adjacent mountains; for the same time last year the average was 24.5 inches at the valley stations and snow stakes, and estimated at an average of 46.9 inches in the mountains.

One advantage in marrying an ugly girl is that she will hesitate about emptying an automatic in your direction.

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UDDER TROUBLES IN MILCH COWS

By Cliff. Ackley, D. V. M., Bureau of Animal Industry.

Inflammation of the udder, known generally among farmers as garget, and called by veterinarians mastitis or mammitis, is one of the most frequent and annoying diseases with which owners of milch cows have to contend.

Not only the disease most painful to the afflicted cows, making it difficult to milk them or to apply treatment, but the disease is liable, unless skillfully and promptly treated, to result in the partial or total loss of function of the udder.

Inflammation of the udder may be caused by injuries or wounds to the udder or teats by distention of the udder with milk, before calving or irregular milking), by exposure to cold or standing in a cold draft, or by germ life entering from the external surface or carried by the blood from some other part of the body. In the infectious form of garget the most common method of transmission is by the hands of the milker, the disease being frequently spread in this manner from an infected cow to the other cows in the same herd.

Garget is first manifested by a chill, which may pass unnoticed, followed by two or three degrees of fever. The affected portion of the udder becomes swollen, hot, and sensitive to the touch; the supply of milk is diminished and the character of the milk may change, becoming watery and mixed with clots of blood or pus. Milking becomes difficult, as the cow resents the resulting pain.

Treatment should be started as soon as the condition is discovered. If the cow is valuable, or if a veterinarian is readily available, it may be cheaper in the end to summon professional and experienced aid.

With the lessening of the milk secretion proteids, pus germs, and waste may find their way into the blood streams. A good dose of physic will aid in the elimination of these products. For this purpose a drench of 1 pound of epsom salt, dissolved in a quart of warm water, is excellent. A dram of powdered gamboge and about an ounce of powdered ginger, mixed with the salt before it is dissolved, will aid its action. The entire quantity should be given at one dose, and may be administered through a dose syringe or a long-necked bottle. It should be given slowly and carefully, so that the fluid is not drawn into the cow's lungs; if the cow coughs or chokes, she should have time to recover her breath before giving the remainder of the drench.

The affected udder should be bathed three or four times daily with hot water, to which a small amount of table salt has been added. The water should be used as hot as possible without scalding or burning the parts. After thoroughly drying the udder with a clean, soft cloth, the udder may be bathed with a small amount of a solution composed of 2 ounces each of the fluid extracts of belladona, pokeroot, and aconite, and 4 ounces of spirts of camphor. In place of the above-mentioned solution camphorated ointment or a weak iodin ointment may be used. While gentle massaging may be helpful, extreme care should be taken not to bruise the inflamed udder, as bruises of this kind nearly al[illegible] result in abscess formation.

If the milk is not too thick or stringy, it may frequently be drawn from the affected quarters by means of a milking tube and thus avoid much of the irritation incident to milking. These tubes may be purchased at most drug stores at prices ranging from 15 cents each upward. Tubes should be [illegible]ed by boiling each time before [illegible]

During the continuance of the disease a light, laxative ration should be fed. Bran mashes are excellent.

If the swelling is excessive, a supporting bandage, with holes cut for the passage of the teats, may be carried over the back of the animal.

Sick cows should be segregated from the others of the herd and kept in a warm, dry, and well-ventilated place, free from drafts.

Garget may terminate in complete recovery or partial recovery with the loss of function of one or more quarters, or may terminate in abscess formation or gangrene, thus making it necessary to amputate all or part of the udder in order to save the life of the animal.

Milk from affected cows should not be fed to other animals or used in any other way.

The old saying that "An ounce of prevention is worth a pound of cure" is markedly true of mammitis. Care should be taken that milch cows are not tied where a draft of cold air may strike the udder. Stables should be kept clean, well ventiltted, well lighted, and sanitary. Loose pieces of baling wire, barbed-wire fencing, or similar trash should not be allowed about the stable, yards, or pasture. Snags and sharp stumps in the pasture should be blunted or removed to prevent injury. All these things may be some trouble, but any farmer who has had experience with garget will admit that it is trouble worth the taking.

NEED OF A GOOD DAIRY SIRE

It is the desire of every owner of dairy cows that his milking machines become more productive and more profitable each year, and they can be made to do so if intelligent care is exercised in the selection of the sire. It is not enough by any means that he be a fine appearing animal. The cow that produces the largest quantity of butter fat is not always the handsomest looking one in the herd. The bull, of course, must be a nice one and be of the accepted conformation, but the thing of prime importance is to know what his ancestry has done. When dealing with them as individuals this is of much greater importance in the bull than in the cow.

The cow shows the first year what she is capable of doing and if not up to the standard she can be discarded and only leave one calf tainted with her blood, while it requires at least two years to prove the bull by his fruits and if it is then learned that he is not a high class breeder, two entire batches of future dairy cows have inherited his imperfections.

The young calf when born should possess the ability to become a better animal than its mother. In order to possess this ability the owner must have been acquainted with all the weak points in the dam and used such intelligent care in the mating as to reduce to a minimum the liabality of their being transmitted to her progeny. The only way we can judge what a bull is capable of stamping upon his offspring is to know what is back of him, which is known only of the pure-bred registered animal.

It is vitally important that the parents of the bull possess good constitutional vigor, and especially the cow. She ought to be feminine in appearance and well sexed. The semi-masculine tendency with cows must be avoided, as it is one of the things that is most likely to crop out in the female progeny of the bull. Only in very exceptional cases are the heifers that possess that tendency good producers in the dairy. It is the cropping out of a very undesirable characteristic, a reverting back to the characteristics of remote ancestors, and it must be weeded out.

The dam of the bull should possess a kind and submissive disposition, for several reasons. The sire inherits his constitutional vigor and disposition largely from his mother. If these

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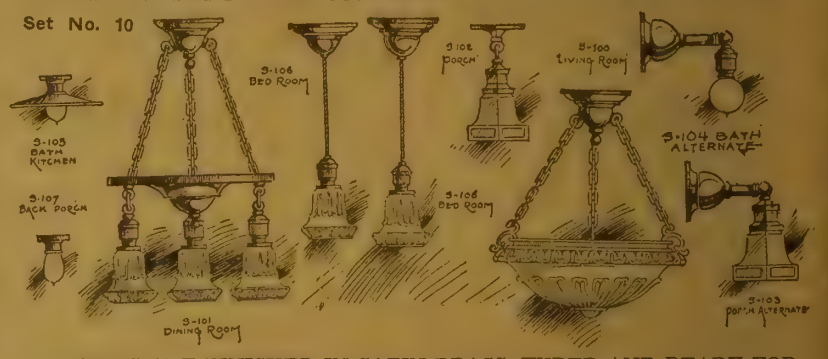

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things were kept in mind there would not be as many constitutionally weak and ugly bulls as there are at the present time, of course, the family of cows from which the bull is selected should be uniformly good in the conformation that makes up good dairy cows.

The sire will transmit the characteristics of not only his mother, but those of the females that are near relatives. An exceptionally great producing mother, if not closely and well related to those that are also great producers, will not be as likely to transmit her good characteristics to a large number of the progeny as one that is of a family of great producers.

With the mother of a sire the shape of the udder must not be overlooked. Whatever the shape and general characteristics of her udder are will be the shape and general characteristics of the udders of many of her granddaughters. If her udder is well balanced her granddaughters will be likely to have well balanced udders. If her udder is light in front and hangs down behind the same may be expected to appear with many of her granddaughters. Careful note of the teats is important. They should be long and well placed on the udder.

A pure-bred bull is, of course, the only kind to use. There never was a time since cattle breeding began when there was a good excuse for any man with a herd of cows buying or using any other kind than a pure-bred sire. And there never has been any good excuse for anyone selling a bull whose good qualities have been demonstrated by his offspring at anything less than his purchase price.

Let us be done with the nonsense of sending a bull to the shambles as soon as we are beginning to understand the value of his get and before it is possible to understand anything of the value of his female get. There has been a vast sacrifice of actual breeding merit through this turning to the shambles of bulls before it is known what they are really worth as breeders.

Many dairymen believe they must change bulls every two years, but how do they know whether they should or not? If one bought a bull in the spring of 1916 and a calf is dropped in 1916, which comes in milk in 1918, how can we know before 1918 or 1919 whether the purchase made in 1915 was a wise one or not?

Let us apply to the bull the test of actual performance, the transmission of desired qualities to his offspring, and fewer splendid animals will be sacrificed. It is of much importance that the bull be well fed and properly cared for. He is used in breeding for stamina, size, and production, and no poorly nourished animal can give good satisfaction along these lines of dairy improvement.—H. U. W.

THE FRONT YARD OF THE DAIRY BUSINESS

By W. H. Underwood.

Some people seem to care but little about the appearance of their front yard, some seem to care nothing at all, while there are some who are very particular as to how the front yard appears. The people who belong to this latter class are usually particular about how all of their property exposed to public view appears. The front yards is filled with shrubbery and flowers methodically arranged. When going to town the buggy is washed, the horses are curried and the harness is blackened. The personal appearance of the family is as good as good clothes and other adornments will make it. In fact, everything that is exposed to public view is spick and span.

Now how about the front yard of the dairy business? Just as the public is impressed with the kind of a home from the appearance of the front yard so is the consuming public impressed with the dairy business form the things exposed to public view or from the appearance of the front yard of the dairy industry.

Last summer while in town I noticed a certain farmer come in with a can of cream. He stopped at a cream buyers place. The can of cream was left standing out on the sidewalk. The cream can was old. It was dented and it was rusted in spots. The can had streaks of old yellow cream on the outside of it. Evidently the cream can had stood in one place and had been skimmed into several times and a portion of the cream from the spout of the separator had dropped on the outside rather than on the inside of the cream can. This particular can of cream stood in the sun and hundreds of flies covered and swarmed about each streak of this old dried up cream.

To one side of the sidewalk, up against the building, there was a stack of empty cans. Some had the covers off, others had them on. None of them were clean. The flies were likewise numerous, both on the inside and on the outside of the cans. People, consumers of butter, who passed by on the sidewalk looked at the cans, made a face of disgust and remarked: "My, isn't that awful?"

Similar conditions are often seen in express cars, on the depot platform and in other similar public places. In other words, the front yard of the dairy industry is not always kept up as well as it should and could be. Those of us who are vitally interested (that includes all cream producers) in the dairy business should make a strong effort to keep and spread a strong, healthful dairy sentiment. In order to do this it is necessary to keep all dairy conditions in as clean, tidy and healthful condition as possible. In other words, let us keep the front yard and also the back yard of the dairy business in a first-class condition at all times.

COWS WILL PAY DIVIDENDS

The man who has a herd of good breeding cows surely will have a dividend-payer in the future.

To assemble a good herd of breeding cows is by no means a small task. In building up such a herd there are two very important things to consider—type and uniformity of type.

If a breeder can get his herd recognized as producing cattle of a certain desirable type and then turns out only that type, he will be able to secure better prices on the average than if he has always a few of many kinds to offer. A man starting out to breed cattle must first make up his mind what type he wants to produce, and then act accordingly. It is by no means necessary that cattle be the best in the world to make a breeder famous. He will do well if he succeeds in creating a reputation for always having in his herd the real rent-paying, thick-fleshed kind with size, substance and quality.

Uniformity in a herd is the surest index of the skill of the breeder. A study of the most successful herds of this country will demonstrate that uniformity of type and uniformity of breeding are most desirable of the highest and best results are obtained. The uniform herd will produce cattle more nearly of one type, and for that reason they will look better, feed better, sell better and produce better. The key to success is sound judgment to maintain a uniform type and character with judicious feeding and management.

In building up a herd the best practice is to purchase a selection of cows or heifers from an old established breeder of good repute, whose herd has been noted for years as having produced animals of the best type and quality.

It is much better to invest money in a few first class cows, say ten, than in double the number of inferior ones at about the same cost. Remember there is a wrong and a right kind.

The cows should carry plenty of scale and strong constitution with abundant vitality. They should show good beef conformation with good feeding qualities. Quality should not be overlooked, but in search for quality, do not sacrifice size or select delicate animals.

GRAIN FOR SKIMMILK CALF

The practice of raising the dairy calf on skim-milk is gaining a following and is coming to be recognized as entirely practical, successful and profitable. Whole-milk is the natural food for the calf and should be supplied for the first ten days, but it is too expensive for continued feeding because the fat it contains is worth on the average of 40c a pound. Skim-milk contains all of the protein necessary for development of the calf's body and fat is the only element lost in skimming. This may be supplied in a much less expensive form by feeding grain.

Calves will readily learn to eat grain at two weeks of age and a good ration, suggest the Missouri College of Agriculture, is three parts cracked corn or corn meal and one part wheat bran. To this one part oats may be added if desired. Linseed meal or blood meal may also be added in small quantities, but neither is necessary.

The grain should be given in the dry form after the skimmilk is fed. The amount of grain will be less than one pound per day for the first two months, but should be gradually increased until the calf is taking two pounds daily at six months of age when it may be weaned. Timothy hay is preferable to start with and should be placed in reach for the first few months, after which clover or alfalfa will give better satisfaction.

A colored man who prided himself on definitions was one day asked for a definition of reciprocity by a white man. "'Wall, sah," said he, "you see that chicken house ova dar? Well, de hens dey lays for de white folks. I lay for de hens, and de white folks dey lays for me; dat's re-procity."—Team Work.

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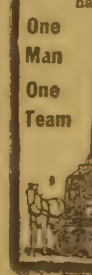

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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Dr. William M. Jardine, at one time a citizen of Utah and a graduate of the Utah Agricultural College in 1904 has been elected president of the Kansas State Agricultural College. He is well known in Utah.

Good seed corn is very scarce. If you grew your own seed right now is the time to test it. Buy the very best quality you can find from neighbor farmers if you did not save any seed.

Beware of the promoter who tells you that as soon as his proposition is in working order you can make money on your saving invested with him. Use your own money and forget any get-rich-quick proposition.

Now that farm machinery is costing more money why not take better care of it. A good implement shed is a money saver. It is a waste, to allow your mower, rake, plow or other tools to remain uncovered all winter. If you want to buy more thrift stamps, take better care of your farm machinery.

If the farmers are not satisfied with the price of wheat, or can not sell their wheat to local millers or dealers, they can sell it direct to the government and secure the Grain Co-operation price, according to grade, less a one per cent for handling charge. The government only buys in car load lots and where farmers have smaller quantities they could join together and make up a car load.

The work done in several counties of Utah by the County Agents in the treatment of seed grain for smut has proven so successful that there should be no doubt as to the value of treating seed grain. Eliminate the smut from your grain and produce a larger crop. It pays to treat your seed before planting.

More farmers will keep records this year than ever before. The income tax law is in part responsible, many however, are learning the value of keeping a record, learning the cost. Every farmer ought to keep a record, know how much you pay out, how much you received for all farm activities.

When the first warm day comes start a few early vegetables. They will help the high cost of living and conserve other foods.

Many farmers have good pure-bred livestock, good seeds, or other farm products that could be sold at a profit if their neighbors only knew it was for sale. Often people are looking for just such products and some times send away for them when they would have prefered to have bought at home. When you have something good don't be afraid to advertise it.

Watch the sows at farrowing time. It is the most critical season for the swine herd. The number of pigs that you raise determines the profit or loss. Too many little pigs die. How you handle the sows at farrowing time is very important, the results of several months of labor and care may be lost by neglect at this period.

A vegetable garden well planned, that will have garden stuff maturing at different seasons will be a big help in saving wheat and other grains that can be shipped abroad. Start now with some early vegetables. Secure your seed at once. A little time spent with the garden will bring a profit and a good help to the housewife in preparing the meals for the family.

Local Farm Bureaus will make a greater success of their work if they get together in a social way once in a while. All work and no play is not the best rule to follow. The Hooper Farm Bureau are to be commended for making such a success of their annual social affair. Even at these gatherings there is an opportunity to show the value of co-operation working together. Other farm bureaus can well afford to have some kind of a social or get-together gathering once in a while.

Instead of buying worthless stock in some unknown company some people had better look ahead and prepare to buy some Liberty Bonds. Before you invest in any stock, unless you know its value, ask your banker about it. Why is it that so many stocks are offered for sale? Why are the agents and promoters so willing to share with you in making so much money? If they knew, what they claim to be true, not one dollar of the stock would be offered for sale.

There are many things to vex and provoke the farmer these days. Our troubles are small however, when compared with those of Europe. Suppose our bread is made of a mixture, should we grumble when thousands are starving—and so we might compare all our troubles. Some of our government officials may make mistakes but let us be helpful, don't be too critical, we have but one big task before us and that is to help win the war.

KEEP THE HIGHWAYS OPEN

If we will stop for a moment and consider the seriousness and congestion of freight and all kind of transportation, we will realize the need of keeping the highways open. To keep in proper repair, construct and maintain public highways at this time is even more necessary than if we were not at war. This statement could not apply to all roads but it does to public roads necessary for the movement of farm products. Economy should be the watch word, but there is no economy in trying to maintain a poor road that should be made permanent. It is a waste of money to do anything other than construct some of our public highways of permanent material. We want good roads that will last more than a year or two.

SUGAR BEETS AS A WAR CROP

In a recent article, which appeared in the "Reclamation Record," I. D. O'Donnell, Supervisor of Irrigation, says:

"As a war crop, sugar beets stand at the head of the list. An acre of sugar beets will go further toward feeding the men in the trenches, in making beef, pork, mutton, and dairy feed, than an acre of any other kind of crop. And then, after all that has been worked out, alcohol for fuel and acids for munitions can be and are made from the refuse sirups. One acre of sugar beets will make sugar to feed 200 soldiers at the front for a year.

"The return from the crop itself will pay the farmer in good shape. The tops will fatten a steer and the pulp and sirup from the factory will feed another steer, so that those who can grow beets that are convenient to a factory should do all that is possible to grow them and help the war."

FARM LABOR PROBLEMS

It is our opinion that we can solve our own labor problems in this state. We must however make every moment count, there must be no lost motion. Co-operation and organization are absolutely necessary if we succeed. It also means that every one must work. We believe the suggestion of President McKay of the State Farm Bureau, a practical one, it can only be made possible by the farmers getting together. Team work, as they call it in playing basket, foot or baseball, is what we need. Knowing each others needs and then planning to help our neighbor. Some nonessential industries may have to go on part time or even shut down for a time to help at the critical season. There is an absolute need of greater production for our own boys and allies. Now is the time to get busy. There should be only one business today and that is the winning of the war. Better organization, better use of labor saving machinery and closer co-operation of the farmers will solve the labor problem in Utah.

DOLLARS PILED HIGH—WASTING.

This is an odd way to express it, but, the piles of manure, that will bring increased production, means dollars if spread upon the soil. The dollars are wasting because the manure is piled high in yards and corrals, burning up, loosing its value, and should be spread upon the farms. It is really surprising the amount of manure that has not been hauled out. A careful survey will show you that in many places the manure is piled high and in others the corrals, barn yards and feeding lots are covered with manure that should be hauled out to aid the soil produce more food stuff.

In some communities they have learned the value of a ton of manure and every pound of material that will help fertilize their land is hauled onto it. If some one is producing manure and does not have land to put it on, a neighbor farmer will purchase it and in this way make money by securing increased production.

Haul your piles of manure onto the farm and increase your dollars. To waste such valuable help in increasing food products at this time is unpatriotic.

KILL THE RATS

It seems hardly possible that rats each year are destroying one billion dollars worth of food. It would keep 150,000 farmers at work to feed the rats in the United States. Some experts say a rat will destroy $7.50 of property annually. When we awake to the real menance that these rats are we will kill them. Like other pests it must be done in a neighborhood way. Every one must take part and clean them out. Some people will tell you there are none on their place and at the same time will tell of the loss and destruction of property that rats have accomplished. The rats are one of our most dangerous enemies. They will carry deadly diseases. Have been known to assail helpless infants and kill them. They eat all kinds of food. They will rob cattle, horses and poultry of their food. They are fond of eggs and will destroy young chickens. Nibbling at matches they will cause a fire. Loss of food and property is great, why not go after them and destroy them. When you build think of them and make it rat proof. Start a town campaign against them and help conserve food and property.

FARM LANDS

WHEAT LANDS $3.00 PER ACRE
A Genuine Opportunity.

An enlarged non-resident (320 acres) homestead relinquishment, 2½ hours ride from Salt Lake City. Located on main line of railroad and in a good growing district. Land of excellent quality with a good rainfall.

Buyer must use his homestead right. Same character of lands adjoining are yielding 20 to 40 bushels per acre. A real bargain to persons willing to use homestead right in connection. No better bargain in the state. Write for further particulars.

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$12 TO $25 PER ACRE FOR WHEAT LAND

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Wheat farming with tractor is extremely profitable on these low priced, rich, smooth lands.- Sold on easy terms at low interest.

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The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

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AN IDAHO RANCH BARGAIN

320 acres near Corral, this ranch is located on a creek, the first ranch where the valley opened up, it is adjoined on three sides with high hills which are open range, the valley opens to the South East and one can stand on this place and see for miles over level land, it now cuts 200 tons of timothy and clover hay, and 1000 bushels of grain were raised on the place this year. It is all fenced and cross fenced, with a five room house, shade trees, cellar, wood shed, granary, stables and machine shed, the creek is fringed on either side with timber and willows which makes excellent shelter for stock in winter, this land is watered by decreed water, and would make an ideal dairy ranch, or for pure bred sheep it would be excellent. Price eleven thousand dollars ($11,000) five thousand dollars ($5000) cash, balance to suit at seven per cent.

FEDERAL LAND COMPANY
Ogden Utah

Go to Lakeview, Oregon now and purchase an alfalfa-farm under the Goose Lake Valley irrigation project. Price $50.00 to $75.00 per acre. $5.00 per acre down and the balance in 20 annual payments, with interest at 6 per cent. Land is level, soil black loam, neighborhood is well settled, free wood, posts and fine outside grazing on the National Forest. Soil very productive. For particulars call or write E. J. Grossteck, Room 53, City and County Bldg., Salt Lake City, Utah.

Questions and Answers

Cannonville, Utah.

Utah Farmer:

Will you kindly tell us through the columns of your paper the best method of destroying gophers, they are a dreadful pest in this part, many of the alfalfa fields are a compete net work of gopher holes.

A Subscriber.

Answered by Chas. J. Sorenson, Assistant Zoologist.

For the control of ground squirrels we recommend the use of poisoned oats as follows:

Oats (clean grain), 12 quarts.

Strychnine (powdered alkaloid), 1 ounce.

Bicarbonate of soda (baking soda), 1 ounce.

Saccharine, 1 teaspoonful.

Flour, 3 tablespoonfuls.

Directions for mixing.

Mix together dry, the strychnine, baking soda, saccharine and flour. Add a little cold water and stir to a smooth, creamy paste. Pour this over the oats in a metal tub and mix thoroughly to distribute the poison evenly over each kernel. Spread out and dry before using. Scatter the poison grain (1 teaspoonful to a place) along the squirrel trails or on clean hard surfaces near, but not inside of the holes. Put out the bait early in the morning between daylight and sunrise.

Caution: Keep all poisons and all utensils used in preparing the poisons out of reach of children and livestock.

For the Destruction of Pocket Gophers.

Strychnine (powdered alcholid), ⅛ ounce.

Saccharine, 1-80 ounce.

Vegetables, 4 quarts.

Directions:

Sugar beets, sweet potatoes, parsnips or carrots should be cut about one inch long and one half inch square, washed and drained. The strychnine and saccharine should be ground together in a dish and then slowly sifted from a pepper box over the dampend baits, stirring the while to destribute the posion evenly. One or two baits are placed in each of the underground tunnels which are located by means of a probe. The hole is then covered up.

The pocket gophers are seldom seen, they live almost entirely in their under ground tunnels where they eat the rots of nearly all crops. They are better known by their mounds of earth which are thrown out of the tunnels and interfere especially with mowing in alfalfa fields.

———o———

Springville, Utah.

Utah Farmer.

Gentlemen:—I have a young sow, about three months ago, which has graually been losing the use of its hind legs. She seems hungry and eats well. Fed milk and green stuff, squash and etc. Some one said perhaps milk did not agree with it and have changed to bran and shorts. Can you give me any advice?

Yours truly,
H. M. Fredenburg.

Answered by Dr. H. J. Frederick.

Posterior Paralysis:

A good many hogs in different sections of the country are affected with posterior paralysis. This is sometimes due to damp, unsanitary quarters, to in-breeding, and to overfeeding with a highly nutritious ration Certain classes of hogs lay on flesh and fat very rapidly, the bones not growing fast enough to hold it up. Sooner or later, the bones give way and as a result they are not able to move round on their hind legs. Others, again, may have paralysis, the spinal cord being affected. Where one has one or two hogs of this kind, I would advise slaughtering the same. Their meat would be fit for human food and thus be of very little loss. Otherwise, if an animal of this kind is kept, it may go down in flesh and finally not be worth much. If one wishes to treat the condition, where it is due to paralysis, the firing iron is inserted along the back at intervals of about one inch apart right down into the tissues over the spinal cord, thus producing a counter-irritation and often overcoming the trouble by stimulating the affected part.

———o———

AFFECTION OF BONE—
NAIL WOUND IN FOOT

Minersville, Utah.

Utah Farmer:

I have a horse that is very stiff either in the shoulders or front legs. caused I believe from hard pulling. At first in the morning the horse can hardly move around very awkward, can hardly turn around, limps a little with the front foot but after being worked awhile limbers up and you can hardly notice anything wrong with her. The collar seems to fit good and you cannot notice anything wrong with the shoulder, at first I thought it was founder of the feet but after treating her for founder I found it did no good and have decided from her actions that the left shoulder is effected, she shows it in turning. Will you please advise me by return mail some remedy for this as she is a good animal and I would like to get her cured.

I also have a horse that stepped on a nail some two months ago, I did not find this for a day or two and the foot got quite sore, after pulling the nail out I let it go, did not do anything for it but kept working the horse for a long time and found he got no better so I began to treat it with different things, finally had to stop working him. The nail went in at the rear end of the frog to one side a little, the hoof now is hard, the frog is hard, and he can hardly touch his foot to the ground, if this is gravel it ought to show up soon. Please advise me at your earliest convenience what to do.

Very respectfuly yours,
A. L. Dotson.

Answered by Dr. H. J. Frederick.

Affection of the Bone:

Where an animal is affected as you describe, it is probable that a ringbone, a sidebone, or navicular disease is causing the trouble. The symptoms you describe are for such conditions. I hardly think that the affection is up in the shoulder. Again, as you state, it may be due to founder of the feet (laminitis). It will be necessary to locate the trouble definitely and then treat it accordingly. If any of the bony blemishes above stated exist, a good blister over the affected parts may help in overcoming it. However, if the infection is in some other part, it would have to be treated accordingly.

Nail Wound in Foot.

Where a nail has penetrated the sole of the foot, gone up into the sensitive structures, it is necessary to open the punctured wound and allow free drainage to the affected part. The nail usually carries filth and germs up into the sensitive structure. This cannot escape in any way and very often causes s vere inflamation. A good strong antiseptic should be poured into the hole and a piece of cotton put over it so that no dirt can get up into the affected part. This is cleaned out daily and where applied properly you can overcome the trouble in a short time.

———o———

FISTULA

Bennett, Utah.

Utah Farmer:

Gentlemen:—I would be pleased to learn through the columns of your paper an affective treatment for a fistula on a horse.

We have no veterinarians in this part of the state so one has to depend on their own medical treatment.

Sincerely yours,
Parley H. Lambert.

Fistula:

Animals affected with fistula of the withers or poll require a very radical treatment in order to overcome the same. Especially is this true where they are of long standing. The treatment we usually apply is principally surgical. The affected part is thoroughly scrubbed with water and soap and a good disinfectant, the hair clipped and a longtitudinal incision made along the median line of the affected part. This incision is carried right down into the affected tissues—even to the ligament under which, in most cases, germs and pus are found in abundance. This affected tissue is usually cut out giving the part good drainage, an antiseptic consisting of a 2 to 3 per cent solution of carbolic acid or creolin is used to clean this wound daily. Care should be exercised to not allow new areas of infection in this wound and to allow healing to take place as rapidly as possible from the bottom. A one to 500 solution of permanganate of potash is often used to coat the wound on the outside so that healing will take place rapidly. If this is properly done and carefully carried out, the condition should be overcome.

P&O

STAR DISC HARROWS

Made in 4, 5, 6, 7, 8, 9 and 10 ft. sizes, with 16, 18 or 20 in. discs. Can furnish plain, cut-out or plow-cut discs. With or without weight boxes. Tandem Attachments, Tongue Trucks, Third Lever Attachments, Transport Trucks and Seeder Attachments furnished when ordered.

The steel frame is riveted and braced to the tongue in three places, affording great strength. Low hitch, with tongue and clevis in line of draft, avoiding neck weight. Hard maple oil-soaked bearings, cheaply replaced when worn out. A simple device locks scrapers against discs, away from discs or in position to be operated by foot levers. Each gang operated by its own lever and can be set at any desired angle. Heavy bumpers relieve the bearings of all end pressure. Will do efficient work in dead or back furrows.

A third lever attachment can be furnished which gives more penetrating power and a wide range of adjustments of depth. Highest quality steel discs, carefully sharpened and polished. Curved pull irons hold the harrow level at all angles. P & O Disc Harrows have been made for sixty years and are standard the country over. "It's the Way We Build Them."

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Agents, Salt Lake City, Utah.

Shows quality under every test.
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Send your orders for Butter Wrappers today to the Utah Farmer.

HOME

MAKE A LITTLE MEAT GO A LONG WAY

Use Savory Stews and Meat Pies.

Do you know how good they are? They may be so varied that you can have a different one every day in the week, and all of them delicious. It needs only a small piece of meat to give flavor to a hearty dish.

Don't think that you must eat a lot of meat to be strong. Meat is good to help build up the body, but so are many other foods.

In these dishes part of your building material comes from the more expensive meat and part from the cheaper peas, beans, hominy, and barley. The little meat with the vegetables and cereals will give your body what it needs.

Savory Stews.

Try them. They can be a whole meal and a nutritious one. These recipes serve five people.

Here is an English stew that is especially good:

Hot Pot of Mutton and Barley.

1 pound mutton, ½ cup pearled barley, 1 tablespoon salt, 4 potatoes, 3 onions, celery tops or other seasoning herbs.

Cut the mutton in small pieces, and brown with the onion in fat cut from meat. This will help make the meat tender and improves the flavor. Pour this into a covered saucepan. Add 2 quarts water and the barley. Simmer for 1½ hours. Then add the potatoes cut in quarters, seasoning herbs, and seasoning and cook one-half hour longer.

Beef Stew.

1 pound beef, 4 potatoes cut in quarters, ¼ peck peas or 1 can, 1 cup carrots cut up small, 1 teaspoon salt.

Cut the meat in small pieces and brown in the fat from the meat. Simmer in 2 quarts of water for 1 hour. Add the peas and carrots and cook for one-half hour, then add the potatoes. If canned peas are used, add them 10 minutes before serving. Serve when potatoes are done.

Different Stews.

Here is the way you can change the stews to make them different and to suit the season:

1. The meat.—This may be any kind and more or less than a pound may be used. Use the cheap cuts, the flank, rump, neck, or brisket. The long, slow cooking makes them tender. Game and poultry are good.

2. Potatoes and barley may be used or barley alone, or rice, hominy or macaroni.

3. Vegetables. — Carrots, turnips, onions, peas, beans, cabbage, tomatoes are good, canned or fresh. Use one or more of these, as you wish.

4. Parsley, celery tops, onion tops, seasoning herbs, or chopped sweet peppers add to the flavor.

5. Many left-overs may be used—not only meat and vegetables, but rice or hominy.

How To Cook The Stews.

All kinds of stews are cooked in just about the same way. Here are directions which will serve for making almost any kind.

Cut the meat in small pieces and brown with the onion in the fat cut from the meat. Add the salt and pepper, seasoning vegetables (onion, celery tops, etc.), 2 quarts of water, and the rice, or other cereal, if it is to be used. Cook for an hour, then add the vegetables except potatoes. Cook the stew for half an hour, add the potatoes cut in quarters, cook for another half an hour, and serve.

The fireless cooker may well be used, the meat and the vegetables being put in at the same time.

Left-overs or canned vegetables need only to be heated through. Add them 15 minutes before serving.

Dried peas or beans should be soaked over night and cooked for 3 hours before adding to the stew; or, better, cook them over night in a fireless cooker.

Meat Pies.

Another good way to use a little meat. Have you ever used rice, cornmeal mush, or hominy for a crust? This is less work than a pastry crust and saves wheat.

4 cups cooked corn meal, rice, or hominy, 1 onion, 2 cups tomato, ⅛ teaspoon pepper, 1 tablespoon fat, 1 pound raw meat or left-over meat cut up small, ½ teaspoon salt.

Melt the fat, add the sliced onion, and if raw meat is used, add it and stir until the red color disappears. Add the tomato and seasoning. If cooked meat is used, add it with the tomato and seasoning, after the onion is browned, and heat through. Grease a baking dish, put in a layer of the cereal, add the meat and gravy, and cover with the cereal dotted with fat. Bake for half an hour.

Shepherd's Pie.

This is the name of a meat pie with a mashed-potato crust browned in the oven.

USES OF STALE BREAD

Stale bread may be freshened by cutting the loaf in slices and steaming over hot water until softened. A colander may be used, wrapping the bread in a clean tea towel or cheese cloth. Do not allow water to drip on bread when removing the cover. This is a nice way to warm up "light rolls."

Large pieces of stale bread may be used in:

a. Toast. Milk or cream toast, dry toast or French fried bread.

b. Croutons or bread sticks which may be served in soups, stewed tomatoes, etc.

c. Making dressing for meats, fowl, stuffing peppers, etc.

Stale bread may be dried out and put through food chopper or rolled into crumbs on bread board. These crumbs may be used for:

a. Escalloped dishes as corn, tomatoes, potatoes, salmon, etc. The crumbs (plain or buttered) may be sprinkled on top of food in casserole.

b. Bread crumbs may be used for breading croquettes, mixing with omelets, souffles, scrambled eggs, griddle cakes, etc.

c. Bread crumbs may be used in puddings such as "Brown Betty" and "Bread Pudding."

d. Bread crumbs may be used to thicken gravies, tomato or cheese sauces, etc.—Miram M. Haynes, Colorado A. C.

WAR BREAD IN SCRIPTURES

"War bread" is far from being a new measure to conserve food resources. The Children of Israel, when they defended Jerusalem against siege, were advised by Ezekiel to utilize every possible means for supplementing their wheat supplies—and that was more than 2,400 years ago. A writer has revived Ezekiel's recipe in the following article:

A thirteenth century commentator, David Kimcai, drew attention to the verse in Ezekiel which said, "Take thou also unto thee wheat, and barley, and beans, and lentils, and millet, and fitches, and put them in one vessel, and make thee bread thereof." "The prophet," commented David Kimchi, "thus warns the disobedient children of Israel that, during the siege of Jerusalem, they will no longer be able to make their bread with pure wheat, but they will have to mix with it all kinds of grain and vegetables with which flour is not made unless extreme need makes it necessary to do so." Whatever Ezekiel may have meant by his advice to the Children of Israel, he furnished a receipe for war bread which is pretty certainly the oldest extant in the world. David Kimchi's comment is 700 years old and Ezekiel wrote 1700 years before Kimchi.—United States Food Administration.

When you answer the advertisements always mention the Utah Farmer.

Get the Big Price for Your Hay

DON'T be satisfied with the low or in-between price for your hay. Get the big price. The quality of your hay determines the price. There is often a difference of from $6.00 to $10.00 per ton between choice hay and hay that grades No. 3. Make better hay—increase your hay land profits by adopting the

JOHN DEERE DAIN SYSTEM of Air Curing Hay

Hay made by the Dain system cures better and holds its color. The leaves do not become brittle. There is little loss in handling. Hay made the Dain way keeps better in the mow, stack or bale, and is more palatable, more digestible and has greater feeding value. Whether you sell your hay or feed it, your profits are increased when you adopt the Dain system of making hay.

Rake Your Hay With a Dain System Rake

By following the mower closely with the Dain System Rake you turn the hay while the leaves are still active, delivering it in medium size windrows on clean, dried-out stubble. Raking against the heads places the bulk of the leaves on the inside (where they cannot sun-scorch) and the stems on the outside, insuring thorough evaporation of moisture. By adjusting the angle of the teeth, the density of the windrow is controlled, allowing for free circulation of air. Hay cured by the Dain system is air-cured, not sun-cured. The highest quality of hay is made in this manner.

It's An Easy Rake To Operate

You put the machine in and out of gear, change the angle of the teeth, raise and lower the raking head with levers that are accessible from the seat of the machine.

The Dain System Rake has unusual capacity. This is made possible by the high steel arch, together with the inclined frame, which grows in height as the windrow grows (an exclusive feature).

The Dain System Rake is making bigger hay profits for thousands of hay growers. It will do the same for you. Learn more about this valuable tool.

Write for Free Package DS-242

and you will get "Better Hay—How to Make and Market It," which tells all about the varieties of hay, their value, how to grow them. Tells how to cure hay, also illustrates and describes a full line of labor-saving, money-making haying tools. Beautifully illustrated.

Also the "Dain System Rake" booklet, which tells in detail how the Dain System Rake makes better hay. Illustrates the action of this rake, also tells about its construction and how easy it is to operate it. Illustrated in four colors. Write today.

JOHN DEERE
Moline, Ill.

BUTTER CAMOUFLAGE

Commercial devices for mixing milk with butter to make the latter "go farther" should be regarded with caution and used only with the full knowledge that the sale of the resulting product as "butter" is unlawful. The U. S. Food Administration has observed with regret the activity of agents and others who have taken advantage of war conditions to exploit butter "mergers" as the mixing devices are called.

"To make a high-class butter having satisfactory keeping qualities," a dairy specialist of the Food Administration points out, "good buttermakers remove the buttermilk by thorough washing. If the housewife mixes milk of any kind with butter, except of course for cooking or immediate use, she is simply undoing what the skilled buttermaker has taken pains to accomplish. Such a product soon becomes sour in warm weather and wastes the butter it contains."

Where the housewife wishes to "extend" butter by incorporating milk, cream or other liquids with it, waste may be prevented by mixing just enough for a day's requirements, and for such quantities a rotary egg beater or even a spoon is sufficient equipment.

Any mixing process is of course purely mechanical, adding nothing to the food value of the ingredients and because of the excess moisture contained in the merged product, it is officially known as adulterated butter. It may be lawfully used in private families, but heavy penalties are attached to its sale when offered as "butter."

The results of butter merging are largely psychological. To the eye the process appears to have converted milk into butter. But war-time economy suggests that the milk and butter be consumed separately in the usual manner, allowing the digestive system to do its merging in the natural way.

WEDDING ANNIVERSARIES

First	Cotton
Second	Paper
Third	Leather
Fifth	Wooden
Seventh	Woolen
Tenth	Tin
Twelfth	Silk and Fine Linen
Fifteenth	Crystal
Twentieth	China
Twenty-fith	Silver
Thirtieth	Pearl
Fortieth	Ruby
Fiftieth	Golden
Seventy-fifth	Diamond

SALARIES PAID IN ARMY

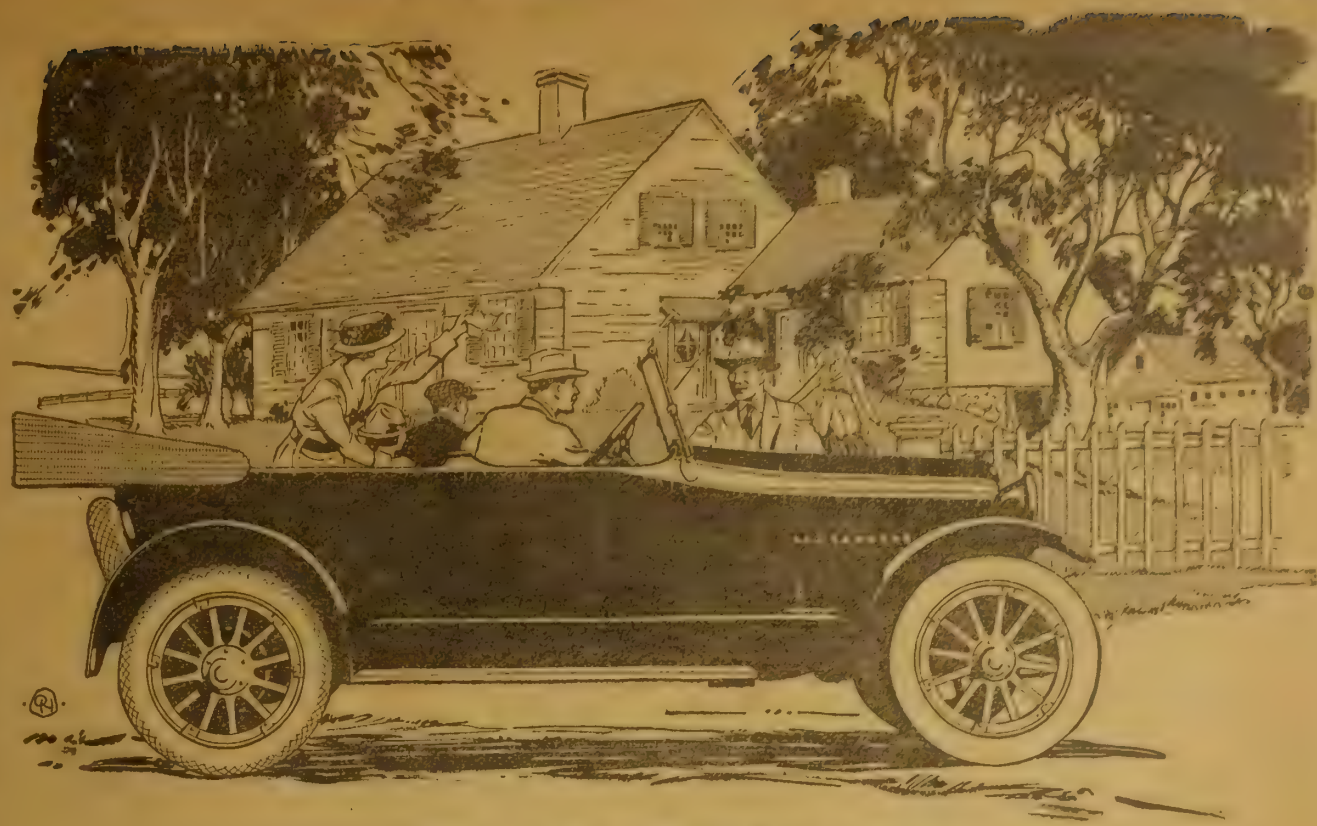
	Monthly	Yearly
General	$833.33	$10,000
Lieutenant General	750.00	9,000
Major General	666.67	8,000
Brigadier General	500.00	6,000
Colonel	333.33	4,000
Lieutenant Colonel	291.67	3,500
Major	250.00	3,000
Captain	200.00	2,400
First Lieutenant	166.67	2,000
Second Lieutenant	141.67	1,700
Sergeant	38.00	
Corporal	36.00	
1st Class Private	33.00	
2nd Class Private	30.00	

NOTE—The last four receive an increase of 20 per cent of the pay before the increase of June, 1917, for foreign service, which is equivalent to about 10 per cent of the pay as shown above.

TO PREVENT CONSTIPATION

Constipation long continued is no trifling matter. Free water drinking when the stomach is empty, especially befort breakfast, is beneficial.

The best regulators of the bowels are foods. Foods should possess sufficient bulk to promote the action of the intestines and should contain a due amount of laxative elements. Foods which are especially laxative are prunes, figs, most fruits (except bananas), fruit juices, all fresh vegetables, especially greens of all sorts, wheat-bran, and the whole grain cereals. Oils and fats are also laxative, but cannot be used in sufficiently large quantities to produce very laxative effects without producing loss of appetite. Foods which have the opposite tendency are rice, boiled milk, fine wheat flour bread, corn starch, white of egg. The use of wheat-bran in cereals, in bread, and even in vegetables is a preventive of constipation.



PAIGE

The Most Beautiful Car in America

Make The Minutes Count

In these war days you must realize that it becomes a *patriotic duty* to own a motor car.

The business of the nation must move forward on high gear. There must be no "let ups"—no wasted effort—no inefficiency. Every true American is expected to quicken his stride and make each minute a *productive* minute.

On the farm, especially—where distances are great—a dependable motor car is quite as necessary as the telephone. It is the most efficient form of transportation that has ever been developed—and transportation is the key to our entire national problem.

So, by all means, get a motor car—for yourself and Uncle Sam. *Any* car is better than a slow, plodding, horse-drawn vehicle, but common sense will dictate the wisdom of buying a good one while you are about it.

Take up the matter in the same careful way that you select agricultural machinery. Look for enduring *quality* rather than mere price. Buy a manufacturer's reputation rather than four wheels and a painted body.

If you make your selection on this basis, we are quite content to abide by the result. If you search for motor car quality you *must* find the Paige.

PAIGE DETROIT MOTOR CAR COMPANY, 248 McKINSTRY AVENUE, DETROIT

THRIFT AS A BY-PRODUCT OF WAR

In an address to the directors of the war savings' certificates' campaign at Washington on Friday last, President Wilson expressed the hope that the war might inculcate the lesson of thrift. He said that he supposed not many fortunate by-products could come from a war, but he added that if this country could learn something about saving out of the war it would be worth the cost of the conflict in money and resources. We have probably, the President said, wasted more, several times over, than we are now about to spend. We have not known that there was any limit to our resources; we are now finding out that there may be if we are not careful. Continuing, he remarked that one of the most interesting things about the loans recently floated was the extraordinary large number of persons who had invested in them. Before the loans were made, the number of investors in such securities was comparatively small—remarkably small Mr. Wilson said, considering our population and its wealth—whereas now it has swelled to millions, indeed, to almost one-tenth of the population of the country. That was a circumstance which, he observed, might have some very fortunate results.

He characterized as more intensive, and in a sense more important still, the matter of converting the small savings of the country into a war asset, of preventing waste and of managing some kind of accumulation from day to day, and he expressed his warm appreciation of the number of volunteers of character and experience that had come to the assistance of the government in the campaign for the distribution of war savings certificates. The poet has said through the mouth of one of his characters, a leader of his country in war time, that "there is some soul of goodness in things evil;" perhaps one of the outcomes of the terrible conflict may be teaching in a way not to be forgotten of the need of a more careful husbanding of our resources.

Judge: "Did you strike this man in an excess of irascibility?"

The Coon. "No, suh. I done hit him in de stummick."—Tiger.

The Relation of Livestock Production to Soil Fertility

Dr. W. C. Taylor.

We should keep in mind the fact that when our cattle, sheep and hogs eat products, whatever they may be, the offal from those animals contains from seventy to eighty per cent of the fertility taken from the soil in the growth of that feed. The fertility of the soil is no more inexhaustible than your money in the bank. If your bank account is not replenished from time to time, it will soon be in the red. The same thing is equally true of the soil. Unless you return something in the way of fertility, the land will soon cease to profitably produce. We should further keep in mind that a large per cent of everything that is grown from the soil is made up of elements taken from the atmosphere, and it is absolutely necessary that those elements which make up a great portion of the substance of the plant should be placed in the soil in order to maintain its humus or organic content.

The soil is not a dead thing, for if it were, it would not produce. A fertile soil contains myriads of microbes, or living organisms, whose function it is to manufacture plant food compounds out of elements; and those organisms cannot exist unless the soil contains a sufficient amount of organic matter. If we use fertility in the form of a commercial fertilizer, it will soon cease to be very effective unless the soil contains plenty of live humus; in fact, the ability of a commercial fertilizer to produce is increased manyfold by combining it with, or having in the soil, a goodly amount of organic substance; and the best and most effective substance is barnyard manure.

It is true that we can maintain humus by plowing under green crops, but it is far better and more profitable to feed roughages and secure the benefit from them in the growth of animals, and put the manure in the soil. By so doing we get the benefit of the feed, three-fourths of the elements taken from the soil in making those feeds, or, in other words, we get a double benefit.

The loss of fertility, through carelessness and a lack of appreciation of its value, in barnyard manure is appalling. According to the best available statistics, the waste from this source amounts annually to the stupendous sum of approximately $1,315,500,000.00. It is estimated by the government that at least one-half of the fertility in manure from livestock is wasted. In some farming sections not more than fifteen per cent of the manure produced is used. Even in some of the most intensive dairy regions where cows are largely stall-fed and comparatively great care is taken of the manure, the loss is approximately twenty-five per cent.

THE SOW AT FARROWING TIME

(U. S. Department of Agriculture.)

As the time for farrowing approaches, the sow should be watched carefully, in order that assistance may be given if necessary. The sow generally becomes nervous and restless as parturition approaches; she makes a nest for her young; a swollen vagina and milk down in the teats are other visible signs. One can be quite certain that a sow will farrow late in the afternoon or the following night when milk is found in the teats in the morning.

The feed at this time should be sloppy and limited in amount. Nothing but lukewarm water should be given the sow during 24 hours previous to farrowing. If she has already farrowed a litter and has been properly fed and cared for during pregnancy, little difficulty may be expected. With young sows, particularly those bred at an immature age, there is considerable risk at this time, not only to the pigs but to the sow herself.

There is a difference of opinion as to the amount of bedding which should be given to the sow at this time. An active sow in comparatively thin condition can be trusted with a liberal amount of bedding, but sows which are in high condition or which are at all clumsy, had better be given only a moderate amount of bedding. Leaves or short straw are preferred.

The farrowing pen should be dry and well ventilated, but free from drafts. Provide the pen with a guard rail of two by four planks with their edges against the sides of the pen about 10 inches above the bed. These prevent the sow from lying against the partition, and lessen the danger of injury to the pigs. The little fellows will soon learn to creep under the guard rail when the sow lies down.

The management of the sow during farrowing depends largely on the animal and on the weather conditions. Assistance should be at hand if needed, but the sow need not be helped if she is getting along nicely.

What to Do When the Pigs Arrive.

When the pigs are born during warm weather, they are less liable to become chilled and will generally find their way to the teats unaided. In extremely cold weather the pigs will be in danger of being chilled, unless the hog house is heated. To remedy this, place a few heated bricks in the bottom of a basket or small box, covering them with chaff or straw, and put a cloth over the top to keep in the heat; unless the sow objects too seriously, the pigs may be rubbed dry with a soft cloth and placed in the receptacle as fast as they arrive. If any of the little pigs appear to be lifeless when they are born, first see that all mucus is removed from the nose, then give the pig a few gentle slaps on the side with the hand. This will start the pig breathing if there is any life in the body. Give it a suck of the sow's milk and place it in the receptacle, as described previously. The pigs will not suffer if they do not such for a few minutes after farrowing.

Cut Out the Black Teeth.

Before placing the pigs with the sow, cut out the eight small tusklike teeth. There are four of these on each jaw in the rear of the mouth. These teeth are very sharp, and if left in the pig's mouth they will likely cause tearing of the sow's udder, and the little pigs cut one another's mouths while fighting for a teat. These teeth can be removed with bone forceps, wire nippers, or with a knife. Never pull out the teeth. Always cut or break them off. After this operation is over, place the pigs with the sow, care being taken that each one gets to a teat. When the afterbirth is passed, it should be removed from the pen at once and buried or burned. There are good reasons to believe that eating the after-birth is often the beginning of the habit of eating pigs.

As a rule, the sow should have no food the first 24 hours after farrowing, but should be given a liberal drink of warm water. If, however, she shows signs of hunger, a thin slop of bran and middlings may be given. The feeding for the first 3 or 4 days should be light and the time consumed in getting the sow on full feed should be from a week to ten days, depending on the size and thrift of the litter.

The Sow's Feed.

Great care must be taken to feed the sow properly. If she is not being properly fed, the little pigs will show it. If the pigs follow the sow around much and pull at her teats, it is a good sign that she is not giving enough milk, and more feed should be given to stimulate the milk flow. When a sow is overfed, causing a heavy flow of milk, scouring is generally produced in the pigs. If this happens, cut down the sow's feed immediately. Give the sow 15 to 20 grains of sulphate of iron (copperas) in her slop morning and evening, and if necessary, increase the dose until results have been obtained.

Exercise is Necessary.

After the sow has farrowed, it is

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

160-ACRE FARM IN CACHE VALLEY. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre, the pasture land for $10 per acre, or, if party does not wish to purchase the pasture land, we now have a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent intereste. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary, as part payment. There is still some due on the water.

160 ACRES OF LAND IN THE BEAR RIVER VALLEY, 80 acres irrigated and 80 acres dry. We can divide this 160 acres up to suit the purchaser. We can either sell the 80 acres of watered land separate, or we can sell the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of the dry together. We can sell the 160 acres at a cash payment of $3000 down and any reasonable length of time on the balance at 7 per cent interest. The purchase price for the 160 acres would be $10,500. Water can be had for the 160 acres.

4480-ACRE RANCH, divided as follows: 1280 acres is irrigated land, ample water. The balance of 2600 acres is grazing land, all fenced and cross-fenced, and is continguous to the other land. There are 400 head of white-faced cattle, 80 head of short 2-year-olds and 80 head of long yearlings; 10 head of good horses, tractor engine with plows and all necessary machinery to run the ranch. There is a large six-room house, barns and other outbuildings necessary to run a first-class ranch. The price of this ranch is $140,000.

10 ACRES FIRST-CLASS LAND, located one mile from Kaysville, on a good road. The land adjoining sells from $200 to $250 per acre. We can sell this land at $160 per acre, on good terms. This is a bargain and will not last long.

46 ACRES, $205 per acre. If you are looking for a first-class farm that will produce the maximum crop at a minimum cost, we ask you to investigate this farm. It is one mile southeast of Tremonton. The main canal passes right by this farm. Lifting your headgates, you get your water direct from the acnal; you have no laterals to bother with. It has a full water right from the Bear River canal. The place was all plowed last fall, with the exception of that planted to alfalfa. It is in first-class shape for crops this year. This has been known for a good many years as one of the most productive farms in Boxelder county. The improvements consist of a nice five-room house, large trees and lawn and flowers, making the place homelike. About one acre of fruit that is bearing well now. Good outbuildings. The property is on the main county road and is accessible to good schools, churches and social conditions. The terms are $3000 down and any reasonable terms on the balance. Three crops on this farm will pay for the land.

IN THE SAME VICINITY, immediately across the road from this property, we have 16 acres for sale at $190 per acre. This property is all plowed and under a high state of cultivation, ready to plant this year. Good terms on this property.

184 ACRES at $185 per acre, on good terms, or will cut into forty-acre tracts to suit the purchaser—one of the best farms that has ever been in our office for sale. The property is situated at Thatcher, a little town in the Bear River valley that has good schools, churches and social conditions. The property is right under the main canal, right near the mountain, hence it is mountain loam soil. The property is perfectly level, has been known as one of the best farms in Boxelder county for twenty-five years. This property is well improved from every point of view—has some beautiful buildings, is well fenced, has five acres of orchard and one-half acre of small fruit. Sixty acres of alfalfa. The balance of the ground has been raising grain, sugar beets and potatoes. This property is immediately adjoining the beet dump, and we believe that this farm will produce as much as any farm of the same number of acres in any part of this intermountain country. It has a full water right, good water for domestic purposes and it is seldom that a farm of this class is offered for sale.

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FARM AND RANCH DEPARTMENT.

EVERBEARING

ROYAL SUBERB STRAWBERRIES

20 for $1.00, 50 for $4.00, 100 for $3.75, $25.00 per 1,000.

ST. REGIS RASPBERRIES

20c each, $15.00 per 100.

DELICIOUS BLACKBERRIES

20c each, $15.00 per 100.
Transportation prepaid.
Every plant guaranteed to bear continuously this year.

E. E. CLARK

Lewiston, Cache County, Utah.

best for her to be in the open air. Of course, if the pigs are farrowed during the winter months, care will be needed, and it may be necessary to let the pigs reach the age of two weeks before turning them out. They can, however, get considerable exercise in the piggery or in the lot with the snow, and there is often a lot adjoining a barn that is sunny and sheltered from the cold winds, where the sow and pigs may be turned for exercise. Do not allow the pigs to run out during a cold rain.

If they do not get exercise, they will get fat and lazy and the usual result is the "thumps." This is caused by the fat getting so thick around the heart and lungs that the pigs find it difficult to breathe. The best way to prevent this is to avoid overfeeding and make the young pigs take plenty of exercise.

PROVIDING LABOR FOR FARMS BY MEANS OF CO-OPERATION

D. D. McKay, President of State Farm Bureau.

Whenever a farmer has a few minutes to spare from his own farm, or a team which can be used, he should hire himself and his team out to his neighbor who needs temporary assistance.

It is a well known fact that almost every farmer has from one to several days during the month that he and his teams are either totally idle or are engaged at unimportant tasks that can wait. The co-operative labor plan, therefore, is to have every farmer pledge himself, his men and teams on such days to the service of Uncle Sam, by way of planting or harvesting crops on his neighbor's farm, at a fixed and uniform wage.

I believe that the idle days on the farms of this state will average at least two per month. To save these two days for productive agriculture or to put them to better use, which is the same thing, on the 25,000 farms of this state is the equivalent of placing at least 3,000 men on the farms.

This is more than have been taken from the farms into the federal service. A benefit of almost equal proportions can be obtained indirectly by the adoption of this plan. Last year every farmer bid indirectly against his neighbor for the little transcient labor there was, and the results were that wages were advanced to a ridiculously high level. Nor was this the worst feature. With wages changing so rapidly, especially during the beet and potato harvesting time, men refused to work today preferring to wait for the advance in wage which they knew tomorrow would bring. Tomorrow they were of the same opinion. The clock ticked away a good portion of the harvest season before some made up their minds to work at all.

If this plan is adopted this will all be changed. Under this plan a conference would decide upon the wages that each farmer should pay to his neighbor, which would also be the wage that he received.

Wages would then become standardized by common consent, and the transient help would know what the rate of pay was, and that it was the same in every place in the state. There would be no bidding against each other, and there would be no object in transient help moving about from place to place—thus wasting valuable time, or in waiting for wages to raise.

(It is planned to call a conference of delegates from the Farm Bureaus to meet in Salt Lake City, some time about the first of April, conference week, when these ideas will be considered and some action taken).

A CHEERFUL THOUGHT

Be cheerful. Mental depression checks digestion. Poor digestion wastes food. Wasted food helps the enemy. Cheerfulness is conservation.

HEAT FOR THE HOTBED

By T. H. Abell, Assistant Horticulturist, Utah Agricultural Experiment Station.

The heat for the hot bed is ordinarily derived from fresh manure from grain-fed animals, preferably horses and mules. It should contain about one-third its bulk of strawy litter. The fresh manure should be gathered and piled under shelter in a pile four feet wide and four feet high and as long as necessary. It will begin heating in a day or two; if it should not, pour a little hot water on it to start the fermentation. After four or five days, fork the manure over into another pile, taking care to get the outside of the old pile mixed through the center of the new. In a few days more the heat will have become distributed throughout the pile again.

The manure should now be placed in the hotbed pit in layers of about six inches and well tramped, especially at the side and corners, until it is about two feet deep. Now place on the manure about six inches of soil consisting of one-fourth sand, one-fourth rotted manure, and one-half good garden soil. Place the sash on the frame and allow the manure to heat a few more days. Thrust a Fahrenheit thermometer through the soil and into the hot manure and watch the temperature for several days. It will soon rise to over 100 degrees F., and then go down again. When the temperature has gone down below 90 degrees F. it is safe to sow the seed.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

FOR SALE

Three new 14-inch power lift John Deere engine gang plows. Can save you from $50 to $75 on present prices of these kinds of plows.

JESSE HARRIS
Layton Utah

DUROC JERSEY BOARS

Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.

ERIK W. OLSON
Virginia Idaho

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Greatest layers year in and year out. Shipments arrive safe—small expressage. Single Comb White Leghorns guaranteed. Chicks shipped everywhere west of the Rocky Mountains—always at lowest prices. Full information on request. Established 25 years.

J. A. DOSS
337 Howard Street Petaluma, Cal.

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this rot crop to supply an essential food for both soldiers and civilians. The world is crying for sugar, do your part towards supplying this demand.

OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, Decemb 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, Whi + Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.

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Provo Utah

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Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
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Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Ramb uillet Sheep.

W. S. HANSON, Prop.
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Registered Holsteins For Sale

A grandson of the king of the Pontiacs coming four years old, must sell him so as not to inbreed. He weighs nearly a ton, is mostly white and a dandy. Also one of his calves out of a good producing four year old cow. Can also spare two four year old cows. Come, write, or phone for prices and discriptions.

LELAND STEVENS
Oakley Utah

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service.

Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

ORDER SPRING PIGS NOW

Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.

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$1000 Per Acre

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White Leghorns, Brown Leghorns,
March delivery $12.00 per 100
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BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

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VOGELER'S Purity Seeds with your assistance will help win the War.

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Our Catalog is Free.

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GLOBE GRAIN AND MILLING CO.
Kearns Building
Salt Lake City, Utah.

EFFICIENCY AND CONSERVATION NECESSARY

E. L. Vincent.

There is no better way to increase the efficiency of the farm than to have every cow, every horse, every animal of every kind the very best possible. Millions of tons of poor gun have gone to the scrap heap in the last few years. That is the best place for farm stock that does not toe the mark.

Any machine which takes the place of a man and makes it possible to grow more and better crops is a worth-while thing. We have come to a time when we must put our dependence, not in the legs of a man, but in the zip of a machine. We may be supremely thankful that we have the machinery.

The ability and the disposition to turn every scrap of everything that grows on the farm to some good account is a help to making the world better and happier. Somenow we need to cultivate this power of mind and body, than which there is none more to be desired.

Some men are economical by nature; others have to have it whipped into them with the sharp lash of adversity. We are living in times when, by hook or crook, we must economize. And this is the duty of every man, whether a millionaire or a farm tenant. How shall we live up to our duty and privilege best? By stopping and asking ourselves very often, "How can I make the most of this?"

It is not good for any man to live on the leavings, nor to make his wife and little ones do so; and yet, much may be saved by watching the apples and cutting out specks or rot and using what is good. Such fruit makes fine apple sauce and good pies. The specked apples so many times go out to the hogs and no thought taken of the part that may be saved and used.

Speaking of cutting out the spots of the apple which have begun to decay calls to mind that the bits removed may go to the poultry yard and prove a choice bit for the biddies. They need some fresh stuff and these are wonderfully appetizing, and help to make eggs, too.

Again, the potato parings may be worked in the same way. Have a kettle on purpose, boil these parings together with any small potatoes you may have mash them and see how the hens will take them. A bit of milk makes the dish more eppetizing and rich.

But it pays to use just as small potatoes as one can these days. It is not so much fun to peel them as it is the great big ones; and yet, when one thinks as he works, of the price many would pay if they could get even these small potatoes, and how hungry they get because they have neither the money nor the potatoes, it brings a warm feeling around the heart.

Down at the barn, too, we may speed up the dairy by feeding to the best possible advantage. Most always there is some fodder that is likely to be wasted. Every scrap of this can be turned to good purpose now. All corn stalks, every wisp of hay, every spoonful of grain must be made to do its part.

It is a loss to leave cattle out in the cold. They have to be fed more to make up for it. Cold takes hay and grain for fuel. The barn is the best place for stock on a windy day.

The chips from the wood yard and all slivers may be brought in and made to serve a purpose in the household economy. Rot means waste, and waste means want for somebody.

It is popular to knit these days, but what about darning and sewing on patches? Can't afford to neglect this art. Patches are all right, for they mean clothes made to last a little longer. A hole is a disgrace, a patch never.

FOOD PRODUCTION AND FERTILIZATION OF THE SOIL

It has become clear to all Americans that it is a matter of self preservation to a degree to produce as large a crop of wheat as possible this season.

To insure the farmer in his attempts to do this, the government has guaranteed him a price of two dollars per bushel for next year's crop. Consequently, the farmer casts about to find somebody who can tell him how to increase his crop. Some of the data obtained by the University of Idaho Experiment Station should prove of value in this connection. Plots on the experiment station and on farms, as well, have been treated with fertilizer to determine what increase can be obtained, and the results justify us in saying that the question of fertilization should have very serious consideration. Four plots on the station were treated with nitrate of soda in the spring of 1915. The yield was increased seven bushels per acre over the average of those plots not fertilized in this manner. Without further addition of fertilizer these plots showed an increase of 23 bushels of oats the following year. Four other plots were given nitrate of soda and showed an increase of 29 bushels over plots which had not received this treatment. During the present season, those plots receiving nitrate of soda in 915 were planted to potatoes and yielded 26 bushels more than the average of other plots. Those plots receiving nitrate in 1916 gave an increase of three bushels of oats due to the treatment, and four other plots treated in 1917 gave an increase of five bushels of wheat.

Under the government' plan of distribution of fertilizer authorized by the pure food bill, nitrate of soda will cost about $3 to $4 per hundred pounds and the application of it to the land should be about 50 cents per acre. At the rate of 100 pounds per acre, it should cost the farmer around $4.50 per acre. If an increase equal to our lowest results can be obtained, the farmer can realize at least $7.50 gross profit per acre, leaving a net profit of $3 per acre due to the use of the fertilizer. The increase of the next two years will all be net profit. Would it not be a wise plan for the Farmers' Union to take up this matter and get the government to supply them with large amounts so they may get it as cheaply as possible.

Correspondence in this matter will receive prompt attention and more detail will be given in the next issue of the News Letter.—P. P. Peterson, Department of Soils.

SHEEP

I. D. O'Donnell.

If it may be said that I am partial to one kind of livestock on the farm, I hope I may be accused of favoring sheep. The sheep was one of the first animals to be brought into domesticity by man and through centuries has contributed in no small way to the sustenance and comfort of man. Absolutely dependent as it is upon man to protect it in the field and to administer to its needs within the fold, it apparently will continue indefinitely to repay for this care by supplying the needs of man which are not supplied by any other animal. It favors no particular race of mankind and responds to his husbandry in every climate. The oldest and most densely populated portions of the world find its presence a necessity, and the pioneer building a home in a place remote takes with him this timid creature.

If need be, the sheep takes its living from waste places or from the aftermath of cropped fields and the places where it feeds are made fertile. It thrives as well in the straw thatched shelter as in the most expensive fold. The sheep is the domestic animal universal, and its good work is not yet done.

Recently a man bought a second-hand automobile, which turned out to be a cripple on four wheels rather than a pleasure vehicle. He was describing some of the patient's symptoms to a friend.

"I take it, then, that she rattles a good deal when you run her," said the other man.

"Rattles!" said the owner of the car. 'She sounds like a skeleton having a congestive chill on a tin roof!" —Saturday Evening Post.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving

Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

INFLUENCE OF MOISTURE SEED PRODUCTION AND VITALITY

(Continued from page 3)

But this is only half the story: the other half is that acre-yields may be increased materially by applying water at just the right time. If only one irrigation is to be given, it is best given when grain is in the five-leaf or in the early boot stages. Water applied then gave 40.8 and 39.1 bushels of wheat, respectively, as opposed to 36.7 bushels in the soft dough stage, 38.2 in the blossom stage, and 29.7 bushels when applied after the wheat was planted but before it came up. No water at all gave a yield of 37.3. Irrigation, then on top of ungerminated seed markedley decreased yield. Water appued as late as the dough stage had no effect on the yield. The five years during which these tests were made seem to have been favorable for dry-farm production. Coupled with other tests, however, these experiments show conclusively that grain on deep loam soils is helped most by relatively early irrigations.

When 15 inches of water were applied in three 5-inch irrigations, those applications made at the five-leaf, the early boot, and the blossom stages gave 52.4 bushels as compared to 48.5, 45.7, 46.7, and 37.8 bushels for other combinations of three 5-inch applications. Here is a gain of from 4 to 7 bushels for more timely irrigations. Gains of from 9 to 15 per cent in any business except farming would be recognized at once. A new method which would produce such a saving or such an increase in production would be widely sought after even at considerable cost. Yet, in many cases all the farmer has to do is to reach out his hand, and the added profits are his for the taking.

Quality May Also Be Improved

Although heavy applications of irrigation water do not materially increase the yield of grain, they do markedly increase the yield of straw. Under light irrigations the weight of the straw nearly equals that of the grain, whereas under heavy irrigation there is from two to three times as much straw as grain. Were straw valuable in proportion to grain, this would be an important item, but such is not the case, and particularly when grain is grown for seed. Straw uses the mineral elements from the soil and is not, therefore, so economical as is grain on account of its value being less. Heavy straw costs extra labor and increase the difficulty of proper curing. Moreover, rust is much more likely to occur in such fields. Because light irrigation produces more seed than stem, it is more profitable to irrigate lightly for seed crops.

Heavy irrigations cause the grain to contain more moisture than do small applications. This lessens the quality of the grain for both miller and seedsman. Milling wheat grown under damp conditions lack both the keeping and the flour-making qualities of grain produced under drier and hence under more favorable conditions. Much moisture softens grain, thereby injuring the bread-making properties of its flour. Because heavy irrigation increases the moisture content of the kernels, it decreases the keeping quality of the grain, thereby decreasing the vitality of the seed.

Much Moisture Injuries Vitality

Moisture injuries the vitality of seeds in several ways. All seeds keep for a longer time when in a dry state, because danger from heating and molding are less and because it passes into what is called a "rest period." This rest period is merely a sleep during which the seeds breathe more slowly, for plants breathe as well as do animals. When seeds are moist and warm they breathe rapidly and thereby exhaust themselves much sooner than if kept dry. Moist seed therefore, even when well kept, looses its vitality sooner than does dry seed.

Danger from heating and from molding is infinitely greater when seeds are moist than when dry. Dry-farm grain and grain produced with moderate irrigations and properly cured are in no danger of heat injury or of mold. Careful experiments by Harris and Thomas (Utah Bul. No. 130) show that wheat and oats stored in a barn were drier at the time of threshing than at any time thereafter for several years. The grain gained moisture steadily from September to early spring and then lost steadily till late summer but never become as dry as when freshly threshed. Large elevators at Cache Junction, Utah, also gained in weight from August to March. These results show that well-cured, dry grain not only will not mold or heat in this region, but will actually take up moisture. On the other hand heavily irrigated grain is likely to be both over-moist and improperly cured.

Ordinarily the straw is ripe or nearly so when the grain is ready to harvest. Under normal conditions it is well to cut just ahead of complete maturity in order to avoid loss by shattering. Comparatively soft straw, if well-shocked, causes no heat injury for food material is yet being moved out of the straw to the head. This "after-ripening" process, if it affects at all, seems to improve the quality of the grain for both flour and seed. But heavily irrigated grain is likely to have such green straw as to cause heating, especially if it has lodged. Often a slight heating takes place which injures wheat for milling but much more markedly for seed. This heat damage usually shows as a slight browning on the germ end of the grain, and is called "bin-burning" but is really heat damage, which took place in the shock or stack.

Heavily irrigated land often bears much sweet clover, wild lettuce, mustard, or other succulent weeds mixed with the seed crops whether they are grain, alfalfa, or clover. These weeds are usually green at harvest time, and, on that account, cause difficulty in curing. Long, heavy weeds are burdensome on both man and machine; they leave seeds that contaminate the grain or alfalfa seed. Worse than either of these troubles, however, is the fact that they cause heating in the shock or stack. Heating of this sort is deadly because, in addition to the excessive moisture, odors and stains are brought in contact with the seed. These notably injure the vitality of the seed and in the case of wheat and oats decrease their selling value by discoloring them.

This loss is much more serious than ordinarily suspected. During the six months from July 1 to December 31, 1917, the Utah-Idaho Grain Standards Office found 35.8 per cent of all hard winter wheat to be graded down on account of "heat damage," and this, too, in regions having climate so dry as to necessitate no injury whatever.

Summary

Grain production may be increased materially by spreading irrigation water over more land and by applying it during the early stages of growth. Heavy applications decrease the proportion of grain to straw and also injure the milling, the keeping, and the germinating qualities of the seed by increasing the moisture content of the kernels.

Vitality of seed is injured by excessive moisture because this hastens breathing and increases the risk of heat damage and of mold. Curing is also made more difficult because of green straw and succulent weeds. Weeds are especially detrimental, not only because they require extra labor and contaminate the seed crops, but because they render "heat damage" extremely probable.

More seed of better quality will be produced under clean farming when only small quantities of irrigation water are used.

You May Not Have a Son to Send to the Front

but your neighbors sons have gone; and man power will be scarce this year. The Gas Tractor will help fill the gap.

E. B. 12-20 H. P. TRACTOR

will handle 3-14 inch mouldboard bottoms, or four Discs. A 24 inch Thresher with Blower and Self Feeder.

12 Years Experience back of this Tractor.
4 Cylinders.
3 Speeds Forward 1 Reverse.
8 Hyatt Heavy Duty Roller Bearing.
All Transmission gears are cut steel and run in a bath of Oil.
Auto Type Steer.
Spur Gears and Pinions are reversible.
Call or write for further information.

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Murray, Utah — Idaho Falls, Idaho

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Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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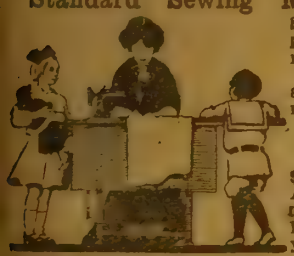

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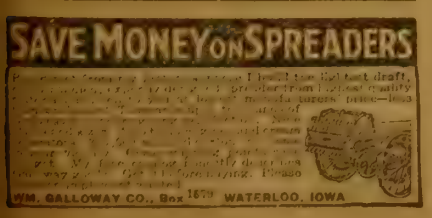

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NEVER before has the demand for Automobile, Tractor, Truck and Aeroplane motor Mechanics been so great. Your service is needed in the Army, driving and repairing Trucks and Ambulances; in the Aeroplane section repairing motors; on our farms using Tractors; besides, remember that this country has 4,000,000 Automobiles. Thousands of mechanics who formerly took care of them are in the Government service. Somebody must take their places. It is up to you to take the places in the garage, etc., of the men that must go. Realizing these conditions I have made preparation to train men to fill these important positions. The demand for men is here. I am ready to train them. If you are in the draft come here and be trained so that you can give a special service to your Country.

WRITE FOR FREE CATALOGUE.

I have written a catalogue that shows pictures of all departments and describes my school. I want you to have it. It will tell you how I teach the Automobile, Tractor business; open your eyes to the opportunities for splendid positions at good money. This Country must have trained Mechanics. Take advantage of present conditions, write for my free catalogue; it's a trip through the greatest school in the world. Today is the day of oppportunities, grasp them.

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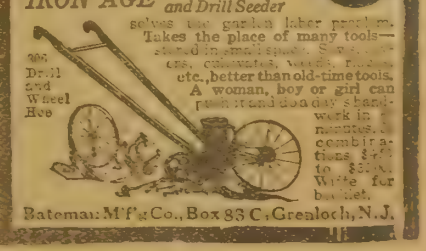
IRON AGE
GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder



solves the garden labor problem. Takes the place of many tools—stands in small space. Saves time, energy, money, money, money, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in minutes. Write for booklet.

Bateman M'f'g Co., Box 83 C, Grenloch, N.J.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

CONCRETING THE MAIN HIGHWAYS A SOUND AND ECONOMIC MEASURE

(Continued from page 4)

siderably less returns to those paying the bills than paving an important country highway. City streets are paved more for esthetic than for economic reasons, for the majority of of property owners use the sidewalks and the street cars far more than the street pavements. On the other hand, when one considers that the country highway is generally the only means of transportation which the farmer possesses, it is quite difficult to understand why so much paving is to be found in the city and so little in the country.

Being unable to understand this fact becomes still more difficult after one has analyzed the actual costs of paving in both places and has compared the results. A few calculations will show this very plainly:

1st. City Pavement.

Assume a lot 300 feet deep facing a street 75 feet wide between gutters, and upon which there is a double track trolley line. Since the trolley line must pave its own right of way, which is generally 21 feet wide, there would be left a strip 54 feet in width, the paving of equal portions of which must be born by the property owners on opposite sides of the streets. As the average cost of paving a city street is $2.00 per square yard, to which must be added an additional charge of about $1.00 per lineal foot for the curb and gutter, there would result a total cost to the abutting property owner of $7.00 per foot. Again considering that the property in question is 300 feet deep, this cost per lineal foot would be the equivalent of $1016 per acre.

2nd. Country Road.

Assume an 18 foot wide concrete road running length wise through a county upon either side of which are farm lands extending for three miles. Here the abutting property which is served by the concrete road, instead of being 300 feet in depth is 3 miles Assuming further that the concrete road will cost $1.80 per square yard (which is about correct for this intermountain country), the net cost per foot of abutting property would also be $1.80, or only $3.30 per acre.

City Paving Costs 300 Times More Than Country Paving.

$1016 per acre to the city man for paving and $3.30 per acre to the farmer! It is indeed most difficult to understand why most of the paving in the United States is to be found in the cities under these conditions. Is it because the country man is really attached to his mud and dust environment?

Financing The Cost of the Permanent Country Highway.

The only logical and economical way of raising sufficient funds to construct a system of permanent highways is by a bond issue. For instance, say it was desired to pay off the above debt of $3.30 in a period of 20 years, by what is commonly known as the annuity plan. Basing our calculations on an interest rate of 5 per cent, and including a sufficient amount with which to maintain the new highway, we find that an annual payment of 30 cents per acre is required.

Concrete Road Will Cost 11 Cents More Per Acre Than The Unimproved Highway.

But the old unimproved highway costs something to maintain and sprinkle. Where traffic conditions are at all heavy, $1000 per mile per year is not an excessive amount for keeping the road in passable condition. $1000 per mile per year would be, in this particular case, the equivalent of 19 cents per acre per year. In consequence the concrete road will cost you just 11 cents over and above what the old road cost. It is worth it? Let us see.

Saving in Cost of Hauling.

According to authorative figures, it costs just 25 cents to move a load of one ton a distance of one mile on the ordinary unimproved highway. To move the same tonnage the same distance on a concrete road costs 15 cents.

Suppose the acre of ground in question, which on account of the new highway is costing you 11 cents per year, yields one ton of produce which must be marketed at some distant point, requiring a haul of say 5 miles on the concrete road. Saving 10 cents on each ton for every mile traveled, there would result a total saving of 50 cents. In other words, is one trip you have paid off the cost of the road and netted a profit of 39 cents besides.

In support of this argument, Albert J. Beveridge, our most recognized statitician is quoted as follows:

"One of the most conservative and accurate American Economists has shown by careful figures that American farmers lose nearly ten hundred million dollars each year because they cannot get what they have to sell within reach of the purchaser."

It stands to reason that if this country today possessed a system of highways as efficient as its present degree of wealth and development along other lines would warrant, there would be no need of making the above statement, or of arguing about the savings in cost of hauling.

Increase In Land Values

Another important item which we must not overlook in calculating the profits to be derived by improving the roads in a community, is the probable increase in land values. According to bulletin No. 136 of the Department of Agriculture, land values in Manatee County, Florida, after a system of improved highways had been constructed increased $10 to $20 per acre. In Spotsylvania County, Virginia, land selling at $24.74 per acre sold for $44.74 after good roads were constructed. On eight pieces of land in Franklin County, Virginia, selected at random, an average increase of $27.80 per acre was noted. Other counties in many other sections of the country also experienced big increases in land values in the same manner. Again, the improved highway in question will cost you 30 cents per acre per year for 20 years, or a total of $6.00. This figure, compared with the average increases in land values all over the United States, due to road improvements, is quite insignificant.

From the above line of reasoning it is very evident that a farmer has everything to gain and nothing to lose by getting behind a general good roads movement in his community. Never yet has there been a single potent argument against the construction of efficient highways. They are most vitally essential to the welfare and progress of our great nation.

—o—

What has become of the old-fashioned girl who didn't expect to marry an army officer?

EXTREMES in rural transportation meet when a mudhole road intersects or parallels an interurban railway. Concrete is bringing mudhole roads up to modern requirements.

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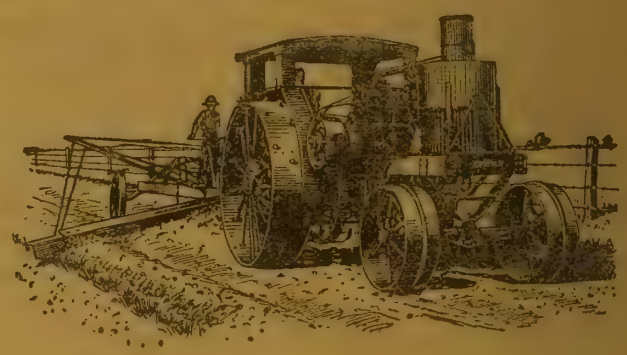

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VOLUME XIV; No. 34 LEHI AND SALT LAKE CITY, UTAH. MARCH 23, 1918

RAISE MORE SUGAR BEETS

BY DR. E. G. PETERSON

President Agricultural College, Chairman Committee on Food Supply and Conservation State Council of Defense.

The season's planting in Utah will be practically accomplished within the next month. During the short interval between now and the time of seeding, the farmers should very seriously consider their relationship to the great issues that now confront us. Food is the one determining factor in the war; to be sure, not alone raising the food but also transporting it to those in need. If Russia could have been properly provisioned she would today, it is reasonable to think, be fighting with the other free peoples of the earth against the ravage of a prostitute nation, military mad. Food must be produced by America and sent to suffering Belgium, France, England and Italy or the tragedy of Russia will be repeated.

The Utah farmer is a heavy contributor of all the important war foods, meat, sugar and wheat. There are only a half dozen or so states that have sugar factories. Therefore all the sugar from the sugar beet must come from these states. Utah is one. **While the importance of raising wheat and other cereals cannot be overestimated, I unhesitatingly say that the Utah grower should grow beets in preference to wheat where both are possible.** Heavy increases in wheat will undoubtedly be registered in the big wheat states of the union, and in Utah also.. It is our special privilege, with a few other states, to increase our beet acreage.

The labor problem should not frighten us into reducing our acreage. A law has passed Congress which authorizes the War Department to grant furloughs to farm boys in order that they may return and help on the farms. While it is not yet known exactly how the War Department will proceed in this matter it seems reasonable to suppose that hundreds of Utah boys will be available by furlough from the Army to help during the rush of work. The boys of the State are being organized into the Boy's Working Reserve. All in all there will be considerable labor available.

Those who can raise beets should put in every possible acre because it is a patriotic duty and because it is profitable. It will be a wonderful record if Utah can accomplish an increase in sugar beets of from fifteen to thirty per cent. Let every honest man do all he can so there will be no regrets when these wonderful days of service to humanity pass and we return again to the narrower vision of personal gain. Today the Elect of the Earth are being chosen.

WHY MORE SUGAR?

BY DR. F. S. HARRIS

Director, Utah Agricultural Experiment Station.

A number of farmers are asking why it is necessary to have all this agitation about more sugar beets. They want to know if a shortage of sugar really exists, or if the propaganda is being promoted by the sugar companies in their own interest. It is to explain these matters that this article is written.

Of course the sugar companies are anxious to make lots of sugar. What progressive enterprise does not want to do a big volume of business? And why should they not be at perfect liberty to further their business interests? The propaganda for increased production of sugar that is being carried on by the government does not, however, primarily have in mind the welfare of the sugar companies. It has for its aim the preventing of a food shortage throughout the nation. The outcome of the war will be greatly influenced by a number of foods and one of these is sugar. It is as important for the nation to be well provisioned as for the soldiers to be well supplied with ammunition.

The shortage of sugar has resulted from a number of conditions. Most of the beet sugar of Europe is produced in Germany, Austria-Hungary, Russia, Northern France, and Belguim. During the first few weeks of the war in 1914, Germany made her infamous drive across Belgium into Northern France and occupied practically all the sugar producing portions of both these countries. Sad to say, Germany still holds these areas. The Russian sugar is cut off from England and France by Turkey, so that the ordinary source of sugar of our allies has been greatly interfered with.

The United States and her possessions produce only about half of the sugar we use. Cuba has been relied on for most of the balance. But now the Cuban supply is the most convenient source for the allies, and it cannot supply both us and our allies. India and Java have large quantities of sugar, but these countries are so far away that ships cannot be spared to go after it. It requires three

(Continued on page 9)

How They Found Farm Labor

Every American believes he can do anything any other man has done—and maybe do it a little better. Every community expects to be a New York or a Chicago some day. It is natural. We are born that way. And, because we believe we can do anything, and because we back up our confidence with an abundance of hard work—why, we usually succeed in doing it!

All of which is by way of saying that individuals and communities throughout the country faced farm labor shortages last year—and solved their problems. Various methods were used—emergency volunteer workers from towns and cities, high school boys, county labor bureaus. The labor question is a pressing and perplexing one now. Governmental agencies are doing everything they can. But, after all, individual initiative and action must be relied upon largely. You—your town—your county—can do what other people, other towns ,other counties did last year. And here are some of the things they did:

In Hood River County, Oregon, which is a fruit country, the schools were closed during apple picking time, so both pupils and teachers could go to the orchards. Practically all the stores closed one-half of each day and all the employees worked at apple picking and packing. Throughout the county owners of automobiles and trucks gave the use of their machines to carry the workers to and from the fields. These measures enabled the apple growers to save a crop, much of which would have been lost otherwise.

In Maine the labor shortage that threatened serious potato loss was relieved to quite an extent by training camp boys, or "Junior Volunteers." These boys, from sixteen to twenty-one years of age, were mobilized at a State training camp, given a short course in practical farm work and were sent to the potato fields, and other farms, where help was needed. They were under military discipline and were uniformed and carefully supervised at all times.

A boy's camp was conducted in Pennsylvania, where a two-weeks training course was planned. According to reports from that section these boys went at their work so earnestly and were so anxious to give satisfaction that it became difficult to keep them at the camp for the full period of training—farmers wanted them before they had completed the perscribed course.

In two boys' camps in Arizona last year 129 boys hoed 2,000 acres of cotton and cultivated 85 acres of melons and 25 acres of potatoes.

In an Indiana county the head of a big cannery saw that the local truck supply, upon which he depended, would be greatly curtailed unless the labor shortage was relieved. He didn't want to have to shut down his canning factory. So he financed a boys' training camp and the forty boys who were trained there supplied the truckers with enough labor to carry the gardens through in good shape.

In Wallowa County, Oregon, ten farmers in one locality, being unable to get any outside help, joined forces and by all working upon first one place and then another, as conditions demanded, succeeded in saving the crops on each of the ten farms—principally hay and grain—thus avoiding the loss that would have been inevitable if they had not pooled their efforts or secured outside help.

In Cache County, a county labor exchange was established at Logan with branches in many towns in various parts of the county, each exchange conducted by the commercial secretary of the town, or by some business man who volunteered or agreed to do the work. The farmers constantly informed the exchange of their labor needs and the exchange secured the supply locally if possible, and if not tried to get men from another section.

In one Wisconsin county where potatoes are raised extensively and farm help was scarce, the county agent arranged for and conducted seven potato-digging excursions. Business men and high school boys volunteered for the work, and persons owning automobiles allowed their cars to be used to carry the "excursionists" to and from the fields. Local authorities estimated that about 7,000 bushels of potatoes were dug by these volunteer workers, and since no other help was available at the time it is probable that this amount of foodstuff would have been lost unless emergency measures had been adopted.

The county agent in one County of Iowa, sent to every farmer in the county a card requesting a statement of his probable labor needs. With this information in hand the county agent located all the experienced farm help that could be made available anywhere in the county, organized the older high school boys and secured some outside labor, these supplies succeeding in meeting the local situation fairly well.

The authorities in one county of Wisconsin, according to a report of the county agent, "passed a resolution that every man must go to work or go to jail. This had the good effect of causing to go to work people who had only been loafers before that time."

In Colorado, Maine, Wisconsin and all the potato-growing States there were many instances of clerks and office workers taking a leave of absence and going to the fields to dig potatoes. One man, describing his expereience, said he took part of his pay in potatoes and as a result had plenty of that food for his family this winter, at much less cost than if he had bought the supply from his city salary; that the outdoor work improved his health and, which he said gave him more satisfatcion than anything else, he has the consciousness of having helped his country just a little by his own physical effort—even though in a humble and unpicturesque way.

WHY NOT GO THE WHOLE HOG?

(By Dr. Frank Crane.)

What's the use of trifling? We'er in this war. Things are getting darker daily. Little by little we're realizing that we are fiddling about, trying this and that, when we should be bringing our last resources into play.

Hence, the motion is made and seconded, that we go into this war business to the limit, that we go in to win, and that we exert every ounce of our force.

To this end let the government take over every railway in the United States, enroll the officials as government servants, put every brakeman and engineer on the same basis as the boys in the trenches, and after paying stock and bond holders the same rate of interest that government bonds bear, confiscate the remaining profits for national use.

In the same way take over all telegraph and telephone companies, maintaining them as parts of government machinery, until the war is over.

Commandeer every pound of wheat, issue it only in government rations send what can be saved to the allies.

Likewise all packing houses and their meat products.

If what Hoover says about winning the war is true—why monkey with the matter? Take it all, and do the buisness right. Don't dowdle about pleading with the ladies to watch the garbage pail. Ration the whole country.

A good deal has been said about whether war widows should wear mourning. Why not strike right at the root of this clothing business? The soldiers wear uniforms; why not the rest of us? If a whole people, men, women, and children, were to put on clothes of a certain price and texture, it would show we mean business.

Imposible? What's the matter? Haven't we spirit enough to get together, all of us, and save the last cent, and undergo any restrictions, for the common good?

If we'd go the whole hog at once we would shorten the war by a year or so.

Germany is organized to the last man and school boy; the only nation that can beat her will be the one that has guts enough to do the same.

It is time to stop big war profits for private persons, srikes by discontented laborers, extravagance by women, and for the government to take it all, from the stock exchange to the grocery store.

If the people of the United States think they can run this war as a sideshow they're mistaken.

If they don't get busy in earnest, if they keep on as they're going now, we'll be warring for ten years to come.

AMERICAN'S OPPORTUNITY

The Buffalo News.

The war cannot leave the world as it was before; the result must be either a worse or a better one.

If Germany should win it means that the principles of her government must triumph. It means that ruthless force will be the rule and exploitation the method. It means the oppression and suppression of small nations.

Even should the result be a draw—a stalemate with Germany in her present state of mind the whole world would be nothing less than an armed camp. We should be compelled by the conditions with which we were faced to be in readiness, or in a constant preparation for a renewal of war.

Can anyone contemplate such a situation with equinimity? It would mean fiercer hatreds and bloodier wars.

If, on the other hand, the allies win it means a better world reorganized on a basis of justice and peace.

And the result depends upon all of us—those in the field, in training, at the council table, executives of industry and workers alike.

We are out to remove that force that is contrary to our principles of liberty—that force which would impose might upon the people instead of right.

We are at war to prevent any nation from imposing upon us or any people a military autocracy and are resolved that no such catastrophe as the one we are now suffering under shall occur again.

Hence the need for unity and coordinated effort which shall usher in the reign of international justice among men.

America has a great opportunity. We have the chance to show that we are both an idealistic and a practical people.

In league with the other free nations we must set up an international standard of justice and an impartial tribunal which shall dispense it. By so doing we can fulfill a great destiny for our nation and bring peace and good will among men.

"VISSIBLE SUPPLY" EXPLAINED

As commonly used the term "visible supply" applied to an agricultural food commodity means the stocks at primary interior points, plus the amount on the lakes, rivers and canals, plus the stocks at principal export points. It is an approximate measure of supplies actually in sight and moving through trade channels, and does not include the amount which has not yet left the farms or the areas in which produced.

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VOLUME XIV. LEHI, UTAH, SATURDAY, MARCH 23, 1918 No. 34

Acre Cost of Producing Dry Land Wheat

By J. W. Jones, Supt. Nephi Dry-Farm Experiment Station.

The price of wheat is usually based on supply and demand. By supply is meant the visible wheat, and also the possible yield of the future crop. Wheat has a world market, therefore, the price per bushel is based on the world supply and demand. At present the demand is far greater than the supply and prices are high. Before the European war, supply and demand were more equally balanced and prices were lower.

Indirectly the cost of production also influences the price of wheat. If the cost of production is greater than the price paid by consumers the supply decreases. In other words, farmers grow other crops then. When the demand increases, due to decreased production, prices rise. The price of wheat is not therefore based entirely on supply and demand, but also on the willingness of producers to produce and on the willingness of consumers to consume wheat.

There has been a great deal of talk the past few months regarding a just and fair price for wheat; of course there is a difference of opinion.

Now it seems that people can be divided into at least two groups: (1) those who are satisfied, and (2) those who are dissatisfied. Group No. 1 is satisfied with a price of $2.20 per bushel for wheat at the primary markets, while group No. 2 maintain that it is absolutely impossible to produce wheat at $2.20 per bushel and make any profit. If this difference of opinion is justified when based on the cost of production, then both groups are sincere and should receive equal attention, but if the desire of group 2, is merely for abnormal profits they should be classed as profiters. It is really not difficult to determine the actual cost of producing one acre, or one bushel of wheat, in any given locality. Either of two general methods may be used. The first, and undoubtedly the best method, is based on the number of man and horse hours used in the production of one acre of wheat plus expenses other than labor. The second method is based on the cost of producing an acre of wheat when all work is done at prevailing prices by hired labor.

When the cost of production is based on the hour unit, it is a simple matter to change the number of hours or change the price per hour, for different sections. Then again it is very easy for people to check up on the cost account and satisfy themselves as to its accuracy.

The figures used in the following tables are based on the knowledge that: (1) one man with 5 good horses on a 2-bottom plow can plow 4 acres in 8 hours; (2) one man with 4 horses can double disk 7 acres in 8 hours; (3) one man with 4 good horses can harrow 25 acres in 8 hours; (4) one man with 4 good horses can seed 15 acres in 9 hours; (5) five and one half men with 12 horses can head (header) and stack 30 acres in 9 hours; (6) ten men and 4 horses can thresh 1,000 bushels in 10 hours; (7) one man with a team can market 120 bushels in 6 hours—length of haul 6 miles; and (8) land is valued at $35 per acre and an interest rate of 6 per cent is charged.

In Table I is shown the cost of producing an acre of wheat before the war when wages were considerably lower than they are at present—March 1, 1918. In those "good old days" men were paid 25 and horses 9 2-5 cents per hour. Last fall (1917) when crops were planted, the common wages in central Utah was for man 37½ and for horse 12½ cents, per hour, an increase of 30 per cent above the previous year.

We find in Table I that is required 8.71 man hours, and 24.65 horse hours, to produce 1 acre of wheat, and this labor cost plus other expenses made a total on fallow land of $11.28 per acre. An average yield of 20 bushels per acre on fallow land is considered high.

Now in figuring the average price for any crop, an average of at least 10 years should be used. For the 10-year period (1906-1915) the average price of wheat on December 1 in Utah was 79 cents per bushel. Therefore, the average value of a 20 bushel wheat crop would be $15.80 per acre. Fifteen dollars and eighty cents ($15.80) minus $11.28, the cost of production, gives a profit of $4.52 cents

(Continued on page 14)

The Patriotic Potato "Over The Top"

Lucile Lee, Home Demonstrator.

You need a jar, don't you? You've worn that food rut down so far that it looks like a trench. Don't you hear your captain's command? The Food Administration has issued a sharp order —— —— "Over the top—— of that food rut!"

Let the potato do his bit now to help us out of the rut. We have lots of potatoes, why not use them? Eat potatoes baked, boiled, riced, mashed, warmed over, creamed, in souffles, in casseroles, with fish, as a garnish, in salads and in soups. Use them in making pan cakes, bread, rolls and biscuits. Use them to take the place of bread. Never waste them. Their starch and mineral content is valuable.

What is better than good baked potatoes? Wash them, bake them, eat them hot, skins and all with salt —— but one teaspoon of butter is enough for any potato.

Remember these are war times.

Potatoes on the Half Shell.

Wash and bake potatoes. Cut in half lengthwise and scoup out the potato. Mash well adding 1 t. butter, 3 t. milk, ¼ t. salt and a little pepper for each potato. Beat it well and refill skins. Brown in hot oven.

Potato and Meat Cakes.

2 c. leftover mashed potatoes, ½ c. chopped meat, onion juice, salt and pepper to taste.

Mix all together and make into small cakes. Bake until brown in oven or fry in a little fat.

Have you heard of Potato Pie Crust? Here it is—make it, eat it and you'll like it. Line a baking pan with mashed potatoes, packed in real firm. Fill with chopped boiled or baked meat and vegetables seasoned to taste. Add leftover gravy or liquid the meat cooked in. Put a layer of mashed potatoes for the top crust and bake until hot and brown.

Potato Croutons.

To serve with soups.

To 1 c. hot mashed potato, add 1 egg yolk and beat well together. Spread ½ inch thick on a flat oiled platter. When cool cut in 2 inch squares, then each square diagonally across. When ready to use, brush over the top with milk and brown lightly in oven.

Scalloped Potatoes.

Peel and slice potatoes. Put them in layers in a baking dish with a little flour, salt and pepper between. When the dish is almost full of potatoes, add enough milk to cover potatoes.

Bake in moderate oven until potatoes are well done and brown.

Cheese may be used if desired by grating a little between layers.

Cream of Potato Soup.

To 2 c. of scalded milk, add 1 c. mashed potatoes, ¼ t. salt, a little pepper and 1 t. butter. Mix well and serve with a sprinkle of chopped parsley.

Celery salt may be used as seasoning.

Potato Bread.

1 c. scalded milk, 2 t. salt, 2 c. mashed potatoes, 1 c. "live" yeast, 4½ to 5 c. flour.

Make batter of scalded milk, salt and potato. When cool add yeast and a little flour. Beat well and let rise. Add remaining flour and knead thoroughly into a stiff dough. Let rise, make into loaves and when double in bulk bake 50 minutes.

A good bread is made using 1-3 mashed potatoes, 1-3 graham flour and 1-3 white flour.

And for the puddings made from mashed potatoes? Well take some of the cold mashed potatoes left over from lunch and try this recipe, if you don't believe there are such things as potato puddings————and good ones too!

Raisin Drift.

(From U. S. Recipe Box)

5 small potatoes (mashed), 4 tb. oleomargarine, 2 eggs, 1 c. milk, ¼ t. salt, ½ lemon (juice and rind), 1 tb. corn syrup, ½ c. raisins.

To the mashed potato, add milk, eggs, syrup, lemon juice and peel (grated). Add fat, salt and raisins and bake in greased pan 1 hour.

Potato Cakes.

Potatoes are good in cake. They keep the cake from drying out quickly. Mash the potatoes and beat up with milk until very light. You can use your usual cake recipe, substituting 1 c. mashed potatoes for ½ c. milk and ½ c. flour.

Idaho to Increase Sugar Beet Acreage

Sugar is seriously needed by our Government. Idaho has been asked to increase its sugar production. It must be done. The indications are that sufficient labor is available, supplemented with help from the outside which has already been arranged for, to take care of the beet crop. Agitators from within and from without the state, whose activities are hindering the planting and care of the increased sugar beet acreage, **as indicated for Idaho,** will be branded as Pro-German and will be dealt with accordingly. The activities of the Pro-German are seen in **unduly** agitating the so-called labor shortage on the farms, particularly with reference to the beet fields. The sugar factories are operating largely under Government direction.

The **chief business** of this Nation is the winning of the war,—everything else must be secondary. Every citizen, young and old, must do his or her full share, aiding in every possible way.

The Defense program has been laid out for the people of the State of Idaho, **indicating** the things that our Government expects us to do, as our commonwealth contribution. These plans have been made in conference with those in a position to reach intelligent unbased conclusions.

The Idaho State Council of Defense, the Idaho Food Administration, the Idaho State Farm Bureau, the Department of Agriculture, the Farm Market Bureau, and all Governmental agencies stand pledged to assist the people of this state to do the utmost. With the **exception** of relatively few, our people are responding splendidly.

The I. W. W. agitators are not to be tolerated.

There are other agitators equally as dangerous and harmful. Idaho's duties is plain. The State Council of Defense and the Public Officers will tolerate no further interferences.

(Signed) Dr. E. A. BRYAN, Chairman,
State Council of Defense.

(Signed) R. F. BICKNELL,
Federal Food Administrator for Idaho.

(Signed) W. W. ALLSWORTH, Pres.,
Idaho State Farm Bureau.

(Signed) HARVEY ALLRED, Director,
Farm Markets.

(Signed) L. W. FLUHARTY, Director,
Extension, University of Idaho.

DAIRYING

DAIRY CATTLE DIFFERENCES

Origin of the Several Breeds now Most Generally Known in the United States.

Five breeds of dairy cattle have attained considerable prominence in the United States—the Ayrshire Brown Swiss, Guernsey, Holstein-Friesian, and Jersey, each of which has certain distinct characteristics not found in the other breeds, but no one breed excels in all points. Each breed is considered superior to the others in certain particulars.

In selecting a breed, a dairyman should take local conditions and market requirements into consideration in connection with the characteristics of the various breeds. He should give weight to the fact that a breed is already established in his community. The predominance of a certain breed in a section offers many advantages. For instance, a market is established, surplus stock may be disposed of to better advantage, co-operative advertising may be used, and bulls may be bought co-operatively or exchanged readily among breeders. Personal preference for a certain breed should not be allowed to cause the selection of a breed unsuited to local conditions.

Origin of Ayrshires.

The Ayrshire breed originated in the County of Ayr in southwestern Scotland and has only been sufficiently developed to be established as a type within the last hundred years. This breed is not well known in many sections of the United States—New England, New York, and Pennsylvania probably containing the largest number of its representatives. There is a small distribution in the Middle Atlantic States and the Pacific Northwest.

The color of this breed varies from a medium red to a very dark mahogany brown and white. The cattle have long horns which turn outward, then forward and upward. Ayrshires are characterized by quick, brisk actions. They have a highly nervous disposition and a pronounced ability as "rustlers"—the obtaining of a livelihood on scant pastures. Cows of this breed average 1,000 pounds in weight and bulls average about 1,600.

Ayrshire milk has comparatively little color and has small fat globules, because of which the milk stands shipping well without churning. The percentage of butterfat is medium.

Brown Swiss Breed.

The Brown Swiss breed, which does not have a widespread distribution in the United States, originated in the Canton of Schwyz, in Switzerland, and is found principally in New Yark and Wisconsin.

The cattle vary in color from a light-gray mouse color or brownish-dun to dark brown. They are mild and docile and are excellent grazers, especially on rough land. Cows average about 1,250 pounds in weight and bulls from 1,500 to 2,500 pounds.

This breed ranks well in milk production, with a moderate percentage of fat.

Guernsey Characteristics.

The Guernsey breed developed on the Channel Islands of Guernsey and Alderney, although probably the parent stock came from Normandy, France. This breed has maintained a steady growth in numbers and popularity in the country, and its largest numbers are found in the Eastern and Middle Western States.

The characteristic colors of Guernseys are some shade of fawn and white. Cows average about 1,050 pounds and bulls about 1,600 pounds in weight. Guernsey milk is noted for its exertemely yellow color and high percentage of butterfat.

Holstein Cattle.

The Holstein-Friesian, commonly known as the Holstein breed, originated in the northern part of Holland, where it has been bred for centuries. Holsteins have grown greatly in numbers and popularity in recent years in this country and are most numerous in the United States in the Middle Atlantic, Middle Western and Pacific sections.

Holstein cattle are of black and white color. They are docile and even tempered, not good "rustlers," and do best when plenty of feed is available. Holstein cows average about 1,250 pounds and bulls 1,800 pounds in weight. The average of milk production is high, but the percentage of butterfat is comparatively low.

Features of Jerseys.

Jersey cattle, the most numerous breed in the United States, originated in the Island of Jersey. Jerseys and Guernseys probably had the same foundation stock but have been developed toward different ideals so that the breeds now differ in a number of particulars.

Jerseys vary considerably in color. Shades of fawn, squirrel gray, mouse color and very dark brown are common. Jerseys have a highly organized nervous system and are usually somewhat excitable, responding quickly to good treatment and good feed. Cows average about 900 pounds and bulls 1,500 pounds in weight. The Jersey cow gives rich, yellow-colored milk and is an excellent butterfat producer.

MEASURING DAIRY EFFICIENCY

The following kind of question constantly arises in practical dairy work: Herd X is made up of cows of various ages from 2 to 14 years, the majority of the cows being fully matured (six years or over). These cows last freshened at various times. The average production of the herd per cow in the last year was 7,500 pounds of milk. Herd Y is also made up of cows of various ages, but most of them are young, i. e., under full maturity. They freshened at various times and gave for the year an average flow of 6,000 pounds per cow. Is herd X a better producing herd than herd Y., taking age of cows, average stage of lactation, etc., into account?

Until lately there has been no definite scientific method of dealing with this problem. The need of something of the sort has been very urgent. Recently the problem has been studied in the biological laboratory of the Maine Agricultural Experiment Station and a solution worked out. This has been published in circular 519 of that station, entitled "Report of Progress in Animal Husbandry Investigations in 1915."

The problem was approached in the following way: On the average a cow may be regarded as working at her maximum efficiency when she is fully mature in age, but not too old, and on the other hand, at the beginning of a lactation period, say during the first month. Suppose this maximum efficiency be designated at 100 per cent. Then the cow's efficiency in performance at any other age or stage of lactation will be represented by some percentage below 100. Given the proper data, and by the use of appropriate mathematical methods, it is possible to construct a table which will give these efficiency percentages at various ages and months of lactation. Such a table has been prepared.

In order to show how the scheme works out in practice we may give the results of a comparison between two herds of Holstein cattle in Maine, comparing their efficiency of operation in the first week of October, 1915. Herd A included 19 cows and heifers; herd B a total of 20. In herd A three cows were dry and in herd B four cows. In herd A there were 11 cows milking and 5 heifers not yet freshened. In herd B there were 14 cows milking and 2 heifers not yet freshened. The average percentage of efficiency as derived from the dairy efficiency table was in the case of herd A 38.4 per cent, and in the case of herd B 49.6 per cent.

The total number of pounds of milk produced on the day when the comparison was made was 260 pounds for herd A and 290 pounds for herd B. The average production per cow milking was in the case of herd A, 23.6 pounds, and in the case herd B. 20.7 pounds. Putting both herds on a basis of 100 per cent efficiency of operation for purposes of comparison, the average pro-

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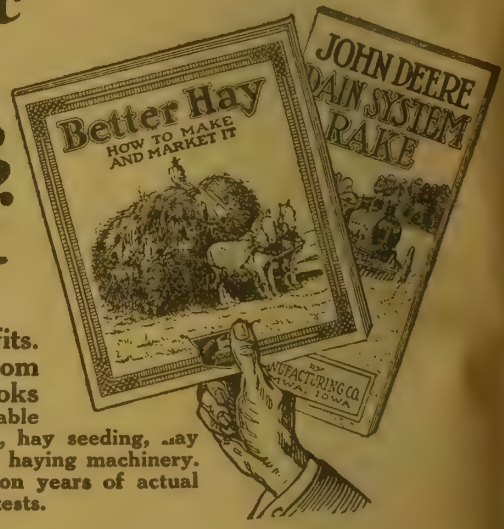

Increase your hay land profits. Get more and better hay from the same land. These books tell you how. They contain valuable information on varieties of hay, hay seeding, hay culture, hay making and modern haying machinery. Authoritative information based on years of actual field experience and exhaustive tests. They tell all about the

JOHN DEERE
DAIN SYSTEM
of Air Curing Hay

The system that is being practiced profitably by thousands of hay growers. Hay made by this system brings better prices. There is often a difference of from $6.00 to $10.00 per ton between choice and ordinary hay. Hay made the Dain way keeps better, is more palatable, more digestible and has greater feeding value.

This system consists of following the mower closely with a Dain System Rake, handling the hay while the leaves are still active and placing it on clean, dried-out stubble. The hay is delivered in medium sized windrows with the bulk of the leaves on the inside and the majority of stems on the outside.

The loose windrows allow for free circulation of air. The hay retains its color and nutrition.

The Dain System Rake is easy to operate. You put the machine in and out of gear, raise and lower the raking head, change the angle of the teeth with levers accessible from the seat. Unusual capacity is provided. The inclined frame grows higher where the windrow becomes larger—an exclusive feature. Many other splendid features of this rake are illustrated and described in the free books.

To get these books state the implements in which you are interested and ask for free package DS-442

JOHN DEERE, Moline, Ill.

duction per cow was 48.2 pounds in the case of herd A and 32.5 in the case of herd B.

From the above figures it is possible to make precise and definite comparisons between these two herds. We note, in the first place, that herd B was operating with more than 10 per cent greater efficiency at the time basis of efficiency (100 per cent), however, it is plain that the cows in herd A are much better cows than those in herd B, the average production per cow on the same efficiency of operation basis being about 16 pounds per day higher in the former than in the latter. This is the fact. Herd A is one of the best herds of pure bred Holstein-Friesian cattle in the state, nearly every cow having an A. R. O. record; herd B is only a fair average herd.

This dairy efficiency table has many uses besides that of herd comparison here illustrated. It may be used for the comparison of individual cows. It forms a much more scientifically accurate basis for the age correction of advanced registry records than do the rules of entry to advanced registry of any association in this country.

The data on which the above statements are based are derived from the co-operative cattle breeding records which the station is obtaining from leading cattle breeders and dairymen of the state. More co-operators in this work are earnestly desired.—Charles D. Woods, Maine Experiment tSation.

MUD!

—It gets in your ditches—then grass grows and refuse piles up—and then your ditch is hard to clean with plow and shovel. The job is easy with

Cut shows Model 20, made in 2, 4, 6 horse and tractor sizes. Makes new ditches, cleans old ones, to 4 ft. deep.

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Only $2 DOWN ONE YEAR TO PAY

$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 3 shown here. Earns its own cost and more by what it saves in cream. Postal brings Free catalog-folder and "direct-from-factory" offer. Buy from the manufacturer and save money. 125,000 now in use

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"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

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Tells how to cut living costs through home gardens. Why our Pure Seed grows the heaviest crops—the finest flowers. A beautiful 112 page book to others. Describes new Dwarf Sweet Corn, vegetables and flowers. Profusely illustrated; beautiful home grounds, flower and vegetable gardens, spraying, shrubbery, orchards, lawns. Valuable information on garden and flower culture. Delightful story growers love! An orchard or a beautiful farm or your little garden from this valuable book.

A postal gets it.

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THE VALUE OF SKIM-MILK

There are many places in which skim-milk is not used as completely as it might be. On farms there is often more than can be profitably fed to calves or pigs. In creameries much of it is made into cottage cheese, but even then the whey, which is really rich in good materials, goes to waste.

Many people do not realize how nutritious skim-milk is. They imagine that because it so generally has little or no commercial value it is hardly fit for human food. As a food it is not so valuable as whole-milk, and cannot take the place of the latter in the diet of children. Nevertheless, skim-milk can be used to great advantage in combination with other food materials, especially in cooking, and is altogether too valuable to be wasted.

A quart of whole-milk weighs 34⅛ ounces, or a little more than two pounds, nearly 30 ounces of which is water. The remaining solid matter contains very useful food materials. Slightly more than 1 ounce is protein, a very important muscle-builder, and one of the most expensive of the substances needed by the body. About one and one-third ounces consist of butterfat, and one and two-thirds ounces of milk sugar. These two materials are used by the body to provide it with energy, much the same as fuel is used to produce steam and power in the engine. The quart of milk also contains about one-quarter of an ounce of mineral matter, small quantities of which are very necessary for the growth and general upkeep of the body.

As the fat is separated to form the cream some of the protein, milk sugar and mineral matter go with it, but by no means all; the protein remains; therefore a quart of separator-skimmed milk provides slightly more of this indispensable and costly material than does a quart of whole-milk. It contains in all about one and one-fifth ounces of protein, one and one-fourth ounces of milk sugar, about one-fourth of an ounce of mineral matter and a little fat, the last named depending, of course, upon the completeness of the separation. This means that, quart for quart, it would furnish the body with slightly more protein and milk sugar than whole-milk does, and practically the same quantity of mineral matter, though far less fat. In other words, as a tissue-builder it is equal to whole-milk, and as an energy yielder not nearly so good. Since, as a rule, the tissue-building materials are contained in the more expensive foods (meats, eggs, etc.), and the energy-yielding materials can be largely provided by cheaper foods ,bread and other- cereal foods, fats, potatoes, etc.), it seems doubly wasteful not to use skim-milk.

Those who buy milk seldom have much skim-milk to use unless they follow the custom of skimming their own cream. That there is economy in so doing is shown by the following: A quart of whole-milk usually sells for the same price as a half-pint of cream, which contains about one-half ounce of protein, one and one-half ounces of fat, not quite one-third ounce of milk sugar, and a very little mineral substances. If this is compared with a quart of whole-milk, which very commonly can be purchased for the same sum, it will be seen that the purchaser in buying a half-pint of cream instead of a quart of milk sacrifices nearly an ounce of protein, one and one-third ounces of sugar and one-fifth ounce of mineral matter. He gets, of course, a trifle more fat—about one-fifth ounce, or a level teaspoonful—but this is small in comparison with what is sacrificed. Some people, therefore, buy whole-milk instead of cream in order to have for faimly use the nourishment contained in the milk after it has been skimmed. Home-skimmed milk is, of course, richer in fat than that which has been skimmed by a separator, but it can be used in the same way.—Dr. Francis X. Mahoney.

METHODS FOR SAVING MANURE VALUE

Dr. W. E. Taylor.

There are several ways in which losses can be reduced to a minimum. Probably the best plan is to spread the manure on the ground soon after it is made. When this is done, there is pratcically no loss through evaporation, and the essence sinks into the soil where it belongs and will do the most good. I realize, however, that it is not always convenient to spread manure as soon as it is made; therefore, it should be protected as it accumulates. This can be done best by building a concrete pit in or adjacent to the barnyard or barn. For the average farm, a pit should be made seven or eight feet wide, twelve to eighteen feet long, and five or six feet deep. The floor should be reinforced with woven wire fencing to prevent cracking. It is not necessary to make the side walls more than four and one-half or five inches thick. A roof should be provided, although that is not absolutely necessary if means are taken to prevent too much fermentation in the event of rains. The loss of nitrogen through fermentation can be prevented by sprinkling from time to time a quantity of raw rock phosphate or gypsum on the pile. Either of these will prevent the ammonia from escaping. If phosphate rock is used, the action of the manure makes it an available plant food.

A manure carrier can be constructed to run from the feeding barn to the concrete pit at little expense. Some farmers construct a lean-to to the barn, into which manure is thrown directly from the stanchions or stalls. A concrete floor in a branyard saves all liquid manure, providing sufficient litter is thrown on the floor to absorb it.

Some extensive feeders permit the manure to accumulate in the shed, using bedding quite freely, and as it accumulates, raise the feeding racks. Any of these plans are fine, for they all serve the same purpose.

It is not a good plan to put manure in piles in a field and later spread it, for under the pile there will be too much fertility and that portion spread is usually leached, making it weak, and causing an uneven growth of the crop. The most economical way is to use a manure spreader, making an even distribution. Manure, or even straw, spread on winter wheat, rye or meadow, late in the fall, winter or early spring, will make a wonderful increase in the yield. The best time is early in the winter, or just after the ground freezes.

SMALL POTATOES

All of us have at times eaten good home-made bread with a liberal portion of mashed potatoes in its makings. There are now millions of bushels of small potatoes in the United States not specially high priced. There is need of war bread substitutes. Let's try some small potatoes in our bread.

Cutter's

Germ Free

Blackleg Filtrate

and

Blackleg Tissue Aggressin

The New, Safe and Efficient Agents for Protecting Calves from Blackleg.

Cutter's Blackleg Filtrate positively protects against Blackleg.

Cutter's Blackleg Aggressin, made directly from animal tissues, **affords even greater protection** and is recommended for Pure Breds.

Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals since **both are germ free.**

Both have given 100% protection wherever used.

Prices—
10 dose pkge. Filtrate....$2.00
50 " " " 8.00
100 " " " 15.00
10 dose pkge. Tissue Aggressin 4.00

N. B.—Cutter's Filtrate (a "cultural product" aggressin) is full 5 c.c. to the dose, as we believe that smaller doses, whether concentrated or not, afford less protection.

Write for booklet telling what germ free vaccines are and wherein **"cultural product" Aggressins differ from Cutter's Aggressin** made from animal tissues.

While these new "germ free vaccines" have **advantages** that should be known to every stockraiser, we see no reason for a quick change to them by stockraisers who have had satisfactory results from the use of

CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

Year in and Year Out they have given better satisfaction than any other vaccine made, and as far as price and convenience of administration are concerned, they have all the advantage.

Prices:
10 dose pkge. Single pills $1.00
50 " " " " 4.00
10 dose pkge. Double Pills 1.50
50 " " " " 6.00
Cutter's Pill Injector.... 1.50

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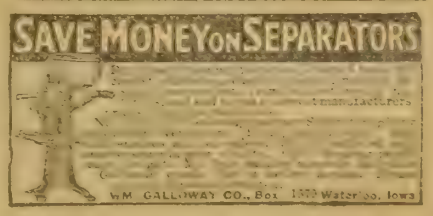

WM. GALLOWAY CO., Box 1313 Waterloo, Iowa

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Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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Published every Saturday by the
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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be sent upon application.

Have you planted a few tomatoes, cabbage, or other seeds that need an early start and transplanting later in the season?

There never was a time when a good dairy cow was more profitable to keep than right now. She is one of the best producers of food on the farm.

If you plan to build a silo this year now is the time to secure your seed corn. Consult the County Agent for the best kind to plant in your locality.

Plan your farm work this year so that you can start with a few sheep. They are money makers, at least this is the experience of those who have tried it out.

You make a serious mistake when you do not treat your seed grain for smut. The expense is very small and the increased yield pays for the costs of treatment many times over.

When the spring clean up comes, do not burn the leaves, but use them as a fertilizer. They are worth the time taken to conserve them, the soil needs any form of available organic matter.

A little paint well chosen at this time of the year is a good way of showing your belief in conservation. Paint will protect the wooded parts of your machinery and does not need an expert to apply it. Follow the rules that usually go with all paint and you can not go very far wrong. Paint is a great conserver. Now is the time to use it.

MICE AND RODENTS

Conservation is just as important as production and where we have such an enormous waste as the mice and rodents make some definite means should be adopted to destroy these little pests.

Every farmer should free his own place of them but this is not enough a concerted effort should be made to make it a community proposition in the destruction of mice and rodents. It would seem that if the people understood the great loss of food products destroyed by mice, rats and rodents a strong fight would be waged against them.

In this issue of our paper we give our readers an article explaining how to control and destroy these pests.

ROTATION OF CROPS

Some farmers have learned the benefits that follow a careful planned rotation of crops. Experiments have shown that rotation of grain crops with legumes has produced marked increases in the yields. The proper rotation must be studied out by every farmer to fit his farm, his soil, and local conditions.

Experience has proven that a farm rotation well planned is one of the first steps to profitable farming.

DANGEROUS ADVERTISEMENTS.

A first class paper will protect its readers against dangerous advertisements, those who cannot make good, those get rich quick schemes with no responsibility.

Some of these promoters seem to think the farmer is "easy mark" and work all kinds of stunts to sell him stock in their promotion companies.

The Utah Farmer is one paper that has refused such advertisements, and judging from the looks of the other papers in this state it is about the only one that has turned down these stock selling advertisements.

Right minded publishers should exercise the same censorship over their advertisements that they do over their reading matter. If they did this many of these dangerous advertisements would not appear in their papers. They are dangerous because they cheat the people out of hard earned money for which they receive nothing in return.

BIGGER AND BETTER GARDENS

Last year our war gardens were quite a success, although many mistakes were made a wonderful lot of food was produced. We must do even better this year. Plan and prepare now. Buy your garden tools and seed now, do not wait until the day you want to use them. Double cropping can be done, follow your radish, peas and early vegetables, with beans, turnips and cabbage. Plant only the best varieties—can or dry the surplus.

Do not be led off by some enthusist and plant wheat in your back yards but plant vegetables you can eat, dry or can.

Many new gardners can or should profit by last years experience and have a bigger and better garden. War gardens are doing wonders for Germany, we should not let them beat us at gardening any more than we expect them to win on the western front.

Do a little planning and thinking, profit by last years experience and have a better war garden this year.

THE IMPORTANCE OF MANURE

As a means of increasing our food supply barn yard manure is a very important factor. A partial survey, however, shows that some people do not realize this or they would haul out the manure and increase their yield and make more money from farming.

There are many people who keep a cow that do not farm they have a supply of manure that should be used.

There are some farmers who do not make use of the manure that they have and under present conditions, when every acre should produce its utmost, they should either haul it out or give it to some one who would use it.

The City health societies know that a pile of manure in summer time is a breeding place for flies. For the health of the people they should work with the local farm bureaus and see that every ton of manure possible is put on the farm land, which would help increase production and do away with breeding places for flies. The manure should be hauled out within the next week if possible.

For your own good and an increased supply of food put all the manure possible on your land this spring.

BETTER BREEDING OF LIVE STOCK.

The higher price of feed and labor costs in caring for live stock emphasizes the importance of culling out our inferior cows and securing if possible better breeding stock, this is just as true with the dairyman as with the farmer who is making a specialty of beef cattle.

The use of a good sire is the best way of solving the problem. Careful breeding of pure bred livestock is another way. Crossing breeds will not help as crossing "Breaks the chain of inheritance," and that crosses do not transmit definite characteristics.

It costs very little more to keep a cow that produces 300 pounds of butter fat than one that produces only 150 pounds. There is considerable difference in the net returns which should bring home the necessity of better breeding stock in order to increase our earning capacity with livestock.

VALUE OF A CASH CROP

To know that you can turn your farm products into cash at harvest time, without any worry as to what the market will be is a big thing to most farmers.

Farming at best is a big gamble for when the farmer plants he takes all kind of chances as to what he will be able to sell his products for. Sugar beets, tomatoes and others are known as a cash crop. Wheat is now practically in the same class because the government makes a definate price.

You sign a contract for a certain price, you know what it will be at harvest time, you take no chance, only in the amount that can be produced on each acre. You can and should plan better when you know what the market price will be.

Bankers seem to appreciate the value of a cash crop for when a farmer has signed up for a number of acres of sugar beets, he can borrow money on that contract.

How much better it is to have a definate price than take the chance fo selling at an extreme high or riduculous low price.

Some few farmers do not mind taking a chance but when a crop like beets or tomatoes have become so well known there is a big advantage in having a cash market for all you can produce at a definite price.

THE NEED OF MORE SUGAR BEETS.

The Federal Food Administration is looking to the sugar beet producing areas for an increased acreage for sugar beets this year. Many times during the winter they have emphasized the need of more sugar and that it can only come from beet growing centers where factories are established.

With the increased price of sugar beets and a sharing of profits, should the price of sugar advance, the farmer can afford to plant sugar beets this year. From a patriotic point of view it is our moral duty to answer the pleading of our national government with an increased supply of sugar.

The government has control of the factories and will limit their profits.

The government has promised to help the farmers with the labor situation. Our State officials are organizing sixteen to eighteen thousand girls and boys to help with the labor problem. If properly supervised the labor situation in this state has been solved.

Within the next few days the farmer must decide just what he is going to plant this year. Unless there are a great many more acres signed up our total production will fall short of last year. Read the articles by Pres. E. G. Peterson and Dr. F. S. Harris in this issue and you will be impressed with their sincere and earnest appeal for an increased supply of sugar.

The article signed by Idaho Officials in this issue shows what the State of Idaho is doing to increase production.

Utah has answered every appeal of the Government with more than she has been asked for. Will we do it with an increased sugar beet yield this year?

Utah's Experimenters In Agriculture

William Peterson.

William Peterson, geologist for the Utah Experiment Station, is also State geologist for Utah. As State Geologist he will be an important factor in setting values on the mineral lands of Utah which have not up to the present been taxed in proportion to their value. When Governor Bamberger chose Professor Peterson, he knew what he wanted and also knew his man. But it is at the geologist of the Experiment Station that we are now to look.

For this position Professor William Peterson is well trained. He is now a middle-aged man—just in his prime. His boyhood experience consisted of farming, ranching and logging in Bear Lake County, Idaho. He studied at the Utah Agricultural College, taking a degree in commerce in 1899. The school grew rapidly and young Peterson became interested in general science and geology. Accordingly he completed courses in that field and took a degree in 1908. Previous to this he had attended the University of Chicago three summers and one winter. In the spring of 1908 he began working in western Wyoming on detail geological work. He worked in coal areas around Rock Springs and Kemmerer and in the Adaville formation. This work was for private interests but was preceded by summer work for the United States Geological Survey. In the summer of 1904 he had studied phosphates, and in 1905 had helped in a survey of Pleistocene geology of the western mountain section. He now holds an unpublished paper on the Bear River Mountains. The Geological Survey is just now completing the mapping necessary to show his work clearly.

In connection with Dr. Robert Stewart, he has studied the origin of alkali in Utah and Western Colorado. Many perosns believed the alkali in this section to have been derived from other sources than the native rock. Stewart and Peterson established the fact that all our alkali is derived from rocks of particular formations. This work was so well done that to know the rock of a section now enables the prediction of the nature and quantity of alkali likely to occur. Two Utah Station bulletins, two treatises in the Journal of Agricultural Research, and one in the Journal of the American Society of Agronomy are authoritative as regards the origin of alkali. Considerable knowledge of arid soils was accumulated as a by-product of these alkali studies.

Ground water as a possible source of irrigation water has also received attention. This problem is peculiarly difficult because of its very nature. Professor Peterson has tabulated all reconnaissance work and has begun to study Millard and Uintah counties. When completed for Utah, this study should help much in locating artesian wells,—a subject about which there is just now considerable uncertainty. As a part of his ground water studies, Professor Peterson has made clear that most of our streams lose considerable water by seepage into their gravelfilled beds. One stream, at least, was found to lose as much as 100 second feet—enough to irrigate several thousand acres. Development work toward the conservation of these waters is now in progress in several sections. He recommends also that artesian wells be stopped during the winter in order to store up the ground waters for use on the growing crops. The stoppage of these two leaks should materially increase our available supply. He found too, that much range land can be more completely utilized by establishing water troughs for animals in sections hitherto devoid of stock-watering places. Who can predict the scope of such work?

In spite of his significant research work in geology, Professor Peterson is best known as teacher of geology, mineralogy, and road construction at the Utah Agricultural College. He is interesting in the classroom and knows every spot in Utah, and the important ones in adjacent states.

In this new work of State geologist he expects to study mineral, coal, and oil deposits of the State. It is worthy of note that he was a member of the State Road commission from which he was removed to take up the now more important work of State geologist.

Undoubtedly many persons could get along better together if they had kept apart in the first place.

We can remember when the coal dealers used to come around and plead with us to lay in a winter's supply.

Spring poets are hereby warned not to overlook the possibilities of an appeal to patriotism.

P&O

No. 4½

Disc Gang Plow

Built along simple lines, light in draft, efficient and durable. Made in 2 or 3 furrow, with 26 in. discs, though 24 in. discs will be furnished if preferred. The 2 furrow plow can be equipped with a Third Disc Attachment, or the 3 can be quickly converted to a 2. 4 horse evener included.

"It's the way we build them."

Levers give easy control of plow from seat, and operator is assisted in handling them by strong balance springs. Strong heavy beams, rigidly braced to withstand the strain to which a disc plow is subjected. Hand control. Hitch is adjustable for tandem or abreast eveners. Discs are set in chilled bearings supplied with hard oil by compression grease cups. Discs can be set to cut 10 or 11 inch furrows. Angle of discs can be changed to meet varying conditions of plowing, an especially desirable feature in very hard or gumbo land. Extra adjustment for clearance in trashy ground.

Scrapers are large, of an improved pattern, and assist in throwing the soil over; they conform to the concavity of the discs, and are provided with ball and socket joint for close adjustment. Wheels are cast in one piece, and equipped with removable dust proof boxes with hard oil screw caps. Linch pins and collars, in addition to perfect sand bands, hold wheels in place. Loose bands behind discs prevent trash from winding around disc boxes.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

Beet Prize Winners

List of Awards to successful Beet Prize Contestants offered by The Amalgamated Sugar Company to its Cache Valley beet growers for the year 1917.

	Acres	% Stand	% Clean-liness	% Size & Shape	% Ton-nage	Total %	Prize
District No. 1.							
Abe Hansen, College	20	34	18	19	10¼	81¼	$100.00
Erastus Olsen, College	10	38	19½	19	10½	87	75.00
Jos. Nielsen, Millville	5	34	18	20	18½	90½	60.00
Jno. Bankhead, Hyrum	3	26	18	19	17	90	40.00
Levi Cooper, Wellsville	1	29	19½	19½	19¼	97¼	25.00
District No. 2.							
W. C. Scrowther, Smithfield	20	35	19½	17½	16	88	$100.00
J. M. Johnson, Smithfield	10	39	19½	16	16	90½	75.00
Richard Roskelley, Smithfield	5	26	19½	17	14	86½	60.00
Jas. McNiel, Logan	3	38	18	17½	17½	91	40.00
Theo Chambers, Smithfield	1	38	19	18½	19	94½	25.00
District No. 3.							
O. A. Hogan, Lewiston	20	32½	18½	17	15	83	$100.00
Fred Taggart, Lewiston	10	33	18	19	18½	88½	75.00
W. A. Hubble, Lewiston	5	38	19	18	18½	93½	60.00
J. H. Stocks, Lewiston	3	33	17	17	14	81	40.00
Eldred Bergeson, Lewiston	1	28	15	17	15½	75½	25.00
District No. 4.							
J. G. Wanner, Whitney	20	39	19½	20	15½	94	$100.00
Webb Bros., Richmond	10	37	18	19	16	90	75.00
O. O. Crockett, Preston	5	35	19½	19	13½	87	60.00
K. T. Yoshioka, Nashville	3	24	9	15	10	58	40.00
W. L. Wickham, Nashville	1	34	18	18	17	87	25.00
District No. 5.							
J. W. Funk, Trenton	20	33	19	17	15	84	$100.00
W. H. Tham, Alta	10	32	19½	17	18	86½	75.00
Mark Johnson, Downey	5	33	16	17	17	83	60.00
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Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this root crop to supply an essential food for both soldiers and civilians. The world is crying for sugar do your part towards supplying this demand.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

HOME

MADE WITH MASHED POTATOES

Jane Eddington.

We speak of mashed potatoes, but the thing that makes mashed potatoes what they should be is not mashing down, but beating up, whisking to a light and smooth and creamy product. The best double service utensil for this work: that is, one which is good for the breaking up of the potato which must precede the whisking, is the wire masher with a firm wooden handle.

We have no vegetable which can be made more showy than velvety, smooth potato. It is no trick at all to put it through a pastry bag with a fluted point, in roses and borders or what we will. These may then be brushed with milk or butter, and browned a bit under the boiler, and, behold, we have with our economical bit of meat or fish what looks like a pretentiously prepared dish. It is the least work for the greatest effect of almost any manipulation I know of.

There are no end of ways in which mashed potato may be used. The more cream or butter or fat substitute we add to it the more of an energy food it is, and the more egg we add the more it is like a meat.

Potato Roses.

Cream mashed potato thoroughly by beating until as smooth as possible, and fill a pastry bag with the mixture, first having inserted in the bottom of it the desired point. For general service the fluted point is best. Twist the top close and hold with the right hand, while the left hand is held under the bag near the point to guide. The forcing out should be done with the right hand entirely and the bag held in an upright position. For fancy forms like bow knots, force on to a buttered tin and brown in the oven. For borders a push and a stretch, or a little squeeze and push down and then quick tipping by raising, and purling away the point, give ornamental effects. A funnel of heavy brown paper with the tip cut off for the insertion of the point, may be used instead of the bag. It does not have to be washed as a pastry bag should be intsantly after it is used.

Potato Cones.

Beat mashed potato until light and creamy, and form into cones, using an ice cream mold if you have one. Put the cones into a buttered baking dish, brush with melted butter, and brown in a hot oven. These may also be put around meat in a large casserole and cooked with it for half an hour or so.

Potato Muffins.

It is not necessary to use eggs to make a potato muffin when enough cream has been added to make it of the requisite smoothness, since with a good beating it is as light as needs be. Butter small muffin rings or molds, fill them with more of the potato than one uses for a batter, and bake for thirty minutes in a rather hot oven. A tablespoon of grated cheese may be put in the muffin ring before adding the potato. Use with any meat gravy or even with an onion flavored white sauce, or to garnish any savory meat dish. Easier to succeed with than a dumpling, and may be used in the same way.

Potato Omelet II.

Of the many ways of using potatoes in an omeletlike dish, that in which the potato is really used to extend the egg seems the most substantial to most people. Make of any size, allowing for every egg one small cold boiled potato; grated or mashed potato may be used. Beat the yolks of the eggs well and with them a tablespoon of milk or cream to each yolk, then add the potato—cold riced potato will answer—and finally the well beaten whites just at the minute of putting the omelet into the pan. A tablespoon of fat heated to bubbling point prepares the pan. Prick with a fork like any purely egg omelet, until the egg begins to set. If this is done the omelet will puff up beautifully. Cook till well set, turn one-half over the other and serve immediately.

Potato Omelet I.

Melt a tablespoon of butter or other edible fat in a frying pan and add either hot or cold mashed potato in a thin cake, brown and fold like any omelet.

Potato Puff I.

Here is a good way to use a leftover white of egg, say after making mayonnoise dressing. Beat it stiff and add it to any moderate amount of creamy mashed potato, put whole into small buttered baking dish and bake until brown and puffy.

Potato Puff II.

Shape hot creamy mashed potato into balls the size of an egg, put on buttered tin plate, brush over with beaten egg, and brown in the oven. Serve with meat or fish balls for luncheon, preferably with a sauce.

Duchesse Potatoes

Duchesse potatoes are often prepared by using the whole raw egg instead of the yolk merely in the conventional way. Mix it with the mashed potato thoroughly, with the help of a wooden spoon. A little flour may be used on the pastry board in molding it. The mixture may be made into a large roll, flattened, cut into heart shaped pieces and other shapes, the surface criss-crossed with a knife or with a mold made for fancy cooky surfaces. Ten minutes is about enough to bake such cakes a delicate brown. One yolk of egg, half a tablespoon of butter, and the same of milk to one large potato is a proportion for rather rich cakes. The mass may simply be pressed flat and smooth and then cut into squares, cooled to stiffen, and then baked to a delicate brown in a quick oven.

Viena Potatoes.

Mold mashed potatoes into the shape of Vienna rolls about four inches long; brush with beaten egg, make a crease across the roll with the back of a heavy knife, brush with beaten egg after placing on greased and inverted tin. Brown in oven.

Potato Au Gratin.

Put fine mashed potato into deep buttered baking dish, smooth over the surface or use a knife to make it look like spokes or canals all extending out from center of top, sprinkle with cheese and grated bread crumbs, dot with bits of butter and put into an exceedingly hot oven or under the broiler to set the crust. Creamed potatoes prepared in the same fashion are much preferred by some people, especially when put into individual dishes.

Potato Stuffing.

Miss Farmer's recipe for this stuf-

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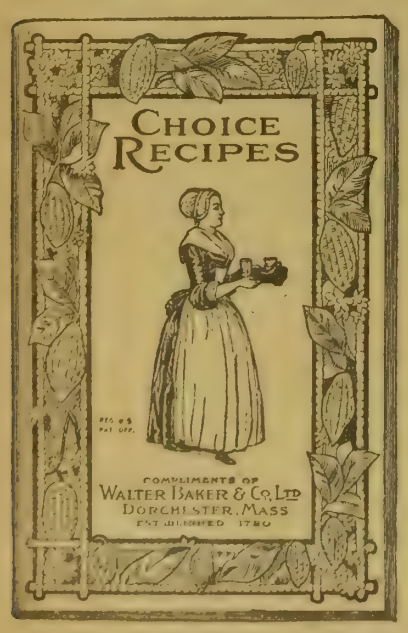

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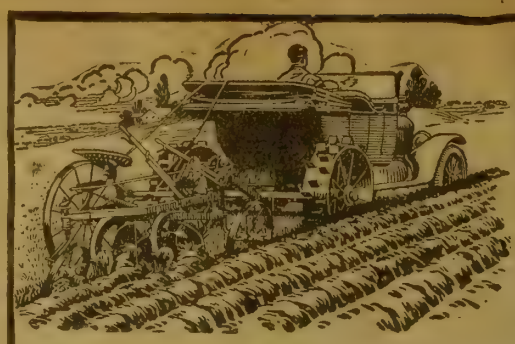

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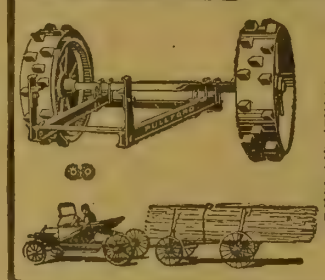

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It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

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The Miracle of the Marne

The battle of the Marne halted the rush of the Germans towards Paris. It aroused the French to superhuman bravery. They fought as if led by the spirit of the Maid of Orleans herself.

The Marne was a demonstration of the power of patriotism with its back against the wall. The same sacrifice of self, the same love of country and unity of purpose that inspired the French people must inspire us, and we must win the war.

We are sending our best manhood to fight for us. They must be armed, fed and clothed, cared for through sickness and wounds. This is the work of every individual as well as the Government.

It is the proud duty of the Bell System to coordinate its purpose and equipment to the other factors in our national industrial fabric, so that the manufacture and movement of supplies to our boys abroad be given right of way.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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fing has been much used and copied. Here it is: Two cups of hot mashed potatoes, one and one-fourth cups of bread crumbs, one-third cup of butter, one egg, one teaspoon of salt, one teaspoon of sage, one-fourth cup of finely chopped fat salt pork, one finely chopped onion. Add to the potatoes the other ingredients in the order in which they are given. I would leave out the sage and today we use butter substitutes. A little nutmeg is not noticed as such in that it improves or gives more character to the stuffing.

VICTORY BREAD

Save The Wheat.

Which day is baking day at your house? Try one of these breads next time. Each recipe will make three good sized loaves.

Handle and mould these bread doughs with greater care than white bread. If the doughs stick to the hands when kneading down, add more flour at this time.

Always keep the dough at an even warm temperature (about 75 degrees F.)

If you have a good rule for bread, use it, but in place of part of the white flour use one of these other grains—either all or part of the time.

If dry yeast is used, a sponge should be made at night with the liquid, the yeast, and a part of the white flour.

Potatoes are Plentiful—Use Them In Bread.

This bread is especially valuable because of the body-regulating substances which it contains.

Potato Yeast Bread.

1 or 2 cakes compressed yeast, 1 cup lukewarm water, 4 teaspoons salt, 3 tablespoons corn syrup, 3½ cups mashed potatoes, 7 cups flour (more or less may be needed).

Mix as follows: Soften the yeast in the liquid and then add (1) salt, (2) syrup, (3) potato, and (4) enough of the flour to make a stiff dough. Mix and knead thoroughly. Let rise 3½ hours, or until double in bulk. Knead or cut down the dough, add the remaining flour, and let rise again until double in bulk (about 1½ hours.) Shape into loaves. Let rise in pans until double in bulk. Bake 50 minutes to 1 hour.

The Horn of Plenty Brims With Corn

Every time you make three loaves of this bread instead of white bread you save more than a pound of wheat flour.

Cornmeal Yeast Bread.

1 quart water, 1 or 2 cakes compressed yeast, 3½ teaspoons salt, 3 tablespoons corn syrup, 1½ cups corn meal, 8 cups flour.

Mix as follows: Soften the yeast in ½ cup of the water (lukewarm). Heat the rest to boiling, then stir in the cornmeal. Let it boil up once. Cool, add the salt and syrup, and when lukewarm, add the softened yeast. Then add the flour to make a siff dough. Follow the directions for kneading, rising and baking, given for potato bread.

Oats Make Brawn For The Scotchman Why Not For You?

You'll find only one thing the matter with this bread—the family will want to eat too much of it.

Oatmeal Yeast Bread.

1 quart water, 1 or 2 cakes compressed yeast, 4 teaspoons salt, 3 tablespoons molasses, 3 cups rolled oats, 8 cups flour.

Mix as follows: Soften the yeast in ½ cup of the water (lukewarm.) Heat the rest to boiling, then stir in the rolled oats. Let it boil up once. Cool, add the salt and syrup and when lukewarm, add the softened yeast. Then add the flour to make a stiff dough. Follow the directions for kneading, rising and baking given for potato bread.

Rice Bread Is Always Popular.

Ask your grocer to get broken rice. It's cheaper and just as good.

Rice Bread.

1 quart water, 1 cup rice, 1 or 2 cakes compressed yeast, ½ cup lukewarm water, 4 teaspoons corn syrup, 6 cups flour.

Mix as follows: Cook the rice until soft, in the one quart of water. Cook until lukewarm, then add (1) the yeast softened in the ½ cup of lukewarm water, (2) the salt, (3) syrup, and (4) the flour. Follow directions for kneading, rising and baking given for the potato bread.

Barley Makes a Good Loaf.

If barley is available in your section of the country use this recipe occasionally. "Variety is the spice of life."

Barley Bread.

1 quart water, 1 cup pearl barley, 1 or 2 cakes compressed yeast. ½ cup lukewarm water, 5 teaspoons salt, 2 tablespoons corn syrup, 7 cups flour.

Mix as follows: Soak the barley in the 1 quart of water over night. Boil in the same water until soft, mash fine, then cool until lukewarm. Add (1) the yeast softened in the ½ cup of water, (2) the salt, (3) syrup, and (4) flour to make a siff dough. Follow the directions for kneading, rising and baking given for potato bread.

Did You Ever Hear of Bean Bread?

Here is a new bread. It saves 1 pound of wheat flour. Try it on the family.

Bean Bread.

1 quart water, 1 cup beans, 1 or 2 cakes compressed yeast, ½ cup lukewarm water, 5 teaspoons salt, 2 tablespoons molasses, 8 cups flour.

Mix as follows: Soak the beans over night. Drain off the water in which they were soaked and cook until soft in the 1 quart of water. Put through a sieve or a potato ricer, cool and when lukewarm, add (1) the yeast softened in the ½ cup of water, (2) the salt, (3) the molasses, and (4) the flour to make a siff dough. Follow direction for kneading, rising and baking given for potato bread. The beans may be simply mashed and the hulls used in the bread if desired.

Crumbs From Any Woman's Table

What do you do with your stale bread? Do you know that bread crumbs can be worked into the bread dough? Remember this recipe. It's thrifty and it's good.

Bread Crumb Bread.

1 quart lukewarm water, 1 or 2 cakes compressed yeast, 4 teaspoons salt, 2 tablespoons molasses, 4 cups fine bread crumbs, 8 cups flour.

Mix as follows: Soften the yeast in ¼ cup of water. Add to the rest of the liquid (1) the yeast mixture, (2) the salt, (3) the molasses, (4) the crumbs, and (5) flour to make a stiff dough. Follow directions for kneading, rising and baking given for potato bread.

Each of the recipes given here saves from a pound to a pound and a half of wheat.

WHY MORE SUGAR

(Continued from page 1)

times as long to bring a cargo from Java as from the United States, and since shipping is a limiting factor in the war it must be conserved.

No one can tell how long the war will last, and during the period of the war the sugar situation promises to be somewhat acute. It is therefore of the highest importance to the country to produce as large a quantity as possible of this concentrated food. The price of beets is now high enough to insure excellent returns to the good beet farmer. The government is not asking for a gift. All it asks is that the farmers do what would be a good thing for them to do anyway—raise as many beets as their conditions warrant. This, of course does not mean the upsetting of a balanced system of farming or the elimination of other crops; but it does mean the bending of every effort to accomplish the end sought. This may be done as much by improving the methods of handling the land as by increasing the acreage planted to beets. This means greater care in preparing the seed bed, more attention to thinning better cultivation, more consistent irrigation, and greater efficiency in harvesting.

Careful attention to these details will reward the farmer in money returns, and will enable him to render a patriotic servic to his country and to the cause of democracy.

Plant With These Drills

DRILL-PLANTED fields produce greater yields. Remember that at planting time this year, when every bushel added to your harvest field counts.

The use of **Empire Jr., Hoosier,** or **Kentucky Drills** means not only more grain per acre, but better prices. Drill-planting improves the quality of the grain, for when seed is properly planted, at even depth, and covered as it should be, it comes up all at the same time, grows uniformly, and ripens evenly. Such grain grades high and brings good prices.

The drill that will do the best work for you is in one of these lines. It is handled by some local dealer not far from your farm where you can see it, or you can find out all about it by writing us for drill catalogues. There are drills for planting every kind of grass or grain, with or without fertilizer, in every kind of soil.

The dealer, or the catalogue, will tell you all about feeds, furrow openers, bearings, attachments, etc. All we can tell you here is that you will find just the drill for your work in the **Empire Jr., Hoosier,** or **Kentucky** lines, and that without any trouble or expense on your part beyond the writing of a letter or post card. Why not write it now, before you forget?

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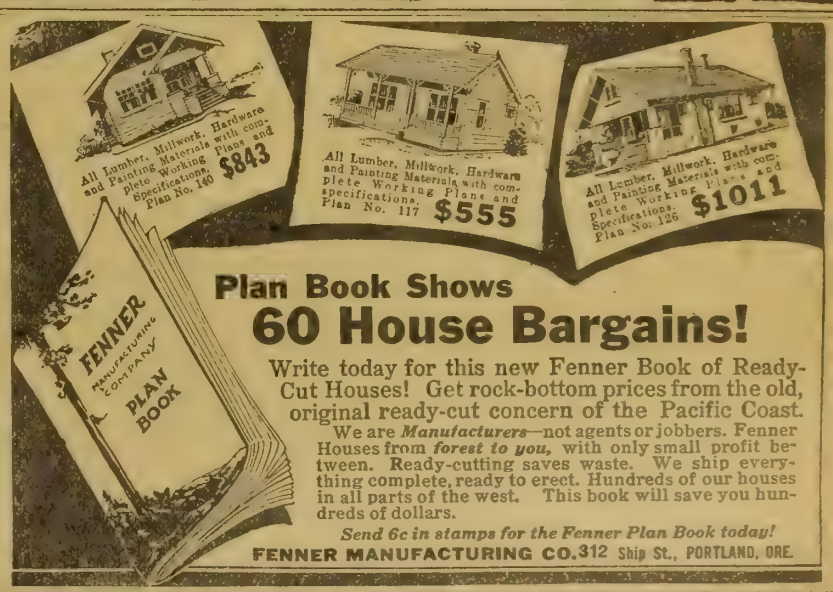

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LEARNING TO KNIT

My good wife is learning to knit, to knit,
It's solemn to sit near by,
And look, as she frets in a panicky fit,
At the blood in her loving eye.
Knit, knit, lickity split,
Bound and determined to finish her bit,
Casting and purling, disdaining to quit,
My good wife is learning to knit

My good wife is learning to knit, to knit,
Our home's in an awful mess;
I've had nothing to eat since the knitting craze hit,
And I won't have, either, I guess.
Knit, knit, doing her bit,
Nothing to eat till she comes out of it—
Was ever a fellow so pesky hard hit?
My good wife is learning to knit.

H. W. D.

LOYALTY IN LITTLE THINGS

The whole great problem of winning the war rests primarily on one thing, the loyalty and sacrifice of the American people in the matter of food. If we are selfish or even careless, we are disloyal; we are the enemy at home. Now is the hour of our testing—U. S Food Administration.

USE THE WESTERN PULVERIZER, PACKER AND MULCHER

3 MACHINES IN 1

for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firmed bed is as important for one crop as for another. The Western packer [illegible] as deep as plowed and leaves a [illegible] protect the moisture; saves [illegible] and time, labor and horse power in preparing a seed bed. It is especially adapted for harrowing grain and cultivating water melons [illegible] breaking crust on sugar beets or beans either before or after they come up [illegible]

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Salt Lake City

The Control of Rodent Pests

DIRECTIONS FOR KILLING GROUND SQUIRRELS, POCKET GOPHERS, RABBITS AND FIELD MICE.

By Charles J. Sorenson.

Rodent pests cause heavy damage to the crops of Utah. The four most destructive of these pests are ground squirrels, pocket gophers rabbits, and field mice.

The formula recommended in the destruction of these animal pests is the use of poisoned baits. A very important factor in their control is the natural enemies.

The formula recommended in the following have been, and are now being, used with excellent success in this and neighboring states.

Ground Squirrels.

Ground squirrels may be killed with poisoned grains and by fumigating their burrows with carbon bisulphide.

Poisoning with Strychnine—Coated Grains.

Formula Number 1:
Bureau Biological Survey.

This is the latest government formula for preparing poisoned oats to kill ground squirrels.

Oats (clean grain), 12 quarts.

Strychnine (powdered alkaloid), 1 ounce.

Bicarbonate of soda (baking soda), 1 ounce.

Saccharine, 1 teaspoonful.

Flour, 3 tablespoonfuls.

Directions for mixing: Mix together dry, the strychnine, baking soda, saccharine, and flour. Add a little cold water and stir to a smooth, creamy paste. Pour this over the oats and mix thoroughly to distribute the poison evenly over each kernel. Spread out and dry the grain before using. For mixing small quantities a common galvanized iron tub is convenient. For large quantities, a smooth, tight wagon-box may be used and the mixing done with a shovel.

Grain poisoned in this manner may be used during any season of the year, but the best time to use it is in early spring when the squirrels first appear after hibernating over winter.

The next two formula, recommended by the Colorado State Entomologists's Office, have been found very destructive to ground squirrels, prairie-dogs, kangaroo-rats, and similar rodents.

Formula Number 15 is used most effectively in early spring, whereas Formula Number 28 may be used successfully at any season of the year, even though the green food is abundant.

Colorado Formula Number 15

Barley, wheat or oats (clean grain), 12 quarts.

Strychnine (powdered alkaloid), 1 ounce.

Saccharine, 1 teaspoonful.

Flour, ¾ pint.

Fine salt, ½ pint.

Water, 2 pints.

Directions for mixing: Dissolve the saccharine and strychnine in the amount of water called for; add the flour and salt; mix thoroughly with an egg-beater; put over a fire and bring to a boil, or heat until the flour begins to thicken; stir constantly while heating. Pour the poisoned solution over the grain, mix thoroughly, and then spread out to dry.

Colorado Formula Number 28.

PART I

Oats (clean grain), 14 quarts.

Strychnine (powdered alkaloid), 1 ounce.

Starch, ½ pint.

Water, 1 quart.

PART II

Knox Gelatin, No. 1 plain, (1 box or 2 envelopes).

Bicarbonate of soda (baking powder), 1 ounce.

Dark brown sugar, ½ pound.

Water, 1 quart.

Directions for mixing: First, prepare Part I as follows: Dissolve the strychnine in the quart of water, add the starch and stir until it is all dissolved; put over a fire and heat until the starch begins to thicken, stirring constantly.

Pour this poisoned solution over the grain and mix thoroughly until each grain is evenly coated; then let stand for five or six hours.

Re-treat the poisoned grain with Part II as follows: Dissolve the gelatin in one pint of cold water; add one pint of boiling water; add soda and stir until it stops foaming, then add the sugar, and when it is dissolved, pour the mixture over the poisoned grain and again mix thoroughly; spread it out to dry.

Amount to Use and Where to Place the Baits.

Each quart of any of these poisoned grains is sufficient for 40 to 60 baits. The baits should be scattered (1 teaspoonful to a place) along the squirrel trails, or preferably on clean, hard surfaces near, but not inside of, the holes. When put out in this manner livestock is not endangered.

Time of Day to Put Out the Baits.

The best time of day for putting out the baits is early in the morning, as soon after daylight as possible and before sunrise. The squirrels spend the night in their burrows and come out early in the morning to feed. If the bait is found at this time, when the animals are hungry, it will be eaten with greater relish and its action will be more rapid and effective than after taking a meal of the natural food. If the bait cannot be put out in the morning, it should then be scattered in the evening after the animals have gone into their burrows for the night.

NOTE: In buying strychnine be sure to get the commercial, powdered alkaloid. Strychnine in any other form is not effective in the above preparations.

An important point to remember, if the best success is expected is to follow the directions exactly and make the measurements accurately.

Caution: All baits all containers, and all utensils used in the preparation of the poisons should be **Plainly Labeled** and kept out of the reach of children, irresponsible persons, and livestock.

Fumigation.

Ground squirrels may be destroyed by fumigating their burrows with carbon bisulphide.

Warning: Carbon bisulphide is highly explosive and inflammable; therefore it should never be brought near a fire nor opened near anyone who is smoking. It evaporates very rapidly; hence it should be kept in tightly corked bottles or cans. Great care should be taken not to breathe the fumes of carbon bisulphide, a few breaths may cause unconsciousness.

Directions for use: Two-thirds of an ounce (1½ tablespoonfuls) of carbon bisulphide should be poured on a small piece of cotton waste, shoddy wool, corn-cob, dry horse manure, or other cheap absorbent material and placed as far down into the burrow as possible. The opening of the burrow should be closed immediately with a shovelful of earth or sod. All animals in the burrow will be asphyxiated. Evey burrow showing evidence of use should be treated and all holes closed with dirt.

Because carbon bisulphide gas is heavier than air, it settles into the lowest parts of the burrow and will not go into any parts higher than the entrance of the burrow, unless pumped there with a special pump or exploded with proper precautions.

One gallon of the liquid is sufficient to treat 200 holes. This can be done by one man in 2 to 3 hours. It is used to better advantage after heavy rains or after irrigation; for when the ground is dry and full of cracks, the gas escapes and is not confined to the

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RELIABLE FARM BARGAINS

184 ACRES at $185 per acre, on good terms, or will cut into forty-acre tracts to suit the purchaser—one of the best farms that has ever been in our office for sale. The property is situated at Thatcher, a little town in the Bear River valley that has good schools, churches and social conditions. The property is right under the main canal, right near the mountain, hence it is mountain loam soil. The property is perfectly level, has been known as one of the best farms in Boxelder county for twenty-five years. This property is well improved from every point of view—has some beautiful buildings, is well fenced, has five acres of orchard and one-half acre of small fruit. Sixty acres of alfalfa. The balance of the ground has been raising grain, sugar beets and potatoes. This property is immediately adjoining the beet dump, and we believe that this farm will produce as much as any farm of the same number of acres in any part of this intermountain country. It has a full water right, good water for domestic purposes and it is seldom that a farm of this class is offered for sale.

46 ACRES, $205 per acre. If you are looking for a first-class farm that will produce the maximum crop at a minimum cost, we ask you to investigate this farm. It is one mile southeast of Tremonton. The main canal passes right by this farm. Lifting your headgates, you get your water direct from the canal; you have no laterals to bother with. It has a full water right from the Bear River canal. The place was all plowed last fall, with the exception of that planted to alfalfa. It is in first-class shape for crops this year. This has been known for a good many years as one of the most productive farms in Boxelder county. The improvements consist of a nice five-room house, large trees and lawn and flowers, making the place homelike. About one acre of fruit that is bearing well now. Good outbuildings. The property is on the main county road and is accessible to good schools, churches and social conditions. The terms are $3000 down and any reasonable terms on the balance. Three crops on this farm will pay for the land.

IN THE SAME VICINITY, immediately across the road from this property, we have 16 acres for sale at $190 per acre. This property is all plowed and under a high state of cultivation, ready to plant this year. Good terms on this property.

10 ACRES FIRST-CLASS LAND, located one mile from Kaysville, on a good road. The land adjoining sells from $200 to $250 per acre. We can sell this land at $160 per acre, on good terms. This is a bargain and will not last long.

4480-ACRE RANCH, divided as follows: 1280 acres is irrigated land, ample water. The balance of 2600 acres is grazing land, all fenced and cross-fenced, and is contiguous to the other land. There are 400 head of white-faced cattle, 80 head of short 2-year-olds and 80 head of long yearlings; 10 head of good horses, tractor engine with plows and all necessary machinery to run the ranch. There is a large six-room house, barns and other outbuildings necessary to run a first-class ranch. The price of this ranch is $140,000.

160 ACRES OF LAND IN THE BEAR RIVER VALLEY, 80 acres irrigated and 80 acres dry. We can divide this 160 acres up to suit the purchaser. We can either sell the 80 acres of watered land separate, or we can sell the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of the dry together. We can sell the 160 acres at a cash payment of $3000 down and any reasonable length of time on the balance at 7 per cent interest. The purchase price for the 160 acres would be $10,500. Water can be had for the 160 acres.

160-ACRE FARM IN CACHE VALLEY. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre, the pasture land for $10 per acre, or, if party does not wish to purchase the pasture land, we now have a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary, as part payment. There is still some due on the water.

KIMBALL & RICHARDS

"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

Do You Want a Farm?

We still have 1000 acres of excellent sandy loam farm land with an abundance of water that we will cut up and sell to the farmers in 80 acre tracts. We have large tractor engines, will plow the ground and furnish seed. Good school. Daily mail. Sold practically 2000 acres last year of this tract of land. Purchasers all satisfied.

Address

708 KEARNS BUILDING, SALT LAKE CITY, UTAH.

burrow as it is when the ground is wet.

The cost of treatment with carbon-bisulphide is greater than with poisoned grains.

Pocket Gophers

Pocket gophers are seldom seen. They live in underground tunnels from three to ten inches below the surface where they feed upon the roots of nearly all kinds of crops. The tunnels are extended as need of more food arises.

Opening from the tunnels to the surface are made at intervals of a few feet, through which the loose earth, dug from the burrows, is pushed out in little heaps, varying from a few quarts to a bushel. The opening is then closed by packing it full of earth. As the tunnel is extended, a new opening is made farther along, and a new mound marks the line of progress. Gophers are solitary, more than one rarely if ever occupies the same burrow. Judging from the great number of mounds on a small area, however, it is very probable that they live in colonies. In the course of a month, a dozen gophers in an alfalfa field will throw up several hundred mounds of earth. It is by these mounds that the pocket gopher is best known. In alfalfa fields these mounds seriously interfere with mowing. Close mowing is prevented and much damage is done to the mowing machine.

Two practical methods of killing pocket gophers are poisoning and trapping. Poisoning is the more effective and practical method for ridding large areas of these pests. The baits consist of poisoned sugar beets, sweet potatoes parsnips, or carrots placed in the underground tunnels.

Formula Numbr 2:
Bureau Biological Survey.

Strychnine (powdered alkaloid), ⅛ oz.

Saccharine, 1-80 oz.

Vegetables, 4 quarts.

Directions: The vegetables should be cut about 1 inch long and ½ inch square, washed and drained. The strychnine and sacchaine should be ground together dry in a mortar or dish; then slowly sifted from a pepper box over the dampened baits, stirring the while to distribute the poison evenly.

Trapping is slow and requires careful work. Although any steel trap may be used successfully, much better results are had with the special traps made for these animals. The regular Macabee gopher trap and the Reconstructed. Macabee gopher trap are examples of these special traps. Trapping is effective only on small areas where few gophers are present. The traps are baited and set in the main underground tunnels; two traps are set a few inches apart and face in opposite directions so as to catch the gopher if he comes from either direction. The hole that has been made into the tunnel should be closed after setting the traps.

The tunnels of pocket gophers may be located by means of a probe. This tool may be made from a shovel or pitchfork handle by fitting into one end a 3-8 inch iron rod, protruding about 12 inches, and bluntly pointed. A foot rest fitted on the handle, about 15 or 16 inches above the point, is very helpful. By probing this tool into the ground, near gopher workings, or a foot or two back of fresh mounds, the open tunnel can be felt as the iron point breaks into it. The hole may be enlarged by pressing the probe against its sides or by using the opposite, blunt end of the instrument. One or two baits are dropped into the main tunnel, not in the short laterals which lead to the mounds, and the probe hole is closed.

A man soon becomes expert in locating the runs, and can treat 300 to 500 gopher workings in a day. Baits need to be placed at only two points in each separate system of 10 to 30 mounds, which is usually the home of a single gopher. This method has met with success wherever used.

Caution: Observe the same precautions with respect to poison containers and utensils as recommended in mixing the baits for ground squirrels.

Jack Rabbits.

When rabbits become a pest to crops and it is impracticable to use their flesh for food they may be killed with poisoned baits.

Poisoned Alfalfa
Formula Number 3:
Bureau Biological Survey.

Strychnine (sulphate), 1 ounce.

Hot water, 2 gallons.

Alfalfa (leaves or chopped), 10 pounds.

Directions for mixing and putting out the baits: Dissolve the strychnine in the hot water and sprinkle over the alfalfa. Mix thoroughly until all the moisture is absorbed.

The poisoned alfalfa should be distributed at night in small handfuls, and in lines a few feet apart, across portions of fields where observations show the rabbits to be feeding. Stock should be excluded from the fields. After snow falls poisoned alfalfa should be distributed about the stackyards or in previously baited enclosures from which stock are excluded. These enclosures should be baited with a small quantity of clean alfalfa hay a few nights previous to poisoning so as to get the rabbits accustomed to feeding in them.

This bait is used in winter, preferably after the snow covers the ground, and when the natural food is scarce.

(Continued on page 15)

FARM LANDS

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy, hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY
Ogden, Utah.

PERSONAL ATTENTION

is given every farm listing in this office. Our 1918 organization is equipped to get you a buyer at a satisfactory price. We can offer good city property as part payment for your farm if desired. List with us.

BAIRD REALTY CO.
323 Judge Bldg. Salt Lake

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has ben signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25.00 to $50.00 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAUHILL INVESTMENT CO.
343 Main Street Salt Lake City

Go to Lakeview, Oregon now and purchase an alfalfa farm under the Goose Lake Valley irrigation project. Price $50.00 to $75.00 per acre. $5.00 per acre down and the balance in 20 annual payments, with interest at 6 per cent. Land is level, soil black loam, neighborhood is well settled, free wood, posts and fine outside grazing on the National Forest. Soil very productive. For particulars call or write E. J. Groesbeck, Room 53, City and County Bldg., Salt Lake City, Utah.

"—use foods that require less sugar"

THIS is one of the most important recommendations of the Food Administrator: "In cooking and baking use foods that require *less sugar*."

In other words—use Ghirardelli's. Use it freely and wisely—in place of other less nutritious and more expensive foods. Not only will you save money but you will help in food conservation.

Cooking and baking require less sugar when you use Ghirardelli's. Because—it contains in itself the sweetening flavor you need. More than this—it adds a new touch of richness to your icings, your puddings and other desserts.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852 San Francisco

PLANT THE BEST SEEDS

Don't take chances with uncertain seeds. Remember, you plant but once a season. Buy the best—buy

VOGELER'S PURITY SEEDS

They are the cleanest, the purest and the best qualities obtainable anywhere at any price.

We have a large stock of garden and field seeds, all carefully selected and tested. Give us your order now and we will sell you seeds that not only grow, but pay to grow.

Vogeler Seed Co.

SALT LAKE CITY, UTAH.

Our Highways and National Preparedness

THIS THE IMPORTANT TIME IN ROAD DEVELOPMENT

Extracts from New England Roads February, 1918.

Those pioneer advocates of good roads who have labored unceasingly at great time and expense to bring the country out of the "land of mud" into a nation that knows no loneliness, no isolation and no abandoned farms, are witnessing today a more impressive demonstration of the value of road improvement than anything which they heretofore ever dreamed of experiencing.

With railroad transportation facilities entirely inadequate for the existing requirements, overland delivery of commodities appears to be the only solution of an all too serious situation.

Overland transportation of freight necessitates, first, a carrier to haul the commodities, and, secondly, a road or highway on which the carrier can travel. The carrier is now available in the form of motor trucks. The highways are available only to the extent that communities have awakened to the exigencies of the situation and improved them accordingly.

In spite of the fact that road improvement today has reached a stage of development which was considered far beyond possibility years ago there are even now deplorable instances of neglect that should cause the localities in which they exist to blush with shame. Nevertheless we must make the most of the facilities at hand.

The situation is precarious, to express the idea mildly. Commodities must be transported from shipper to consignee. The railroads are not able to transport them in the necessary volume and highway transportation must relieve the situation. There lies the impressive demonstration of the importance of road improvement.

More than one good roads enthusiast in times gone by shuddered when he thought of the utter absence of efficient road communication, should the country become involved in a great war. War meant either one of two things or both of them—it might mean an invasion of our territory by hostile soldiers and it necessarily meant an increased demand on the avenues of transportation from one community to another.

However, the thought of a war involving the peace loving country was almost beyond comprehension. Consequently the arguments devoted in behalf of road improvements had to do with their influence on social and economic condition, how they would enhance the market value of farm products, how they would act as medium of social intercourse between inhabitants of scattering communities, the wholesome effect they would have on improving school conditions, and so on.

Now is the most important time in the history of road development for good roads advocates to concentrate their efforts on a special drive in the interest of highway improvement. Highway construction is destined to prove an important factor in winning the war, because it will promote business. A country with its domestic business at a standstill cannot fight the battles of a world war.

ARE HIGHWAYS IMPORTANT?

Extracts of New England Roads February, 1918.

The Chamber of Commerce of the United States, meeting in convention at Atlantic City last September, adopted the following resolutions:

"Whereas. It is essential that all transportation facilities of the nation should be brought to the highest state of efficiency in order that foodstuffs may be moved economically from the farm to the market, that manufactured products be moved at the lowest cost from the factory to the counter,

"Whereas, The public highways offer a good prompt and economical means to supplement transportation by rail and water, therefore be it

Resolved, That the prompt improvement of our public highways is important and should be forwarded in every proper way."

How many people in this intermountain country took the time to read these resolutions last fall, or reading them realized their full import?

After the experience of the past three months, few men in the state fail to realize what a vital factor for life, health, comfort and safety is embodied in a complete highway system.

Motor trucks have brought us food, clothing and other necessities of life at a time when the railroads were hopelessly blocked. There is no record of the thousands of tons of freight transported over our highways since the freight blockade first swamped the railroads, but the total must be enormous. Men who have driven through the winter have met on the highways a ratio of three, four and five freight vehicles to every passenger vehicle.

Without further light it is impossible for us to conceive any material object more important than feeding and colthing our own people, and defending them in case of attack. Without proper nourishment and clothing we cannot do our part in winning the war. We not only will cease to help, but will become a burden on someone else.

All future hope of life, liberty and the pursuit of happiness depends on crushing the German beast.

We must have more transportation, more highways, more motor trucks. To give us food and clothing is not enough. We must see that not a single ton of freight of any kind stops before reaching its destination.

Highways and motor trucks for short hauls, the railroads for carload, long hauls will accomplish this. Highways will help win the war.

ROADS AND SCHOOLS

Extracts from New England Roads February, 1918.

Every sort of town in the United States gets its due share of the total incerase in population, and a little more. Population of incorporated places of less than twenty-five hundred inhabitants increased over a million and three-quarters in the last census period, and nearly three and a half millions since 1890. At that date they had seven and a half per cent of the total population, and in 1910 nearly nine per cent. So with the towns from twenty-five hundred up to fifty thousand, while bigger cities ran way ahead of the general rate of growth. But farm population declined from fifty-six and four-tenths per cent of total population in 1890 to fourty-four and eight-tenths in 1910.

There are no glittering business opportunities in small country towns, but there are many social opportunities. It is easy for people to get together in all weathers. The public schools are much better than those in that large part of the strictly rural region where the barbarous one room ungraded institution prevails. So people are willing to live in small country towns.

The farm problem is in no inconsiderate part a matter of good roads and good country schools. Good country schools are nearly impossible without good roads, for a really good country school is a consolidated one, drawing children from an extensive district and giving them transportation from home to school and back.

A farm on a poor road is a prison for women and children part of every year. Nobody likes a prison.

I AM THE UNIMPROVED HIGHWAY

By H. G. Andrews, (Copyrighted by the William Penn Highway Association).

I am the unimproved highway.

My name is Mud!

The feet that pattered in primeval slime gave me birth.

Unchanged while the ages passed, I have endured. Time has but served to increase my infinite variety. Earthborn, and without a soul, yet have I lived. From the beginning have I been man's enemy.

A dust-colored python am I, stretching my length across the hills, waiting my time to crush endeavor.

I have snared caravans that left bleaching bones in lands new desert.

Empires have fallen because of me.

I have turned victories into routs; I have trapped mighty leaders and have crushed armies.

I am without faith; and those who trust me I deceive.

Today I am fair to look upon; tomorrow a steaming bog.

I add difficulty to Distance.

With Isolation I conspire to unjoint the endeavors of man, I tug at the wheels of the grain cart, that bread may be dear.

I hamper those who would feed the race. I am an enemy of Church and School. I mire the healer on his rounds that little ones may die.

I am a disrupter of Home. I speed the first-born to the cities when I am fair to see; and when he would return I face him with my forbidding depths. I minister to Bitterness; and lay a tax on all the world. There is none who lives who does not pay me tribute.

When men plowed with a crooked stick I was there. When the ancients covered me with stones I slipped away to other lands. I am the oldest lie that lives today. Men count me cheap. I know the price they pay who count me so.

I am the unimproved highway.

My name is Mud!

This Concrete Feeding Floor

Prevents waste of high-priced corn — it deli rs the bacon.

In these days you can't afford to feed grain to mud-holes. It's pork we need.

Concrete feeding fl ors mean permanent fl ors no filth, no disease, no place for rats to nest.

You can d y f llowing the directions in ir B lletin .

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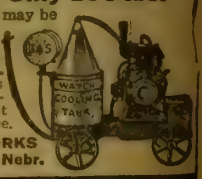
CONCRETE *for* PERMANENCE

Light Weight Cushman Engines

Built light, built right—for farmers who want an engine to do **many jobs in many places,** instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. **Throttle Governed.** Schebler Carburetor. Friction clutch pulley Runs at any speed.

4 H. P. Weighs Only 190 lbs.

Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is original and successful **engine for Binder.** Also used on Corn Binders and Potato Diggers. Engines distributed from Salt Lake City. Engine book free.



CUSHMAN MOTOR WORKS
954 N. 21st St., Lincoln, Nebr.

For All Farm Work
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UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

PURPOSE AND POLICIES OF UTAH IRRIGATION AND DRAINAGE CONGRESS

Purpose.

Development—The inherent purpose of the Irrigation and Drainage Congress is to stimulate, and assist in consistent development of irrigation and drainage interests in Utah. Many conditions existing in the State tend to prevent desirable growth of our agriculture. A noteworthy example is the present chaotic condition of water rights in the older irrigation sections. Devising means of fairly and equitably determining and protecting vested water rights where irrigation has been practiced for many years is, however, no simple question. The problem is very preplexing.

Investigation—The satisfactory solution of present day irrigation and drainage problems, in order to be lasting, must be based on careful and painstaking investigation and analysis of present conditions. The need of such study in Utah is beyond question and undoubtedly, an organization consisting of all of the irrigation and drainage companies of Utah; individuals in the various professions interested in these subjects; and commercial, manufacturing, and construction companies; may become a powerful factor in stimulating and conducting such investigations. That continuous and profitable development must be based on thorough knowledge, is fully recognized by all who have thought seriously along these lines.

Education—Knowledge of irrigation and drainage, to be of real value, must be widely disseminated. Investigation without education would leave the desired goal unattained. There is also urgent need of wider dissemination of information now at hand. If the irrigation lawyer understood better the work of the engineer and farmer; if the farmer knew more and farmer; if the farmer knew more of the real workings of law and engineering; and if engineers had greater sympathy toward the irrigators' problems, Utah's irrigation and drainage interests would fare very much better. The States of Oregon, Washington, Nebraska, Idaho and Kansas have recognized these facts and have, therefore, organized irrigation and drainage associations which have done much to advance agricultural prosperity. That adequate organization of Utah's irrigation and drainage interests will contribute much to her progress cannot be doubted.

Policies.

An Open Forum—The Utah Congress is open to all interested in its work. Engineers, lawyers, farmers, irrigation and drainage companies, construction and supply companies are especially invited to become members.

Types of Membership—There are two types of membership. For annual membership a minimum fee of only $1.00 is charged. An initial fee of $15.00 entitles either individuals or companies to life membership.

Equality of Opportunity—The Congress aims to give every person; corporation; and profession equal opportunity to present problems and needs. No advantage shall be given to special factions.

Value to Members—Consistent, honest, publicity is valuable alike to engineer, lawyer, irrigator; and to construction, supply and development company. The Congress will furnish this through its meetings and publications. Also the association with fellow workers has a stimulating effect of exceptional value. Moreover, the educational value which cannot be overestimated, must be kept in mind.

The published reports of the Congress will become valuable records of the best irrigation thought as the years come and go; as well as serve as a single medium through which to become acquainted with methods, materials and men of value to irrigation and drainage.

O. W. Israelsen, L. M. Winsor and J. D. McKay, Committee.

GOVERNMENT CROP REPORT

March 8, 1918.

Corn

On March 1st Utah had over twice as much corn as in the preceding year, having a total of 70 thousand bushels. Nevada shows little change. The United States has 510 million bushels more than a year ago, or a total of 1,292,905,000.

Wheat.

Utah has almost 100 thousand bushels more of wheat than a year ago. The agitation for an increased price retarded the movement to market lately. The United States has 111,272,000 bushels, an increase of almost 11 million bushels over last year.

Oats.

The mild winter has enabled Utah farmers to maintain their stocks of oats. There are in the state 330 thousand bushels more than a year ago.

Barley.

The barley stocks in Utah are about normal, but much larger than a few years ago. This is due mostly to the mild winter, but possibly prohibition had had some affect.

Percent of Merchantable Corn.

The Utah and Nevada figures are practically normal, being 75 per cent and 85 per cent, respectively. The United States shows an exceedingly poor quality of corn, only 60.3 per cent being merchantable.

The following estimates of grain on farms March 1, in thousands of bushels (i. e. 000 omitted) have been made by the Crop Reporting Board of the Bureau of Crop Estimates of the United States Department of Agriculture.

Crop	1918	1917	1916
CORN			
United States	1,292,905	782,303	1,116,559
Utah	70	34	66
Nevada	3	3	5
WHEAT			
United States	111,272	100,650	244,448
Utah	1,412	1,311	1,892
Nevada	152	159	282
OATS			
United States	595.195	394,211	598,148
Utah	1,452	1,120	1,316
Nevada	156	120	99
BARLEY			
United States	43,404	33,244	58,301
Utah	317	184	303
Nevada	126	49	138
Per cent of corn crop merchantable	%	%	%
United States	60.3	83.9	71.1
Utah	75	75	78
Nevada	85	73	75

Estimates of the percentage of the crops shipped out of the country where grown are as follows (10-year average):

	Corn	Wheat	Oats	Barley
	%	%	%	%
United States	20.2	58.5	29.6	49.2
Utah	4	37	28	34
Nevada	0	21	18	15

PLANTING IN THE HOT-BED

By T. H. Abell, Assistant Horticulturist Utah Agricultural Experiment Station.

After the temperature of the manure in the hot bed has gone down to 90 degrees F., it is safe to plant the seeds. If they were planted before this, the heat would kill the seeds. There are two methods of growing plants in hot-beds. One is to place about 4 inches of good soil directly on the manure and put on top of that about one inch of sifted soil. The seeds are planted directly in this fine top soil. The other method is to put only about 3 or 4 inches of soil on the manure and to sow the seed in soil in "flats," which are boxes 3 inches deep and any size desired, which are set on the soil. The "flat" method may cost more but is more convenient. It is well to provide drainage in the "flats" by putting a thin layer of coarse soil on the bottom.

If it is intended to grow early radishes and leaf lettuce the hot bed, the seed may be sown most any time and may be sown in succession, that is, a small amount each time at intervals of 7 or 10 days. If the bed is to be used for growing plants which are later to be set in the garden, there is a fairly definite time to sow the seed. Peppers and eggplants seed should be sown about the last of February or the first of March, but even now it is not too late. Peppers, eggplants and tomatoes may be set in the field about 10 weeks after sowing the seed. Tomatoes, late celery, and head lettuce seed may be sown in the latter part of March. Lettuce and celery may be set out about 8 or 9 weeks after seed sowing. All of this seed is quite small and in sowing, needs to be covered with only a fraction of an inch of fine soil, which should be kept thoroughly moist and perhaps shaded until the seedlings break through.

HOW WE ARE WASTING MILLIONS

Preventable Waste To The Amount of $1,943,000,000 is Going on in America —How Much Are You Losing?

In this country we waste $500,000,000 annually in soil erosions. A loss that could be stopped by the farmer. We lose $238,000,000 a year through floods and at least $100,000,000 of this could be prevented by proper farm draining. Each year insects destroy our crops to the value of $659,000,000. Live stock diseases which are preventable cost us another $100,000,000. We lose $40,000,000 a year by the careless handling of eggs. Rats, mice, gophers and other small animals destroy crops to the value of $100,000,000 a year. These could be controlled and totally exterminated.

A great deal of fruit and many vegetables are wasted on the farm. These could all be canned at home, and we would have a saving of a hundred million dollars. America's annual bill for not taking the right care of farm machinery amounts to $25,000,000. America's careless and wasteful handling of apples and potatoes makes at least another $10,000,000. Authorities state that the sum total of our neglected fences, roads and farm buildings represents another loss of $250,000,000.

It is a simple problem in arithmetic to sum up all these. Sum them up and you will find that they total $1,943,000,000—a sum that is certainly worth thinking about.—E. B. House, Colorado A. C.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

ACRE COST OF PRODUCING DRY LAND WHEAT

(Continued from page 3)

per acre; on a 15 bushel crop the producer has made a profit of $1.00 per acre; while on a 10 bushel corp he has lost $2.75 per acre.

The same number of man and horse hours are used in producing an acre of wheat during the war as were used in times of peace. But man labor is now worth 37½ and horse labor 12½ cents per hour. This means that labor costs are about 30 per cent higher than for the previous year. On this basis the cost of producing an acre of wheat on fallow land is $14.35, as against $11.28 per acre for the period just before the war or a spread of about $3 per acre.

But what about the price of wheat now as compared with the 10-year average price? The 10-year average price was 79 cents per bushel in Utah. The price set for the 1918 wheat crop is $2 per bushel at Salt Lake City. This means that our average acre yield of 20 bushels will sell for $40. The gross income minus the cost of production gives a profit of $25.65 per acre.

Probably an average yield of 20 bushels per acre is too high. All right, say the average yield is 15 bushels or possibly only 10 bushels per acre. With an average yield of 15 bushels there is a gross income of $30 minus the cost of production $13.90 leaves a profit of $16.10 per acre. If the average yield is only 10 bushels there is a gross income of $20 deducting $13.47 the cost of production, there still remains a profit of $6.53 per acre. The cost of production, value, and profit per acre are shown in Table II.

These data show that the present wheat price of $2.20 per bushel at the primary markets, is high enough to give the producer a good profit per acre. Profits per acre are higher in wheat farming than ever before. Put your shoulder to the wheel and help the boys "over there" and help yourself.

TABLE I. COST OF PRODUCING AN ACRE OF DRY LAND WHEAT.

	Before the War			During the War		
	Hours Man	Labor Horse	Acre Cost	Hours Man	Labor Horse	Acre Cost
Plowing	$2.00	$10.00	$1.44	$2.00	$10.00	2.00
Disking	1.14	4.57	.72	1.14	4.57	1.00
Harrowing	.32	1.28	.20	.32	1.28	.28
Seed Wheat			.80			2.00
Seeding	.60	2.40	.38	.60	2.40	.53
Harvesting (header)	1.65	3.60	.75	1.65	3.60	1.07
Threshing	2.00	.80	.56	2.00	.80	.85
Sacks (rent			.30			.30
Marketing	1.00	2.00	.43	1.00	2.00	.62
Interest on Investment			4.20			4.20
Interest and depreciation on machinery			1.00			1.00
Taxes			.50			.50
Total	$8.71	$24.65	$11.28	$8.71	$24.65	$14.35

TABLE II. PROFIT PER ACRE IN WHEAT FARMING

	Before the War			During the War		
Yield	Cost	Value	Profit	Cost	Value	Profit	Gain
*20 bu.	$11.28	$15.80	$4.52	$14.35	$40.00	$25.65	$21.13
15 bu.	10.96	11.85	.99	13.90	30.00	16.10	15.11
10 bu.	10.65	7.90	2.75	13.47	20.00	6.53	9.28

*Note the small difference in the cost of producing a 10, 15 or 20 bushel crop.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending March 19th—Cattle—receipts, 1,369; market, steady; choice steers, $10.25@11.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $8.00; fair to good, $6.00@7.50; canners, $4.50@5.25; Feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $7.00; bologna bulls, $6.00@6.50.

Hogs—Receipts, 915; market, steady; tops, $16.75; bulk of sales, $16.75.

Sheep—Receipts, 2,766; market, steady; lambs, $15.00@15.50; ewes $9.00@10.50.

North Salt Lake, March 19.—Cattle—Receipts, none; market, 25c higher. Choice steers, $10.25@11.00; good steers, $9.25@10.25; fair steers, $7.50@8.50; choice cows and heavy heifers, $7.75@8.50; fair to good cows and heifers, $6.50@7.50; cutters, $5.50@6.25; canners, $5.00@5.50; fat bulls, $6.75@7.50; bologna bulls, $6.75@7.50; veal calves, $8.00@10.00.

Sheep—Receipts, none; market steady to higher. Good choice lambs, $15.00@15.50; choice yearling wethers, $12.00@13.00; fat wethers, $12.00@12.50; fat ewes, $10.00@11.00.

Hogs—Receipts, 87; market higher. Choice smooth fat hogs, 175 to 250 lbs., $16.75; bulk of sales, $16.50@16.65.

Omaha.

Omaha, March 19.—Hogs—Receipts, 13,500. Market, 10@15c higher. Heavy, $16.30@16.90; mixed, $16.60@16.65; light, $16.35@17.00; pigs, $10.00@16.50; bulk of sales, $16.40@16.70.

Cattle—Receipts, 6000. Market, steady to strong. Native steers, $9.50@10.30; cows and heifers, $8.00@11.00; western steers, $8.50@12.25; Texas steers, $7.75@10.25; cows and heifers, $7.50@9.50; canners, $7.00@8.00; stockers and feeders, $7.00@11.50; calves, $9.00@13.00; bulls, stags, etc., $7.75@10.00.

Sheep—Receipts, 10,500. Market, strong to 10c higher. Yearlings, $13.00@16.50; wethers, $12.00@15.00; ewes, $11.00@14.00; lambs, $16.70@18.50.

THE FARMERS' ACHIEVEMENTS

Dr. David F. Houston, Secretary of Agriculture.

The achievements of the farmers and the livestock men furnish cause for congratulation and encouragement, but not for complacency or for any let-up this year in efforts to better the record and to conserve food. The necessity of again securing large yields from the farms and ranches this year has been strikingly emphasized by the President in his message to the farmers of the country and is steadily being pointed out by the department of agriculture and other agencies through various channels, including especially the extensive farm demonstration activities of the department and the state agricultural colleges.

Specific suggestions are now under consideration for the spring campaign and will be made public in the near future. It is clear that it will be economically wise and advantageous for the farmers of the nation to put forth their best efforts during the coming season to equal and, if possible, to exceed their record of last year. In spite of the large production in many directions during 1917 the situation is not satisfactory. The supply of wheat in this nation and in the world is inadequate. Owing to short crops in preceding years the reserves of a number of important commodities have been greatly reduced. Whether the war continues or not the demand on this country, because of the increasing population and of the needs of Europe, will be great. They will continue to be great for a considerable period even after peace returns. There will be an especially strong demand made on this country for meats and livestock.

The record of farmers last year, made in the face of obstacles, is ground for confidence on their part that, with equal application and organization, they can overcome the difficulties this year.

UTAH EXPERIMENT STATION ISSUES BULLETION ON ORCHARD HEATING

The Utah Experiment Station has "Orchard Heating" by Dr. F. L. West and Mr. N. E. Edlefsen, which should be of great value to the fruit growers of this section.

The investigations were begun when "orchard heating" was being boomed in Utah. Agents representing manufacturing concerns advertised the practice widely and sold many of the Utah farmers equipment for heating their orchards. The Experiment Station authorities could not advise whether or not "orchard heating" was practicable in the State because no investigations had been made in Utah. However, experiments were begun immediately as the practice was reported as being very successful in some of other states, such as California.

The investigators have answered in a very thorough and scientific manner the following questions which have confronted the fruit growers of this section for some time:

1. How low can temperature get and yet be able to protect the fruit buds?
2. What is the best method of heating in Utah?
3. Does it pay to heat in Utah?

The temperature to which the surrounding air may fall and yet keep the temperature of the orchard above the "danger point" depends on the rate of air movement and on the number of heaters used. A high wind makes "orchard heating" very difficult. With one hundred heaters per acre and a wind of not over 3 or 4 miles per hours one can expect to keep his orchard about 4 degrees F. warmer than outside.

Smudging the orchard seems to be very little value in itself, heat must be applied with it. Oil seems to be the best fuel as it is a little more convenient to handle.

With fruit at its present price and the high cost of fuel "orchard heating" seems of doubtful value in Utah.

The value of the fruit on the trees being usually less than the cost of heating to save it.

This publication will be mailed free of charge to any one desiring it by the Utah Agricultural Experiment Station, Logan, Utah.

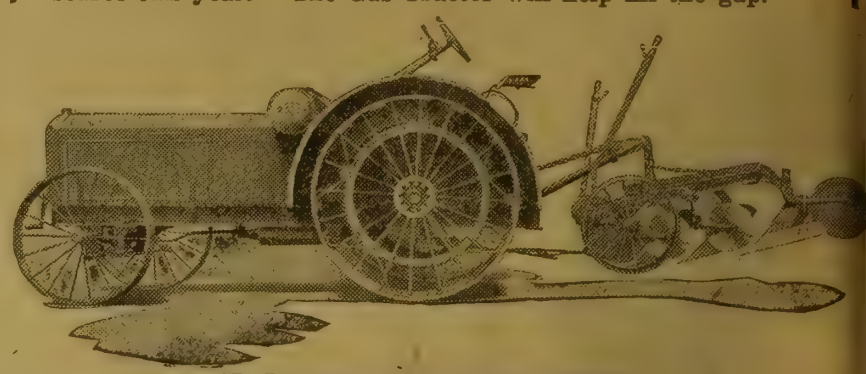
In 1913, Europe produced 43 per cent of the world's sugar; since then she has had ther engagments.

Any fod consumed over and above the needs of the human body is wasted.

We have to put every ounce of effort behind the men behind the guns.

You May Not Have a Son to Send to the Front

but your neighbors sons have gone; and man power will be scarce this year. The Gas Tractor will help fill the gap.



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12 Years Experience back of this Tractor.
4 Cylinders.
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Get our New Catalog and Guide Book, which will tell you what, when and how to plant.
The most instructive book on Gardening and Farming ever published for FREE distribution in the Rocky Mountain States.
"Do your bit" for the Food Supply. Write now for your copy.

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Three new 14-inch power lift John Deere engine gang plows. Can save you from $50 to $75 on present prices of these kinds of plows.

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Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.

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OUR PEDIGREE LAYING WHITE LEGHORNS won at the State Show, Salt Lake City, December 15 and 22nd, 1917, 3 Firsts, 4 Seconds, 4 Thirds, 3 Fourths and 2 Fifths, beside Silver Cup for best display, White Fowls and $65.00 Championship Silver Cup for highest combined score of Cock, Cockerel, Hen, Pullet and Pen in show. Stock for Sale very reasonable.

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ARCADY PLACE HENNERY

Is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
Vellsville, Utah

20 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS
Breeders of Percheron Horses and Rambouillet Sheep.
W. S. HANSON, Prop.
Bollinston Utah

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

THE CONTROL OF RODENT PESTS

(Continued from page 11)

Poisoned Oats.

Formula Number 4:
Bureau Biological Survey

This formula is specially recommended by the biological Survey for use in Utah.

Strychnine ,sulphate), 1 ounce.
Gloss starch, 1 tablespoonful.
Baking soda, 1 ounce.
Heavy corn syrup, 1 tablespoonful.
Table salt, 1 teacupful.
Water, 1 pint.
Oats (plump and clean), 12 quarts.

Directions for mixing: Dissolve the strychnine in ¾ pint of water, and heat to the boiling point. Mix the starch in ⅛ pint of cold water, add to the strychnine solution, stir, and boil until a clear paste is formed. Remove from the fire, add the soda (previously dissolved in ⅛ pint of water) and the syrup, then stir to a smooth, creamy mass. Stir in the salt. Pour over the oats and mix thoroughly until the grain is evenly coated. Allow to stand about two hours before distributing to allow the poison to penetrate the grain.

Distribute the poisoned oats at night in small quantities of about a tablespoonful in a place, and in lines a few feet apart, where it is known that the rabbits are feeding. Each quart of grain is sufficient for 25 to 30 baits.

In fields or on the ranges where stock are present, the poisoned baits should be placed in small enclosures from which the stock are excluded. Bait these enclosures with a small quantity of clean oats a few nights before putting out the poison.

This bait is effective at all times of the year, but the best results are obtained during the winter months.

Caution: Exercise unusual care in keeping the poison, the baits, and the utensils used in mixing the baits away from children and animals.

Field Mice.

Field mice do not hibernate during the winter as do some of the other rodents, but are active throughout the year. They feed night and day.

In the winter these animals may be economically and effectively killed with poisoned alfalfa, prepared according to Formula Number 5.

Formula Number 5:
Bureau Biological Survey.

Strychnine ,sulphate), 1 ounce.
Hot water, 2 gallons.
Alfalfa (chopped or leaves), 30 pounds.

Directions for mixing: Dissolve the strychnine in the hot water and sprinkle it over the chopped alfalfa or alfalfa leaves, previously moistened with water. Mix and thoroughly stir until the liquid is evenly absorbed by the alfalfa.

Put the bait out in small quantities, about a tablespoonful to a place, along the mouse runs and at the entrances of their burrows.

Poisoned grains may be used effectively at any time of the year. Prepare these baits in accordance with Formula Number 6.

Formula Number 6:
Bureau Biological Survey.

Strychnine (sulphate), 1 ounce
Boiling water, 2 quarts.
Laundry starch, 2 tablespoonfuls.
Cold water, ½ pint.
Oats (clean grain), 1 bushel.

Directions for mixing: Dissolve the strychnine in the boiling water. Dissolve the starch in the cold water. Add the starch to the strychnine solution and boil a few minutes until the starch is clear. Pour the solution over the oats in a metal tub and stir thoroughly until each grain is evenly coated. Let the grain stand over night to absorb the poison.

The poisoned grain should be distributed along the runs and near the holes not more than a teaspoonful in a place. Choose areas covered with weeds, brush, hay, straw, or rubbish on which to scatter the baits so as to avoid destroying birds.

It will be observed that the larger grains, such as oats, are recommended for all of the baits. The reason for this is that birds do not eat these grains as readily as the smaller ones.

Caution: Keep all poisons labeled and out of reach of children and animals.

Protect the Natural Enemies of Rodents.

One of the chief causes which have favored the rapid increase of ground squirrels, mice, and other rodent pests has been the driving away from the fields, and the killing off, by man, of the natural enemies of these animals.

Some of the smaller carnivorous animals such as badgers, skunks and minks, most of the hawks and owls, and nearly all of the snakes are the farmer's best allies in the control of rodents. In spite of this fact, we are unwisely and in many cases, ignorantly, allowing many of these beneficial animals to be killed off instead of protecting them. Before killing any animal, a person should make sure that it is his foe and not his friend.

QUESTION AND ANSWER

Utah Farmer:

Dear Sir:—I have 80 acres of bench land the soil is only 8 to 12 inches deep, under laided with hard pan. Alfalfa does not do well on it. What sort of forage crop would you recommend for that sort of soil? Shall look for reply through Utah Farmer.

Respectfully yours,
J. E. Larson.

Answered by Dr. F. S. Harris.

Not knowing your exact conditions, I cannot be certain what forage crop you can raise to best advantage. On many of the bench soils of Utah, alfalfa is the most profitable crop; but if you have demonstrated that alfalfa will not grow you will need to find some other crop. If you have plenty of water timothy and red clover may do well. Brome grass or orchard grass might also be tried, the former if you are short of water. If you would write me describing your exact conditions I would be able to give you more specific advise.

COLD STORAGES TO SAVE POTATOES

As potatoes can be kept from sprouting and losing their food value by placing them in cold storage plants, the Bureau of Markets of the United States Department of Agriculture suggests that holders of stocks of potatoes consider the advisability of shifting portions of their holdings from common to cold storage, provided such stocks are of good quality and the costs of handling are not excessive. Unless such potatoes are moved very soon serious losses by sprouting and decay will result, which can only be avoided by keeping them at cold storage temperatures. Directions for handling potatoes in cold storages are given by the department.

Potatoes should be stored in the cold storage house in bags, boxes, or crates, which should be piled so as to permit free circulation of air, and care should be exercised in handling them to avoid all unnecessary injury. If potatoes are sorted and graded and placed in cold storage at a temperature of 34 to 36 degrees Fahrenheit, with humidity at 80 to 85, they can be held in good condition and available for food until July 1. Generally in the spring, before the movement of new potatoes from the South has started, there is a period of limited supply of good potatoes, and if these common storage stocks are placed in cold storages, this period of limited supply will be eliminated.

Another advantage of the baby bond is that you don't have to walk the floor o' nights.

Send your orders for Butter Wrappers today to the Utah Farmer.

MARQUIS SEED WHEAT

One hundred bushels of good Marquis Seed Wheat For Sale.

B. C. LOTT, Lehi, Utah.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service.

Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

ORDER SPRING PIGS NOW

Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.

VICTOR R. FISHER
Oxford Idaho

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Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
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White Leghorns, Brown Leghorns, $12.00 per 100.
R. I. Reds, $15.00 per 100.
ORLAND HATCHERY
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BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS

Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.

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MACHINERY FOR SALE

The U. S. Cream Separator like John Brown's soul, goes marching on. If you want to know about the new United States or need repairs for the old one, write

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SOY BEANS FOR SEED

GLOBE GRAIN AND MILLING CO.
Kearns Building
Salt Lake City, Utah.

Save The Fats

Home Economic Department, U. A. C.

War and other attending conditions have seriously reduced the world's supply of food fats:

First, by decreasing the number of our fat producing animals.

Second, by the use of large amounts of fat for the production of glycerine (used in the manufacturing of explosives.)

Fats Necessary at Every Meal, Because:

1. Fat furnishes heat and energy in the most concentrated form obtainable (one ounce furnishing the body with energy to do two and one fourth times as much muscular work as an ounce of any other kind of food).

2. Fat adds "staying quality" to a meal because of increasing the length of time it takes the stomach to digest it thus retarding the "pangs of hunger" due to a completely empty stomach.

3. Fat through making possible a greater variety in cooking, improves the quality of the diet.

4. Some fats are valuable for certain substances that are believed to be essential for growth and for life itself. The most important of these fats are milk fat, egg yolk fat, cod-liver oil and beef fat, especially that around the kidneys.

Fats are Being Wasted By:

1. Eating more than is necessary for bodily sustenance.

2. Feeding fat to animals which can be used for human food.

3. Throwing it away.

Use every scrap of fat. Save every scrap of fat from the table, render it out and use it in cooking.

Meat trimmings paid for should be taken home and used in the same way. A good use can be found for every kind of fat no matter what its consistency or flavor.

Savory Fats. To make use of fats of strong flavor or odor, brown with each pound of fat, a thick slice of onion, one sour apple and scant teaspoon of ground thyme or mixed herbs in a cloth, or a bay leaf and a few berries of allspice. These fats can be used to saute' potatoes, hominy, rice, etc., or for flavoring vegetables or soup.

Render Fats. Chop fat by grinding through a food grinder. Render it by heating it in the top part of a double boiler; then strain off the clear fat, or by heating the fat in boiling water, then straining, allowing to cool and remove cake of fat. Fat keeps better if not heated at too high a temperature. Store the fat in clean tin pails or in crocks tightly covered in a cool place.

Use the Cracklings. Salt them, put them into a glass jar. Use them in corn bread or suet puddings or in combination with lean chopped meat in various dishes.

Hard Fats. Beef kidney fat, lamb or mutton fat—are not satisfactory to use in flour mixtures because they must be melted in order for them to mix easily and because the product made from them dries out more rapidly than it does when soft fat is used. Soften hard fats by mixing two parts of hard fat with one part of soft fat, such as lard or cottonseed oil.

To Utilize Mutton Fat—by removing the strong flavor and softening it thus: Melt two parts of mutton and one part of soft fat in milk (sour being preferred) in a double boiler, (½ cup milk being used to each pound of fat.) Strain the rendered fat through a cloth, cool and remove the cake of fat from the milk. This may be used as a butter substitute in cooking.

To Clarify Fats. Mix boiling water with the fats, boil, strain allow the mixture to cool, remove cake of fat. To remove flavors of food from fat, melt the fat, add thick slices of raw potato and heat gradually until it ceases to bubble and the potatoes become brown.

Use No Butter for Cooking. Butter consists not only of pure fat but also water and curd, so less of substitutes (which contain more fat) and a little salt are needed when substituting for butter.

TABLE SHOWING EXCHANGE VALUE OF FATS

	Material	Equivalent
1 T.	Oleomargarine	1 T. Butter
1 T.	Commercial Fat Compound	1 T. Butter
1 T.	Chicken fat (clarified)	1 T. Butter
1 T.	Goose fat	1 T. Butter
14 T.	Lard	16 T. Butter
14½ T.	Vegetable fat as Crisco, Cottolene, etc.	16 T. Butter
1 cup	Chocolate in cake	3 T. Butter
1 cup	Thin Cream	⅓ T. Butter
1 cup	Whipped Cream 40 per cent	6 T. Butter
2 cups	Chopped Suet	16 T. Butter

QUESTIONS AND ANSWERS

Widstoe, Utah.

Utah Farmer:

Dear Sir:—Be so kind and answer through your magazine the following questions:

What causes ringbones on horses? Can they be removed? If so, what is the best remedy?

Very respectfully,
P. A. W.

Answered by Dr. H. J. Frederick.

Ringbones: Ringbones are usually the result of injury to the legs of animals. This injury may be severe or slight. Sometimes animals have a weakness of the bone, and due to some strain the ring bone may develop. This indicates a weakness in that particular family of animals. Again, it may be caused by direct blows or injury where the animal has perfect bone. This would be due to accident.

On noticing the ringbone start, the animal should have absolute rest and it is often well to blister the part so that it will keep it more quiet and bring more blood to the part, so that nature can repair the same. If the animal is worked during this time of repair, it usually enlarges the bone and assumes great proportion. When the enlargement rapidly increases, firing is the only resort. This is accomplished by penetrating the bone with a redhot iron at intervals of about an inch apart. This assists nature in strengthening the part and even reducing the same, in a good many cases overcoming it entirely. Absolute rest is the main requisite.

IRON AGE
Farm, Garden and Orchard Tools
Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The
IRON AGE Potato Planter
solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.
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No Doubles
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UTAH IMPLEMENT & VEHICLE CO.
Salt Lake City, Utah.

SOUTH OMAHA

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Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIA ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 35 MARCH 30, 1918

We Must Plant---Plant and Produce

R. E. MILLER

I have just finished reading a story as told by one of the boys from the front. When I think of what they are doing and must continue to do that we can win, I feel very much ashamed of the little I am doing at home, yet I have tried to do my share of everything asked, thusfar. To give some to the Red Cross, to buy a few Bonds or buy a few Thrift Stamps is so small as compared to what our boys over there are doing, that I feel like leaving for the front. They tell us however, that we older ones can do just as great a service here at home by producing food. When I here so many discuss the question solely from a dollar and cents point of view, in the matter of what they are going to plant and number of acres they will cultivate for this year I feel that some of us have yet to get the true spirit of our responsibility in this war.

We are asked to increase our food products not only meats, sweets and wheat but any and all kind of food stuff that will feed ourselves and permit of a surplus to send abroad. Locally, we have not felt the slightest degree of any want, every one has had food. This is not true however, with thousands in Europe who are looking to us for food. Thousands, yes millions, of men have been taken from the productive activities of life and made soldiers and they must be fed.

Think of our own boys over there that need food and plenty of it. What an unkind thing it would be for one of our boys to be in need of food and facing the terrible enemy they are fighting. Food we must supply them and we should have but one answer to the government whether for wheat, sugar beets or any other food products that we will furnish the amount asked and the question of acreage, labor and all other things necessary to produce. We must hustle, must secure from somewhere and then we will not be doing any more than "our boys" are doing. They are working day and night training to be efficient, few of as are working as hard. This work part of the program is only the smallest part for they may any day give up their lives.

There is no need for me to go into details and show the need of food, we ought to take the statements of government officials and accept the conditions as they have presented them.

Food, food is the cry from over there and it is really serious. When such statements as, "unless you send us food we will not be able to hold the lines." Come to us it would really seem there is great importance in food production.

I hope I have been able to bring it home to you the need of every farmer planting every available foot of ground possible. You know what your land is best adapted to, it may be wheat, grow wheat, if you can possibly grow sugar beets, then grow sugar beets and every acre possible. If you are producing livestock then emphasize it all you possibly can. If you are in the dairy business produce more and better milk, butter or cheese. The important thing of it all is to produce more food stuff.

We must not forget a reasonable rotation of crops and so balance our farm practice that we build for the future. No farm can continue to produce its maximum of food without livestock enough to maintain the fertility of the soil.

Cows are especially needed, as they produce the foods that the country is in the greatest need of and produce them with less feed and care as a general rule than other animals. The most satisfactory way to get cows enough to produce these animal foods is to raise calves on the farm.

Sheep are a good help on every farm. Hogs are asked for in increased numbers and can be produced in Utah at as low a cost as any other place. We have pasture and feed in abundance and we can make money raising hogs.

If you want to consider the monetary side of this question we have every thing in our favor on the price of hogs, wheat and sugar beets, we have a guaranteed return for our labor the highest prices ever known for years. So we are going to be paid well for doing a patriotic duty when we produce more food stuff.

Planting days are here and so I suggest we spare no effort in making the best seed bed we ever planted, using the best seed obtainable and see that the best yield per

(Continued on page 15)

POTATOES AS A DRY-FARM CROP

By J. W. Paxman.

Some encouragement has been held out of late in the growing of potatoes in a limited way on our dry-farms. Yields as high as 200 bushels an acre have been procured on the elevated dry-lands, and in a number of instances yields of 75 and 100 bushels have been reported. There is but little question of a crop, adequately compensating the outlay, being produced if the essential factors are brought into use in the selection of seed and the treatment of the soil. It may not be wise to enter largely into the production of the tubers on any large commercial scale, at least until some standard variety is propogated and proven. However, since there is such a crying need for all kinds of food, a small percentage of the more favorable lands intended to lie in fallow, can profitably be used by producing potatoes for home consumption, and some to sell to the neighbor or to the local grocer.

Better results would be obtained if this planting were contemplated six months in advance and the lands plowed extra deep in the fall. This would insure more feeding space for the roots and help in carrying the plants over any excessive dry spell during the growing season. Like all lands plowed in the fall the plat contemplated for potatoes should be thoroughly cultivated early in the spring. A thorough double-disking to stir the soil 4 or 5 inches deep would be an excellent treatment.

When the ground begins to warm up some, ordinarially about April 20th to May 5th, the potatoes can be planted in rows 3½ to 4 feet apart and sets 18 to 20 inches in the row. Potatoes of good size and quality only, and properly selected and treated against diseases, should be used. The sets should have one or two strong eyes and cut with as much flesh" on them as possible; planted deep enough in the soil to obtain moisture—from 4 to 6 inches will usually be deep enough.

Harrow the surface well after planting and repeat the operation two or three times thereafter until the vines get to a heighth of 6 or 7 inches. No injury will come to the plants by this operation. It is the cheapest cultivation we can do and will subdue all weeds if done properly. One or two subsequent cultivations with corn cultivator, will be all that is necessary to mature the crop.

After harvesting the potatoes, the land can be leveled and planted to fall wheat with the chances of an increased yield over the ordinary fallow. Dry-farmers can help the food situation materially by selecting one to five acres of the best fall-plowed lands and planting to potatoes. The following varieties are recommended: Early Eureka, Russett Burbank, and the Rurals. If these are not obtainable and other varieties are procurable that have made good on the dry-farms, plant them. Ask your County Agent how to select and treat your seed. Do not neglect this important item. Make every step you take a safe one and thus help win the war.

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FIRST state bank in Utah to be admitted to the Federal Reserve System.

Walker Brothers Bankers

Founded 1859.

Joined Federal Reserve System 1918.

SALT LAKE CITY

WE DISCOVER OUR GARDEN'S POSSIBILITIES

Mrs. W. Ray.

Last year we gave our vegetable garden more attention than usual with the result that we produced fully one-third more vegetables from the same garden and for 1918 we are planning a war garden. Our experience last summer taught us the possibilities that lie in the earth if we treat it fair.

We had always been content to raise enough from the garden to supply a few vegetables, in their season, for the table with but little thought in preparing a winter's supply. Other duties, then of more importance, engaged our time but now, when the cry seems universal to conserve the flour and meat supply we must prepare to eat more vegetables, we must look to our gardens to supply our home and have something to put on the market.

We gained enough experience last year in canning and preserving vegetables to warrant success on a much larger scale this year. We shall purchase a home canning outfit and can all the surplus vegetables not forgetting to make a keg or two of krout.

We saved a goodly portion of our garden seeds, but for those we have to buy we have an order placed with a reliable seedman and right here I want to emphasize the importance of procuring seeds true to name. If we hope to get the best results we must look after the quality of the seeds. We can not afford to raise tough, stringy beans when tender, stringless ones can be raised with the same amount of labor. We can't afford to lose our labor and the land by raising pithy beets, peas that waste their energy in vine growth or headless lettuce; thus I might run through the entire list of seeds. Beware of the "bargain-counter" seeds; take our advice for they are liable to disappoint you.

There is a lack in variety of the average rural garden. We have outlined our garden for 1918 as follows: Our garden plat lies in a long strip and consists of about three-quarters of an acre of light clay and is in a high state of fertility from the use of stable manure. We plant in long rows running the length of the garden.

We will plant two rows of Early Alaska peas, two rows of Early Ohio potatoes, two rows of early corn, two rows of beans, and one row each of radish and early turnips. We aim to plant these about the 10th to 15th of March. About the last of March we will set out a row each of tomatoes and cabbage plants and plant two rows each of bush beans and pole beans, also a row of parsnips, one of early beets, carrots, a few hills of cucumbers and squash.

We plant to have a succession of the following vegetables throughout the summer: Beans, dwarf string, pole and dwarf lima; beets, early turnip and midsummer; carrots, Early Golden and Hollow Crown; onions, Potato (set out in October) and Yellowskin; parsnips, Early Sugar; peas, Early Alaska and Champion of England; salad; raddish, Early Scarlet and Main Market; salsify; spinach; turnips, early midsummer and winter; cucumbers; cantaloupes; muskmelons; pumpkins; squash; eggplant; cauliflower; lettuce and parsley.

All through the season, after the extra early vegetables come in we shall eat plentiful of and sell some on the market and what we do not sell we will put up in cans for winter use. It is truly wonderful what can be produced upon three-fourths of an acre of fertile land to keep vegetables growing all the time. Last summer we got about 30 bushels of ripe tomatoes and 13 bushels of green picklers, 9,000 pounds of cabbage, 46 bushels of beans, eight bushels of beets, five bushels of carrots, 85 dozen roasting ears, 700 bunches onion tops, nine bushels big onions, three bushels parsnips, 126 gallons peas, 580 bunches radish, 15 bushels potatoes and other vegetables, such as salsify, spinach, egg plant, pepper, cantaloupes, etc., equally well. We aim to do much better this season, barring any unforseen disaster, because we have our garden plat in a much better mechanical condition.

Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neighbors.

Yours truly,
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

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There is a merchant who doesn't know how to sell,
A sawyer who doesn't know how to saw,
A teacher who doesn't know how to teach,
A preacher who doesn't know how to preach,
A painter who can't paint very well,
A printer who doesn't know how to spell,
An odd-jobs man with never a job,
A cobbler who doesn't know how to cob,
A miller who doesn't know how to mill,
A butcher who doesn't know how to kill,
A racer who doesn't know how to race,
A manson who doesn't know how to mace,
A clocksmith who can not mend a clock,
And a doctor who doesn't know how to doc;
And, since none of these are busy men,
You will find them again and yet again,
Every anon and a few times more,
'Round the stove in Mendolsen's store,
Each talking freely and through his hat,
Doing the one thing they are expert at,
Giving advice to farmers.

—The Prairie Farmer.

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VOLUME XIV. LEHI, UTAH, SATURDAY, MARCH, 30, 1918 No. 35

$10 For Sugar Beets On Hoover's Suggestion

For some reason it now appears hat contracting for sugar beet acre-ge has not been entirely satisfactory o the Federal Food Administration. The urgent need of more sugar seems o be more and more apparent to any ne who has been following events of ate.

At the request of Food Adminis-rator Hoover, the principal producers f Utah and Idaho, including the Utah-daho Sugar company, Amalgamated Sugar company, Layton Sugar com-any, and People's Sugar company, eld a conference with him at Wash-ngton D. C., when he urged upon all resent the necessity of a larger out-ut of sugar for the coming season, nd appealed to them to advance the ate of beets. Mr. Hoover said on his art he would do all in his ower to secure for the beet sugar anufacturers a reasonable profit on heir business, provided there was an ncreased production of sugar. After consultation among the factories in-erested, it was decided to pay the armers a flat rate of $10 per ton this ear, provided the acreage was in-reased at least 10 per cent over that lanted last year. The farmers are lso given the option to take the $10 at rate, or to retain their present rofit sharing contract on a $9 basis, hichever they preferred.

When the representatvies of the ifferent sugar companies returned ome they will be able to explain ome of the details that are lacking n the press dispatches.

It is the hope of the Washinton fficials that the making of this con-ession will stimulate production. The ugar companies have done their full art in responding to the country's all for an increase in the sugar out-ut this year, and confidence is ex-ressed that the farmers on their part ill show an equal spirit of patriotism y breaking the records for spring lanting.

The sugar companies have not been romised an increase in the price f sugar over the present one of 7.45 eaboard points. It was a matter of atriotism and loyalty for the com-anies to come through and make his price and take the chance that hey would be given a reasonable op-ortunity to make a fair dividend on oney invested.

As the Washington officials say: it now up to the farmers to show heir patriotism and loyalty with an ncrease production of sugar beets. There must be drastic need of sugar r they would never have asked the ugar companies to make an in-rease in the price at this time.

The labor situation is much better han a year ago according to those ho have been making a careful tudy of it. The land is in very uch better condition and should on he average raise 2 to 5 tons of beets ore per acre this year than last, be-ause of the fall plowing, able to lant earlier and other conditions.

Mr. James W. Jones sugar repre-entative for the department of agri-ulture said:

"It is my opinion that the announce-ent with reference to the increased rice of beets, will stimulate a consid-rable increase in beet acreage for his year. I have been out over the eegrowing areas almost constantly for weeks, and there is a splendid spirit shown on the part of the grow-ers. Through the farm bureaus, the growers have taken up the slogan for increased plantings which ought to mean that Utah this year will produce enough sugar to supply 2,500,000 sol-diers in the trenches for a whole year, in addition to producing enough sugar for the state's needs.

President D. D. McKay of the State Farm Bureau was very much pleased with the announcement of the $10.00 price, because he went to Washington some time ago and met with the sugar division of the Food Administration for the purpose of securing better prices for beets. He presented figures on cost production and other data to show why the price of sugar should be advanced so the factories could pay $10 per ton for beets. "I was given the assurance, when I was in the Washington conference that everything possible would be done to adjust matters so the growers would receive an increase in the price of beets. It will only mean a very moderate increase in the price of sugar to the consumers, and the fac-tories have already assured the food administration that whatever increase should be granted would be given to the growers. I am urging the beet growers to make a renewed effort to put in a generous increase in beet acreage this year. We must respond to our government's need for increased sugar."

S. O. S.

By A. C. Lunnen, Riverton, Utah.

We are continually hearing the S. O. S. cry of the U. S. Government to raise more sugar. What are we going to do about it? Are we going to an-swer the cry for help and raise more Beets? Or, are we going to treat it with indifference, and be called slackers?

The season of 1917 was a very poor season for the growing of sugar beets, partly on account of the late spring, partly on account of the heavy rains, which came after the beets were plant-ed and which packed the ground so the beets could not grow, and the labor question was a very serious one, on account of so many of our young men being called to the colors, to de-fend our rights on the sea, and the rights of our allies on land, and if we expect them to do effective work they must be fed.

Our Government has made some very extensive tests with different kinds of foods stuffs and has found that sugar has the greatest and quickest energy producing and sustaining qualities of any of the food stuffs now in general use. So considering the food qualities of sugar and the fact that it can be easily handled, trans-ported and shipped, our Government has called on we farmers to increase our beet acreage this season, so that we may have more sugar for home consumption, and more to send across the ocean to our warriors and their companions in the trenches; and to help our boys to win this great war, and bring back their trench-worn

(Continued on page 15)

Looking Backward

By J. W. Jones, Superintendent of Nephi Dry-Farm Experiment Station.

The agricultural development of Utah dates back to July 24, 1847. The early colonists settled on the choicest land in the state. They used the streams of the state for irrigating these lands. Irrigation made possible the permanent settlement of Utah. As the population increased the less desirable lands were brought into cultivation. Since 1900 dry-farm methods have reclaimed large sections of Utah. Under such conditions one would naturally expect us to get low-er acre yields of staple farm crops. But, do we?

In Table 1 is presented the acre-yields, acre value, price per bushel, by decades, for seven staple crops grown in Utah from 1876 to 1915 in-clusive. Each crop will be discussed separately in the following pages.

TABLE 1. YIELD ACRE-VALUE, AND PRICE PER BUSHEL, BY DE-CADES, OF STAPLE CROPS IN UTAH.

	Hay	Wheat	Corn	Oats	Barley	Potatoes	Rye
Average Yields in Tons or Bushels Per Acre.							
1876-85	1.30	18.0	23.3	25.1	22.3	96.0	10.2
1886-95	1.66	17.6	19.9	28.6	26.5	96.0	13.9
1896-05	2.89	23.4	23.8	36.5	34.4	139.0	16.3
1906-15	2.74	25.4	31.7	46.1	41.8	152.0	18.0
Averae Value of the Crops Per Acre.							
1876-85	8.15	14.76	17.94	11.80	13.83	46.08	6.94
1886-95	11.07	11.14	12.14	11.44	14.04	42.24	7.51
1896-05	18.76	15.91	15.71	15.70	17.89	61.16	9.29
1906-15	22.39	20.07	24.41	21.21	23.83	89.68	11.88
Average Value of Crops Per Bushel or Ton.							
1876-85	6.27	82	77	47	62	48	68
1886-95	6.67	65	61	40	53	44	54
1896-05	6.49	68	66	43	52	44	57
1906-15	8.17	79	77	46	57	59	66

Hay

The average yield of hay in Utah for the decade ending with 1885 was 1.30 tons per acre. During the next ten years there was a small increase in yield per acre; from 1895 to 1905 a rather marked increase occurred. The yield for the decades ending in 1905 and 1915 was more than double the yield for the decade ending with 1885.

The average price per ton increased nearly $2.00 between 1885 and 1915. The value of the hay crop was $8.15 per acre for the decade ending in 1885, and increased to $22.39 per acre for the decade ending with 1915.

Wheat

The lowest average wheat yield, 17.6 bushels per acre, was recorded for the decade ending in 1895. The highest average yield, 25.4 bushels per acre, was obtained for the decade ending in 1915. The last decade re-ported shows an increase of 7.4 bushels per acre over the first decade.

The average price per bushel was 82, 65, 68, and 79 cents, respectively, for the four decades 1876-1915. The decrease in price was probably due to over-production. The acre value was lowest, $11.14, for the decade end-ing in 1895. The highest acre value was $20.07 for the decade ending in 1915. The last period shows an in-crease of $5 per acre over the first period. This increase in acre value was due to increased acre production, rather than a rise in wheat prices.

Corn

The average yield of corn by de-cades for the past forty years, show that the highest average acre yield, 31.7 bushels, was obtained for the de-cade ending in 1915, and the lowest average yield, 19.9 bushels, for the de-cade ending in 1895. Corn yields have been increasing during the past twenty years.

The average price per bushel was 77 cents for the decades ending in 1885 and 1915. Lower average prices were paid between 1885 and 1905. The average acre value of corn has in-creased with increased yield. The highest average acre value was $24.41 for the decade ending in 1915. The lowest average acre value was $12.14 for the decade ending in 1895.

Oats

The average yields of oats for the decade ending in 1885 was 25.1 bushels per acre. During the next three de-cades substantial increases in yield were recorded for each period. The average yield of the last decade end-ing in 1915 was 21 bushels per acre more than the average yield of the decade ending in 1885.

Oats have decreased in value. The average price for oats for the decade ending in 1885 was 47 cents per bushel. The average price for the de-cade ending in 1915 was 46 cents per bushel. The two intermediate de-cades were very low in price, due un-doubtedly to surplus production throughout the country.

The acre value has increased from $11.44 for the decade ending in 1895, to $21.21 for the decade ending in 1915. The increased acre value was due to increased acre production, rather than a rise in oat prices.

Barley

There has been a marked increase in the average yield of barley for each decade, during the past forty years. The average barley yields for the de-cade ending in 1915 was 19.5 bushels above that of the decade ending in 1885.

The lowest average barley prices prevailed during he decade ending in 1905. Prices the following decade were better; however, they were still below those for the decade ending in 1885.

During the four decades, 1876-1915, the average acre value of barley has increased materially. The acre value for the decade ending in 1885 was $13.83, for the decade ending in 1915, $23.83, an average increase of $10 per acre. Increased acre production ac-counts for the increased acre value, for the price per bushel has de-creased.

Potatoes.

The average yields of potatoes for the decades ending in 1885 and 1895 was 96 bushels per acre. The two following decades show marked in-creases in the potato yield. The aver-age yield for the decade ending in

(Continued on page 7)

DAIRYING

EQUIP THE DAIRY

Those who have used good equipment in dairying know the value of it. They realize the advantages of having the proper facilities at hand to do the work.

Economy in dairying is very largely dependent upon the equipment of the dairyman. Satisfactory and satisfying equipment is necessary in any division of farming, and dairying being more exacting in most instances, is by no means an exception.

A convenient commodious dairy barn is the first consideration. The cows must have shelter; they must be cool in hot summer weather; warm in winter and protected from sudden changes of temperature; kept from flies, etc. Then the feeder and the milker must save labor and time, hence everything must be conveniently arranged.

The time has come when hands suitable for milkers are scarce and hard to get. Even when one gets satisfactory help it is likely to leave him or become ill or off duty for various reasons, perhaps at a very critical time. The milking machine is becoming more and more popular where there are a number of cows to be milked night and morning. Most of the former objections offered against milking machines have long since disappeared. In fact, progressive dairymen will not do without milking machines.

A good, easy-running, easily-cleaned, close-skimming cream separator is a necessity. Dairying would have more difficulties and less profits without a satisfactory separator. Whether one uses a small hand separator or a power machine will depend upon the number of cows kept and the preference of the dairyman. But wherever there are six or eight cows there should be a separator as an essential part of the dairy equipment.

Milk coolers are now almost a necessity for lowering the temperature of the milk as soon as possible after it is drawn from the cow. There are several types advertised and one may take his choice.

The churn has more to do with making good butter than is geneally thought. The labor and time taken to churn are not to be minimized but leaving them out of consideration for this discussion the type and mechanism of the churn means much to the butter. And do not forget that the requirements for butter these days are for more than a few years ago. Generally speaking the barrel type, or the box-type churn, is preferred, but there are others and some prefer them. The essential thing is a churn that will make good butter in a reasonable length of time with as little labor as possible.

Where one has a number of cows and considerable dairy products to market some kind of refrigeration will be indispensable. The kind used will depend upon the kind of products marketed, the distance from market, preference of the dairyman, etc. The milk house may be desirable or it may not be needed. Suffice it to say that the products must be taken care of economically.

There are other necessary or desirable utensils needed at the dairy. Among the number may be mentioned milk cans that will give service; sanitary milk pails, butter molds, ice cream freezers, Babcock tester, testing bottles, scales, cheese-making outfit, etc. The progressive dairyman should keep up with labor-saving, money-making equipment, through the columns of the farm press, and be anxious to invest in such equipment as will make profit.—Farm & Ranch.

CARE OF BREEDING BULLS

The fact that most aged bulls must be kept confined in the barn or paddock a large part of the time is reason sufficient why they should have comfortable quarters that are clean and well supplied with pure air and sunshine. The dairy farmer who invests a large sum of money in an improved sire to build up the milk producing qualities of his cows cannot expect him to bring about the desired results unless he gives him plenty of opportunity to prepetuate the good qualities he has inherited from his superior ancestry.

It is plain to see that most dairy farmers keep young, immature bulls simply because they lack conveniences to handle an aged animal or else are afraid to care for and lead him out when his services are needed. For this reason much of the good blood which might have been used to build up excellent dairy herds has been sacrificed through ignorance and neglect. From calfhood on the bull should be well fed, cared for and trained. Good care and proper handling will do much to combat the tendency to become cross and unruly. When about one year old he should have a ring put in his nose and as soon as the wound is healed, taught to be handled with a halter and staff. Always watch out for yourself and never permit a bull to get you in a tight place, for nearly all of the accidents with bulls might have been avoided if the man who was handling them had taken proper precautions to protect himself.

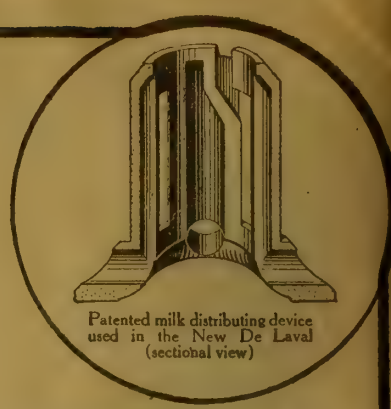
Exercise is one of the most important factors in the handling of breeding bulls, and more often neglected than any of the others. Any cross bull or one hard to manage can easily be quieted and easily handled if given plenty of exercise. With comfortable surroundings and means of working off his surplus energy he will be healthier and more potent, because of the enforced exercise. The mere fact that comfortable surroundings and plenty of exercise make bulls potent, kind and quiet means that more dairy farmers can keep old bulls that have proved their ability to beget high producing heifers. One of the most discouraging features of our dairy farming is the fact that so much good blood has been lost by selling some of the best bulls before their breeding qualities were known.

The bull should have an abundance of good, palatable food, and experience proves that such feeds as clover, alfalfa and mixed hay, wheat bran and ground oats make an ideal combination of food. Some corn silage may be fed along with the above feeds, but many of the leading breeders of dairy cattle prefer to feed roots or green feeds in place of corn silage. The impotency of many breeding bulls has been due to feeding excessive quantities of corn silage and not enough proteinaceous food.—W. M. K.

A LESSON FOR BREEDERS

A lesson that the breeder of pedigree stock must learn, if he is to succeed, attain distinction as a constructive breeder and realize the consequent financial reward, is that of properly growing and developing his stock. It has been my observation in all the years that I have given to the study of the work of breeders that the principal cause of failure on the part of those who engage in the business is the lack of judgment in the selection of breeding animals, more particularly in the selection of prepotent sires, and the failure properly to grow out and develop the produce of their herds. Many men who enter the ranks seem to assume that because an animal is pedigreed it should during development wax fat, grow strong and round into a desirable specimen at maturity on the subsistence that may be derived from a poormilking dam if not skimmilk, and the succulent feeds and shelter obtained from close contact with the barnyard strawstack. Men who follow such a program complain of a slackness of demand for their pedigree scrubs and conclude that "there is nothing in the business," and retire, firm in the conviction that he prices realized by breeders who are qualified for the business and who are doing real work in livestock improvement are fictitious.

Particularly striking evidence of the difference in the work and productions of different breeders is revealed by a study of the consignments in the average cattle sale, where the offering is drawn from numerous herds. One breeder will present a lot of nicely-fitted, well-grown animals that show at a glance that they are of good breeding, from desirable ancestry and nicely developed. Another man will come forward with a consignment of under-



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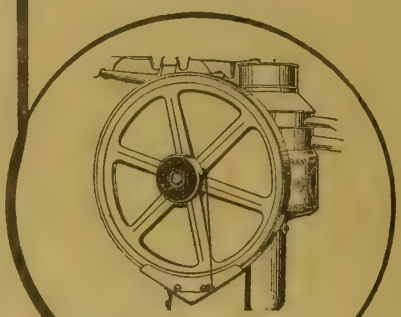

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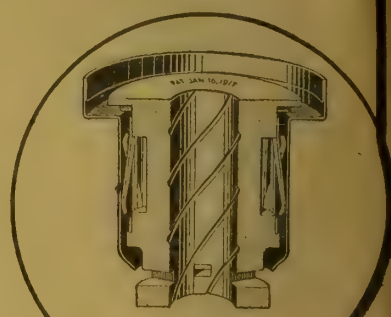

Cross-section of New De Laval self-oiling top spindle bearing

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sized, unattractive, scrubby-appearing beasts that nobody wants and no one should buy for breeding purposes. The breeder who presents his stock in pleasing condition, and has used care in his work as a breeder, receives good values for his stock, adds prestige to his herd because of the good impression thus made, makes a success of his business and the most of his opportunities, and is a valuable acquisition to the breed society with which he is affiliated. The other man's stock brings in every instance all that it is worth, but notwithstanding the fact that the cost of its keep was low he is kept busy trying to figure a profit which does not exist, and is sooner or later out of the business, satisfied that "there is nothing in the game." This is a correct conclusion for a man with so low a conception of a business which has in all its history attracted to it many of the master minds of the time.

It pays to do things right. It is one's duty to do one's best in any calling, and the policy pays good dividends in satisfaction and profits. A Shorthorn breeder in Ohio found this out, much to his satisfaction and profit. His success is an example worthy of emulation by beginners in the business, for what he has done others may do.

A few years ago T. F. Gordon, purchased a few Shorthorns for a herd foundation. He selected from the Maxwalton herd a bull named Nonesuch 2d, a son of Avondale. This bull proved to be an especially good sire, but Mr. Gordon evidently had not appreciated the advantage of giving his young stock the necessary care and attention properly to grow them out; he was apparently content to take what he could get for his bulls from the demand in his immediate neighborhood. A few years ago Reid Carpenter and his partner, P. G. Ross, visited the Gordon farm, and, noting the promise of the calves by Nonesuch 2d, advised Mr. Gordon to give them greater care, and to consign them to the state breeders' sale held in January each year. He decided to do it, and when the writer saw the three or four bulls by this sire at the sale in 1916 that were true in their lines and level, and displaying uniform substance, he concluded that Nonesuch 2d was a real sire, and he called Mr. Ross from across the ring and suggested that such a bull belonged in a large herd, where his possibilities for greater good to the breed would have greater scope. Mr. Ross agreed that he was a real sire, but doubted whether he could be bought, because his owner had begun to appreciate his value. The bulls sold from $400 to $780, which are profitable prices. In the 1917 sale Mr. Gordon was again in evidence with a few bulls by this sire. One of them, Baron Dale 2d, was the champion at that winter show, and sold in the auction for $2,250, and a number of others realized good values. This was accomplished by a man who was hardly known outside his district, and certainly not outside his state as a Shorthorn breeder. He was not taken advantage of any publicity to enhance his sales, but he did learn the lesson of what a good sire means in the breeding business, and the necessity of aiding the sire by properly growing out and developing his get. This is a difficult lesson for anyone to grasp, but it must be learned if one is to succeed in the business. With the aid that is being given the small breeder by the extension plan of the American Shorthorn Breeders' Association, and the markets that are developed and provided by the parent association and the state association shows and sales, it would seem that there should be every incentive on the part of breeders to do their best in production by the use of better sires and by the better development of the productions of their herds. If for no other reason, it should be done because it pays—Geo. E. Martin, in Breeders Gazete.

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"I am a milk machine.

"I ask only for proper food and care and I will produce rich, pure, sweet milk.

"The more care given me, the more and better milk I can and will produce. I want to do it because it is my life's work.

"Please remember, dear master, I must work twenty-four hours each day that I can produce milk, both night and morning. In order to produce the maximum efficiency, I must work under favorable conditions.

"I must have good food from rich pastures.

"I must have pure water and I must have plenty of fresh air. I must not be compelled to stand out in the rain or in the boiling hot sun.

"Please do not swear at me and do not strike me.

"I like to be petted often.

"Kind words also will help make me happy and contented."

THE SHEEP AS A MORTGAGE LIFTER

The hog has for many years been known as a mortgage lifter, and has lifed many mortgages off the burdened farmer, or at least helped to lift many. But it seems as though some men seem to look upon the sheep as a small matter, and think they cannot raise sheep as easily as they can hogs or cattle. This, however, I think is a mistake. My experience is that sheep raising is just as profitable as hog raising, if not more so.

I think that sheep are just as good mortgage lifters as hogs, if not better than hogs. Considering the trouble and risk and the cost of feeding the two I am led to believe that a good flock of sheep will return a greater net profit to the farmer than the same amount of money invested in hogs.

There are always heavy expenses to be met through the winter season, and the sheep comes along in the summer and fall and contributes the spring lamb for the farmer to have to help bridge him through the winter, and then in the spring of the year when the farmer is usually short of money from his winter expenses, the sheep is ready with its fleece of wool to help him out and give him relief. He is usually wanting to buy some good seed, or perhaps some new implement for the farm, and his crop of wool is always ready to pay the bills with—perhaps some money left for surplus.

Also I find that when I am raising early lambs they come in just at the right time to help the farmer when he is, perhaps in need of money, and the best part of the early lambs is the profit that is to be made from raising them. I have found it very profitable, as the market is always good for such stuff as lambs in the early spring.

After the farmer has used his surplus money in the spring for needed supplies, and is running short in the summer and is in need of money for repairing fences and the like in the fall or for making some necessary improvement to his home, or perhaps has to make a payment on his farm if he is in debt for it, the crop of spring lambs will always help him through the hard times, and he will feed better able to go though the next winter.

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UNITED STATES

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THE HANDLE'S OWN WEIGHT, as it comes gradually down to "A," puts the Bowl into rapid motion. It requires but slight ADDITIONAL POWER to bring bowl to full speed.

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The only Separator that starts the easy way—by "pumping"—which means pressing downward on crank for a quarter turn, then bringing crank back to starting point, repeating several times, before making full turns. In getting up momentum DOWNWARD PRESSURE IS EASIER THAN UPWARD LIFT.

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Also, I find that if the winters are not too severe and one has good quarters for the sheep they may be shorn again in the fall, and the wool always comes in good time to use for winter's supplies.

After the profit in dollars and cents in the farmer's pocket is considered the next thing that should be taken into consideration is the improvement of the land, for without good land it is impossible to grow good paying crops of any kind. The success of any farmer depends on the productive capacity of the soil he tills. If he manages his land right and keeps it up to a high state of ferility and grows the right kind of crops and stock, and also is a good farmer himself, he need not fear making a failure, as under such conditions success is almost sure to follow.

I have found from my years of experience in raising sheep that there is no better way of improving the soil than the raising and feeding of sheep upon the farm. The manure from the sheep is richer in fertility than that of most any other stock, and the beauty of pasturing sheep is that they will clean up almost all kinds of growth and will distribute the manure evenly over the soil. This is where sheep are better in one way than other stock.

You can go through a field where cattle run and you will find small spots all over the field where the grass is perhaps twice as large as it is in other places. This is caused by the manure being dropped in piles by the cattle or horses; and where the manure is in piles the soil cannot get the full value of it for some time, whereas if it has been dropped by sheep it has been more evenly distributed, and consequently more ground has been covered and you have realized more benefit.

I have a piece of land that I bought which lay adjoining my farm. I bought it seven years ago, and it was very poor at that time, and had several very large gullies. I just plowed down these gullies, and the first year put peas on it and pastured down what there was with my sheep. I have since practiced pasturing sheep and raising some leguminous crop, and now this worn gully soil is yielding good crops and sheep pasture.

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solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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RENEWALS

Many of our readers have received a letter from this office asking for a renewal of their subscription.

There never was a time when a good farm paper will be more valuable to the farmer than right now. It is the best money he can spend.

Our government recognizes the help of farm papers in winning this war and are assisting us in every way to help the farmer.

We will appreciate a prompt reply to the letter sent you.

JAMES M. KIRKHAM,
Manager.

Last summer, you decided to top-graft that apple tree and make it yield a more desirable variety of apples. Now is the time to mix up the grafting wax and do the job. It is not difficult and does not take long to do the grafting.

OUR HOUR OF TRIAL

Now is the hour of our testing.

We must save, serve and sacrifice.

If we are selfish or even careless, we are disloyal; we are the enemy at home!

"Food Will Win the War!" Whose food German or American? The world awaits your answer.

We must save, serve and sacrifice.

Some of those ditch laterals are harboring the larvaue of destructive pests. Try plowing them out and re-set the laterals. Some times, destructive grasshopper and other pests have been averted by destroying these breeding places. Many farms have a hedge of willows and much waste land along the ditches and in the division fences. This is a good time to eliminate waste patches and also eliminate the pest risks.

Does the collar fit the young colt that is doing its first work this spring? It is bad for a mature horse to work in a collar that does not properly fit; it is much worse for the young colt for its shoulders are not seasoned. After the collar has been properly fitted, see that the hames are balanced against the collar. Many sore shoulders are caused by allowing the draft to come against the point of the shoulder. Take a few minutes to study and adjust this very vital part of the horse's work. Too many horses are seriously hampered and punished by neglect to have the collar and hames fitted.

FORCING IDLERS TO WORK

For a long time we have felt there ought to be something done to make the idler work. There is productive work that they can do and should be made to do it. Other states have laws that compel the idler to work or find another place to live. These rules and laws are accomplishing results, why not have a simular law in Utah. Dr. E. G. Gowans, State Superintendent of Schools, has just returned from an eastern trip and made some investigations about compulsory work laws. In Utah, he is convinced such a law would be the means of compelling hundreds of persons to work who are now what he calls "parasites who are impeding the government in the winning of the war, since they eat, but do not produce food.

HAVE YOU WORKED YOUR FALL PLOWED LAND YET THIS SPRING?

If not, you are liable to find your moisture gone and irrigation will need to be applied earlier. Last week, we found many farmers in the fields using first their float or leveler which did double duty in leveling the soil and also crushing clods and otherwise preparing the seed bed. Let the harrow follow. On some soils, the spring tooth will be the tool most needed and then we found the acme or blade harrow doing excellent work. It is a splendid tool to put the soil in good tilth. In any event, don't allow the field to lie untouched or there will soon be cracks, which allow the moisture to escape and then there will be forbidding clods that will bother seriously.

SCIENTIFIC FARMING

Germany has taught the world what it means to have all her industries closely tied up with the latest discoveries of science. They have shown that an area about equal to the State of Montana can be practically self-sustaining and can stand off the armies of the world. It would have been impossible for them to do this if they had been guessing. Instead of this they knew exactly what every acre of land was capable of producing and what methods to follow in order to insure maximum production. Their experiment stations have for years been given the support necessary to enable them to discover the best ways of handling their soils and the crops best adapted to them. It now seems time that the rest of the world wake up to what science can accomplish and give every aid to scientific discovery, especially in its relations to agriculture.

WHEAT, SWEET, AND MEAT.

The call continues for the farmers to do their utmost to produce the foods necessary to carry on the war successfully. Some foods are plentiful, others are scarce, some can be transported to the war zone, others must be consumed at home. Wheat is necessary for bread for our soldiers and allies.

Several large wheat producing areas are shut off on account of the battle lines and because of transportation difficulties. This means that the United States will have to furnish more than ever of the wheat used by western Europe. The same condition is met with sugar and meat. It is useless to send our sons to be butchered on the battlefields of Europe unless we are able to provision them. It is necessary, therefore, for the farmers of the country to continue their loyal work of producing as much as possible.

THE THIRD LIBERTY LOAN

The campaign to raise money to continue the war is again on. This time it is for the third sale of Liberty Bonds. War is an expensive business, but it is not so expensive as peace would be if we were under the yoke of tyranny. We are now in the war all over, and there is no getting out except through victory. If we fail to achieve this, all the struggles of our forefathers to gain liberty will have been made in vain. We shall be compelled to return to a bondage that would be almost worst than death. We simply cannot allow our enemies to be victorious and thereby allow the cause of democracy to be overthrown. In order for the country to play its part in the war, it must have great sums of money, which it must borrow from its citizens. The farmers of the country should come forward and buy bonds liberally. They should be the chief support of the nation in this, as in other matters.

TEN DOLLAR BEETS

The announcement regarding $10.00 per ton for beets should cause every grower to "go the limit" for beets this spring. Not every state can render such a definite helpful service to our Government in these war stress days as can Utah, Idaho and other of our sugar beet growing states. Sugar carries a minimum freight rate and can go to any part of the battle front and it is so badly needed as a war time food that every grower may feel that he is adding real, genuine, definite credit to his commonwealth when he is growing the limit of sugar beet acreage and then, after determining upon the acreage, make sure that a maximum yield shall be had. It is evident that the factories have taken a broad view of the question and mean to offer their factories and operating capital for the benefit of our Government requirements. This is a time when crops have equally as important place in our war program as have the ammunition factories. Every farm is a factory, in fact, let's turn out our maximum yields of the most needed crops.

HOLD THE MOISTURE

Sugar beets must be planted only one or one and one-half inches deep. That means that the moisture must be kept near the surface. Beet fields that are not fall plowed need careful attention. Just ahead of the turning plow, run the disc. Set so the surface will be stirred. This will reduce the amount of clods that go into the bottom of the furrows. It will much more than repay the extra effort and the results will be in evidence all season long.

Not very many farmers neglect to run the harrow immediately following the turning plow but now and then, some one gets careless and this is the year when every one must make every acre count for we need maximum yields. Beets are a crop that especially need to have the surface moisture conserved. It is dangerous to set the drill deep enough to "go down" to moisture. Keep the surface soil worked so the moisture will be conserved where the beet seed must be planted, very shallow. Then, too, the same care in conserving moisture and making a good seed bed will also pay, no matter what crop is to be planted. Don't depend upon late rains to help out. They may not come.

GET MANURE OUT NOW

Last year every farmer responded to the call for increased production. Every available acre of land was used in an effort to supply the needs of our country and our allies. This year still a greater increase in the production of food stuffs is necessary, and from the past record of the American farmer we are satisfied that he will again respond to the call of his country for still greater production.

In this effort to raise more and better crops the farmer should not overlook the importance of barnyard manure, which is one of the resources which many of the farmers of the past in Utah have failed to recognize. Many experiments have been conducted throughout the United States and foreign countries and all investigators are unanimous in their conclusions that barnyard manure will increase the yield of crops. The time has arrived when the manure must be put on the land if it is going to aid in the campaign for increased food production this year. A final effort should be made by every farmer to get any manure he has on his place on the land at once, when it is needed as it has never been before.

Utah's Experimenters In Agriculture

Franklin Lorenzo West.

Dr. F. L. West, physicist for the Utah Experiment Station and professor of physics for the Utah Agricultural College, was born at Ogden not quite thirty-four years ago. As his father was a civil engineer, young West early learned to perform many tasks connected with that vocation. Here he had first-hand contact with the out-door world in summer. Meantime he was studying hard in winter.

He did his college work at the Utah College of Agriculture. He took a leading part in athletics, which at that time, received no encouragement from the faculty. West and several other young men kept the spirit alive and yet made splendid scholarship records. Social, athletic, and student life at the College gave intimate knowledge of people which activities undoubtedly did much toward making of him the diplomatic leader of men he has since become.

Taking this B. S. degree from the Utah College in the spring of 1904, West entered the Leland Stanford University the same fall. Next winter found him at the B. Y. U. as professor of physics. In the summer of 1906 he was awarded a graduate fellowship at the University of Chicago where he studied chemistry and physics for a year. During the next year, 1907-8, he was assistant professor of chemistry at the U. A. C. Since 1908 he has been professor of physics at the Agricultural College, in addition to which he has held other positions of responsibility. Having an unquenchable thirst for higher education, Professor West returned to the University of Chicago in the spring in 1910, as graduate student and as lecture assistant to the renowned Dr. Milikan. A little over a year later, in the fall of 1911, the doctor's degree in physics and chemistry was earned and conferred on him.

Returning to the U. A. C. that fall, Dr. West took up his work not only as professor of physics but also as director of the School of General Science, both of which positions he has held ever since. He has also served several years on the athletic council of the College, doing more than any other one person—unless Professor Byron Cummings of the University of Utah be excepted—to make college athletics clean and sane. Whenever really important committee work was to be done, Dr. West was usually a member of the committee. Just now he is one of the two members from the U. A. C. in the council of the Utah Educational Association. He is also a member of the Logan School Board, a fellow in the Utah Academy of Science, and a member of the honorary scientific society of America Sigma Xi, to which he was elected at the University of Chicago in 1911. Electrical troubles about the College are all eventually referred to Dr. West. Besides this, he has for several years assisted with engineering work, largely in advisory capacities, his practical mathematical ability making him more than ordinarily valuable in this respect. Yet withall he is the most sincerely modest man on the College campus.

His research work has been largely in regard to frost action on fruit buds and protection against such injury. Smudging was thought to protect orchards, but Dr. West wondered why orchards should be planted where smudging was a necessary expense. Cache Valley was surveyed, and strips found where it was safe to plant, and others where it was not. This naturally led to investigations regarding the freezing of fruit buds. Water vapor was thought to protect buds, but proved to injure them. Knowledge as regards bud freezing in America, at least, was not definite. Individual buds, whole branches, and entire trees were frozen. An original device for freezing a whole tree was perfected. It soon became apparent that freezing did not take place instantly but began about 28 degrees F. and increased gradually as temperature decreased to 23 degrees F. or 24 degrees F. It was also found that smudging was likely to be inefficient in winds or in driving storms , and that the cost of fruit was increased too much to make smudging profitable unless the weather was calm and unless the selling price was much higher than ordinary. Moreover it was found that most fruit can stand two or three freezes and still have buds enough for a good crop. Further studies showed that mists of smoke, carbon dioxide and warm water did not protect buds measurably. In summary, smudging is of doubtful value in Utah.

Dr. West has four important publications: three Utah Station bulletins and his doctor's thesis which was published in the Journal of Physical Chemistry. Dr. West has received requests for his bulletins from Japan and from the Royal Meterological society of London. The chief of the U. S. Weather Bureau has commented favorably on the work and a few weeks back the Dean of the Texas School of Agriculture requested copies enough to serve as text material for his class in horticulture. The bulletins are used by orchardists in every important fruit area of the United States and Canada.

Dr. West's work has attracted this considerable attention partly because it was new and partly because it was original and struck home. It counts the country over for safer fruit growing.

FRANCE AGAIN TIGHTENS HER BELT

New French food regulations effective February 25 contain these restrictions necessary to conserve the limited supply of food. Public eating places are forbidden to serve sugar, but customers may bring their own supply. The making of pastries, biscuits and confectionery is prohibited. All grain which may be used for making bread is reserved for human food. Bread served at meals in public eating places is limited to about 3½ ounces per meal.

There are severe restrictions on the consumption of dairy products of all kinds, especially butter, cheese and cream.

LOOKING BACKWARD

(Continued from page 3)

1915 was 152 bushels per acre.

The average price per bushel for the decade ending in 1885 was 48 cents, and for the decade ending in 1915, 59 cents per bushel. The average acre value of potatoes increased from $52.24 for the decade ending in 1895, to $89.68 for the decade ending in 1915. This marked increase in acre value was largely due to increased yields.

Rye

The past four decades (1876-1915) show hat rye yields have increased materially during each period. For the decade ending in 1915 the average acre yield was 18.0 bushels, for the decade ending in 1885, 10.2 bushels; an average gain of 7.8 bushels per acre.

There was a decrease in average price per bushel for each succeeding decade, if we use the first decade as a basis. The difference in average price was small between the decade ending in 1885 and the decade ending in 1915.

The average acre value of rye has increased with each decade. The first decade gave an average acre value of $6.94, while the last decade recorded shows an average acre value of 11.88. Increased acre yields are again responsible for the increased acre values.

Crop yields, in general, when averaged by decades, have increased during the past forty years. The most rapid increase in yield for most of the staple crops occurred during the past 10-year period.

Crop prices were lowest for the decade ending in 1895. Acre values were highest for all crops during the decade ending in 1915. This increased acre value, except for hay, is a direct result of higher yields, rather than a rise in price of farm crops.

There are five possible ways in which to account for these increased acre yields: (1) Water and manure are being used to better advantage than formerly; (2) better cultural methods are being used; (3) superior varieties and better seed are being used; (4) impoved machinery increases yields; and (5) or more intelligent class of farmers is operating the farms today than forty years ago.

Send your orders for Butter Wrappers today to the Utah Farmer.

Plant More Corn and Wheat

We can supply **Recleaned** Stocks of MARQUIS, DICKLOW, NEW ZEALAND, SONORA, and NINETY-DAY WHEAT.

Utah grown Yellow Dent and White Flint CORN. Any quantity you need.

Write, wire or phone for prices.

BAILEY & SONS CO.

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SALT LAKE

The Perfect Lubricant

The more people know about correct lubrication, the more they appreciate the superiority of

VICO Motor Oil

—for automobiles operated in this western country. Clean out your crank-case, refill with VICO—then note the difference in favor of VICO. Light, medium, heavy, "Every drop counts."

Utah Oil Refining Co.

Salt Lake City, Utah.

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this root crop to supply an essential food for both soldiers and civilians. The world is crying for sugar do your part towards supplying this demand.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

HOME

INSTEAD OF MEAT

CHEESE MILK BEANS
PEAS EGGS CEREALS
NUTS

These make appetizing dishes to take the place of meat. Why not use them oftener? There are plenty of good ways of cooking them

They give you a body-building material, the protein, and they give a lot of it.

The child to grow must have food that furnishes this kind of material. You need it too. Even if you are grown up, you must have it to renew parts of your body used up by work and exercise.

Don't think you have to eat meat to get this protein. These other foods have it, too. Take cottage cheese, for example. It is richer in this material than meat. You can eat a third of a cup of it with pleasure, and this third of a cup will give you as much of the protein as a quarter of a pound of sirloin steak—a good, generous serving. Or if you like baked beans, eat a cupful to give you the same amount of protein.

Peas, Beans, Peanuts, Cereals.

These are cheaper than meats and good. They should be used, but eat some milk or cheese besides.

Kidney Bean Stew.

1½ cups dried kidney or other beans, 2 cups canned tomatoes, ½ cup rice, 2 tablespoons flour, 1 onion, 1 tablespoon salt.

Wash the beans, put in covered kettle, and soak over night in two quarts of cold water. Cook the beans slowly in the water in which they soaked. If necessary, add more water to cover and continue the cooking until they are nearly tender, usually about two hours. Wash the rice, cut up the onion and add with the tomatoes to the beans. Cook until rice is tender—about 30 minutes. Mix the flour with a little cold water and stir in carefully to thicken. A small piece of salt pork cut up in cubes and added to the beans at the beginning of the cooking gives a pleasant flavor to the dish.

This stew will make a whole meal in itself with bread and butter and fruit for dessert, to serve five or six people.

Pea Souffle.

4 tablespoons flour, 4 tablespoons fat, 1 cup skim milk, 1 cup mashed cooked peas, (any kind), 3 eggs 1 teaspoon salt, ¼ teaspoon pepper, few drops of onion juice.

Make a white sauce from flour, fat and milk, as in preceding recipe. Mash the cooked peas to a pulp. Beat white and yolks of eggs separately. Mix vegetable pulp, seasonings, sauce and well-beaten yolks. Fold in stiffly-beaten whites, put in greased baking dish and bake in slow oven until firm. Lima beans, split peas, cowpeas, or fresh or canned peas may be used.

Cheese, Milk, Eggs, Meat.

These give body-building material in a little better form than the plant foods do.

Creamed Peanuts and Rice.

1 cup rice (uncooked), 2 cups chopped peanuts, ½ teaspoon paprika, 2 teaspoons salt.

White Sauce

3 tablespoons flour, 3 tablespoons fat, 3 cups milk (whole or skim).

Boil rice. Make white sauce by mixing flour in melted fat and mixing with milk. Stir over fire until it thickens. Mix rice, peanuts and seasoning with sauce, place in greased baking dish and bake for 20 minutes.

Calcutta Rice.

2 cups rice, 2 cups tomatoes, ½ pound cheese 1 tablespoon salt.

Peppers and celery or onions may be added if desired.

Boil rice Mix it with tomatoes, grated cheese and seasonings, and pour into baking dish. Bake half an hour. If peppers or celery are used, cup up and boil with the rice.

All of these four dishes except the pea souffle have as much building material, protein, as a pound and a quarter of solid meat. The pea souffle furnishes only about half as much protein, but is very good instead of meat at a lighter meal.

Cheese is a fine meat saver. There is a great deal of food in a little piece of it. Don't eat it at the end of a meal when you have already had enough. You would not eat a piece of meat then. An inch cube of American cheese contains a third more protein than the same sized piece of lean meat. Cheese is excellent food if eaten at the right time.

Use These Good Meat Savers.

Cottage cheese is a delicious and easy dish. You can buy it from almost any milkman or you can make it yourself. Add salt and pepper before eating, and if you prefer it more moist, stir in a little milk. It is good, too served with applebutter, or a bit of jelly. While this is more of a dessert, it can still lessen the amount of meat you eat.

To make cottage cheese warm sour milk, whole or skimmed, on the back of the stove or put a bowl of it in a pan of hot not boiling, water for about 20 minutes. Stir occasionally. When the curd and whey have separated, pour off the whey through a sieve. Work the curd with a spoon and let it drain. When fairly dry work again until smooth. The whey is good to use in making bread.

Nuts are concentrated foods, too. Twenty single peanuts are about the same as the inch cube of cheese. Remember that nuts are good food. Chew them thoroughly or grind them up for a cooked dish and eat them as an important part of your meal.

Save Meat and Money.

OATMEAL IN VICTORY BREADS

In the list of wheat substitutes posted at the grocers, cornmeal oatmeal and barley flour represent the big grain crops of America, and with the clearing up of transportation they should be available in most localities.

As a wheat substitute oatmeal possesses several advantages. It can be obtained easily and if bought in bulk is not much higher in price than flour. Rolled oats or oatmeal will absorb more water than wheat flour and retain it longer. For this reason oatmeal bread keeps fresh longer than wheat bread. The oatmeal loaf has a greater nutritive value than even the straight wheat loaf, and its sweet, nutty taste commands instant favor.

Sandwiches of oatmeal bread and butter need no addition of meat to please the children. A few hickory nuts or walnut meats added convert oatmeal bread into a special treat.

Oatmeal Bread.

1 quart water, 1 or 2 cakes compressed yeast or ½ cake dry yeast, 4 teaspoons salt, 2 tablespoons molasses, 3 cups rolled oats, 8 cups wheat bour.

Mix as follows: Soften the yeast in ½ cup of the water (lukewarm). Heat the rest to boiling, then stir in the rolled oats. Let it boil up once. Cool, add the salt and syrup, and when lukewarm add the softened yeast. Then add the flour to make a stiff dough. Mix and knead thoroughly. Let rise 3½ hours or until double in bulk. Knead or cut down the dough, add the remaining flour and let rise again until double in bulk (about 1½ hours). Shape into loaves. Let rise in pans until double in bulk. Bake 50 minutes to one hour.

If dry yeast is used make a sponge as follows: Soften the yeast in ¼ cup water. Heat the rest to boiling. Stir in the rolled oats and boil up once. Cool, add the softened yeast and one cup of flour. Beat well and let rise over night.

Oatmeal Muffins.

1 cake yeast, ¼ cup lukewarm water, 2 tablespoons syrup, 2 tablespoons fat, 1 cup hot milk, 1 cup rolled oats, ½ cup whole wheat flour, ½ cup sifted white flour.

Boil oats and fat in milk one minute. Let stand until lukewarm. Soften yeast in lukewarm water and add syrup. Combine the two mixtures. Add flour and salt, and beat well. The batter should be thick enough to drop heavily from the spoon. Cover and let rise until light, about one hour, in a moderately warm place. Fill well-greased muffin pans two-thirds full. Let rise about 40 minutes. Bake 25 minutes in a moderately hot oven.

SHALL WE VOW AGAINST VEAL?

J. L. Tormey.

Many fanatics have in mind the passing of laws to prohibit the slaughter of calves and from many sources a cry is raised about the farmer who sells the calves. Why not pass the buck along and condemn the packer who is uncouth enough to kill them, and the consumer who is cannibalistic enough to eat them. I remember reading in a St. Paul daily last fall, an able (?) editorial by some fluent writer about the crime of eating baby beef. This writer admitted that it would be folly to save the unpromising calves until maturity, but proclaimed loudly against producing the baby beef animal.

Experience has demonstrated that the calf raised on high-priced land can better be made into a one thousand pound baby beef than kept longer principally because the young animal is a better conserver of feed. The older the animal becomes, the more costly the gains, because it takes more feed to make the same amount of human food.

The facts, however, from reliable sources show that:

County agents and others have been very instrumental in saving calves the last year or two. (This would not be possible, though, if it didn't look profitable to those who buy calves). There is at the present time a great demand for breeding calves of good stock—both beef and dairy calves.

Packing house men state that the past summer there were fewer heifer calves worth saving slaughtered than in previous years.

Poor calves—that is, those which would not develop into either good cows or good beef animals—are being marketed, and it is the logical thing to do. They would be food wasters.

In general the two classes of farmers or stockmen who raise most of the calves in the country are

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We can offer you a substantial saving on any furniture you may need. We can fit your needs from cellar to garret and save you big money. We do not publish a catalogue—

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Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
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Standard Sewing Machines

Sold on easy payments by mail.
We repair any make machine.
Guaranteed Drop Head Machines $8.00 and up
All standard makes handled. Write us your wants.

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Scissors sharpner fits any sewing machine free upon request.
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LUMBER-POSTS SHINGLES
Write for prices
G. R. KIRK COMPANY
Box 1138-X, Tacoma, Wash.

When you answer the advertisements always mention the Utah Farmer.

airymen and producers of beef cattle. Let us first take the case of the rofessional dairyman who is in the usiness of producing milk. Say this an is milking twenty-five head of ows, which represents the capacity his farm. He is a producer of huan food of a high order—milk. hould he save all his calves he ould have to sell some of his cows, hus cutting down the milk supply r human consumption, and raising e price of milk, just to raise an anial that would furnish more leather, t not much human food. This ould mean a financial loss to the an raising the calf, and loss to the orld's supply of food.

The beef cattle producer generally as things arranged to raise all the ood calves he possibly can. He is ow doing so and being more careful f them than he has ever been before.

Obviously, a man will do one of two hings where he is crowded for feed nd room—sell the cows or sell the oung stuff, and for the producers of eef, it is better for all concerned o pass the young stock along to men ho are in the fattening or finishing usiness. There has been a clamor or breeding cattle of late and good eef calves of both sexes are at a remium in the country. The fear in any sections is not that too many alves have been sold, but that the upply of feed is inadequate to suport properly what stock we have aved in the country.

Which will you do? Eat veal, or aste human food to produce anials that are a financial loss to the roducer? Or would you refuse to onsume the veal, eliminate the maret for calves, and thus necessitate he selling of cows which produce hree to four times as much human ood from the same raw material at profit to the producer, just to get eat produced at a loss of feed and oney and a hide worth $15.

SAVE OR STARVE.

From now until next harvest watch our grocery list or there will be no roceries to list.

The man who grows more food adds o the wealth of the world; the man ho grows dollars may be adding only o his own wealth.

MUSHROOM DIVIDENDS

re Very Popular Now As Enticing Bait With Which To Hook the Unwary Investors.

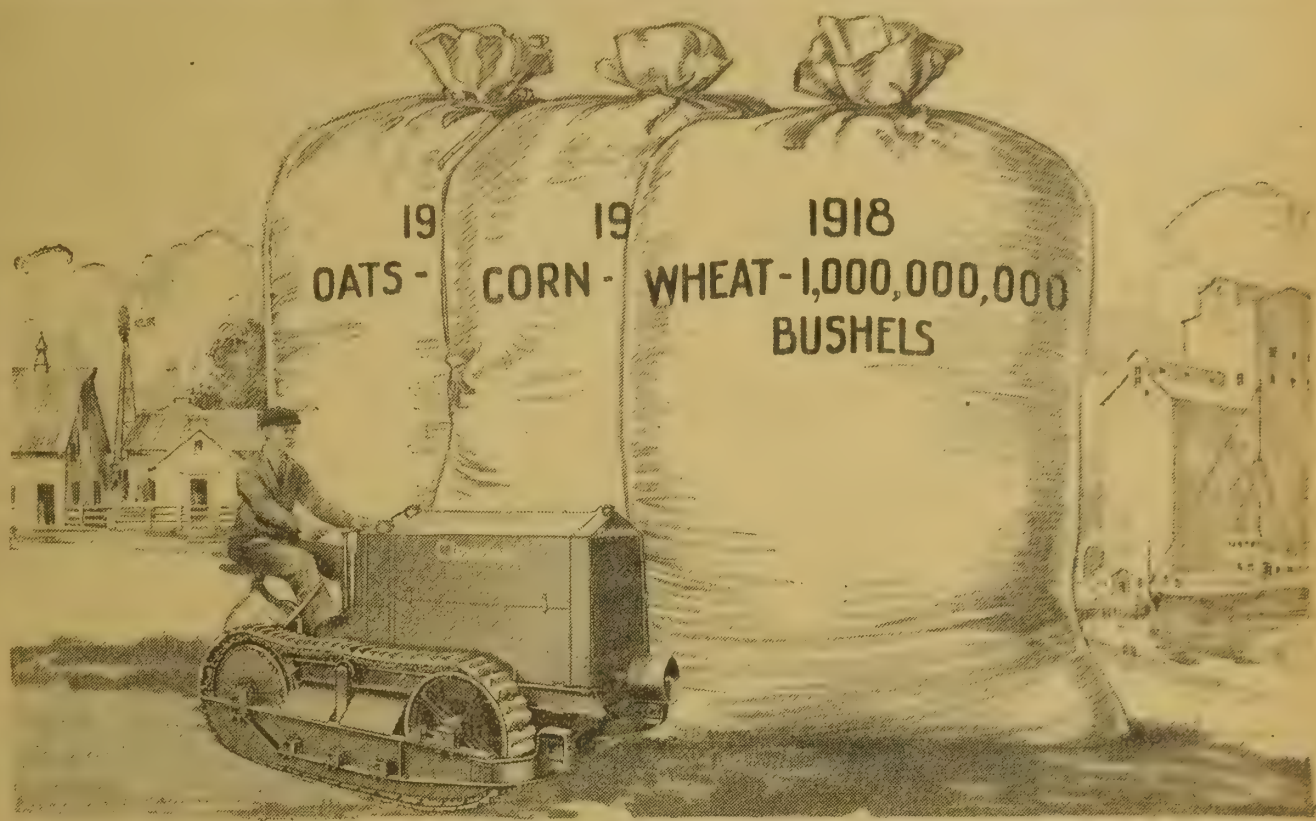
Evidence crops up on all sides to ndicate that a most flourishing conition prevails in the Get-Rich-Quick ndustry. The mails are jammed with constant stream of literature, carryng wealth-making opportunities, rospectuses highly illuminated with hotographs and write-ups in the richst language come unbidden but cryng forth that they are the chance of ll chances for the recipient to unhackle himself from penury and take is place in the blue list of the comortable well-to-do who spend their ime thinking up schemes on how to pend their money in luxurious ease.

To believe the writers of these ffusions it is no longer necessary to ork when fortunes are within reach s they provide them. The countless Dear Friend" letters which pour in pon the investors from every direcion must make the stranger feel the eriod of Utopia has been finally atained, for the whole world appears o want to include everyone within he charmed circle of wealth providing pportunities. It must be so when en who never met other men in their fe and would not know them from dam if they passed them on the treet, are willing to let them share n investments which they say will nultiply by hundreds, and in some ases by the thousands, for every dolar put into them. In the advertising olumns of such newspapers that care ot what advertising they accept but refer to fill their coffers with dollars though they carry the taint of crookedness, appear similar bids for the capital of their readers and the percontage of promised profits and dividends is sufficient to meet the different grades of greed of credulous investors.

For the multiplicity of get-rich-quick offerings the public is alone to blame. Were the people not biting with avidity at these night blooming investment cereuses they could not exist. It is evident that, despite all the past educational efforts to warn the people of the real unsoundness of all these schemes and the frail moral characters behind them. Americans have not acquired that degree of wisdom which would guard them against becoming victims.

The most enticing bait the get-rich-quickster now employs very much to his financial advantage is the payment of mushroom dividends during the period when he is selling the stock of his enterprise. Companies but recently organized and not more than a few months old, disburse dividends which corporations with years of established reputation and stability of earnings behind them find impossible to pay, but the investor does not stop to inquire the reason why the one can start dividends in so short a time when the other cannot, though doing a much larger business. Probably if the investor were to take the precaution to investigate carefully it would not take him long to discover that these dividends are coming out of the capital account and will cease just as soon as the promoters have secured a portion of the cache and can no longer sell stock. The dividend, therefore, that he is receiving is coming out of his own pocket.

We can safely prophesy that not one out of every hundred of the new oil enterprises now declaring they are disbursing dividends at rates anywhere between twelve to twenty-four per cent per annum will continue them after the stock selling period is over. As it seems that the people will never awake to their danger it is high time for the Government to step in and use all of its energy to curb the Get-Rich-Quick evil of the present time, which is of much larger proportions now than it has ever previously attained in the history of the nation. It is impossible to estimate accurately how much money they are draining from the legitimate arteries of the country but measured by the numerous individuals and corporations engaged in this nefarious practice, it must reach into many millions of dollars.—The Financial World.



The Task Before the Nation's Farmers

One billion bushels of wheat must be produced in this country this year.

An enormous increase in the yield of corn and oats is necessary.

Thousands of extra acres must be cultivated. Each individual farmer must produce about one-third more grain than last year.

The task before the nation's farmers is stupendous. Intensive methods of every kind must be employed. Machinery must take the place of muscle wherever possible.

In the face of this emergency the Cleveland Tractor becomes an absolute necessity. Its tremendous value to the farmer is emphasized more than ever.

Cleveland Tractor

The Cleveland Tractor not only conserves time and labor—it does far *cheaper* and *better* work. And by doing better work it makes possible the production of larger and better crops—enabling you to do your part for the government—*and make more money for yourself.*

The Cleveland Tractor shows the way. It plows 3½ miles an hour—8 to 10 acres a day. It travels on its own tracks like the great "tanks" of Europe. It will go practically anywhere—through ditches, gumbo, sand and gravel. It is steered by the power of its own engine—simply and easily, and will turn completely around in a twelve-foot circle.

It will not pack the soil, will not mire, will not slip or flounder. It has 600 square inches of traction surface. The track is designed for long service. The sections are constructed to prevent filling or packing with mud, and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings. The Cleveland weighs less than 3200 pounds. It can be housed in less space than is required for one horse.

The Cleveland develops 12 h. p. at the drawbar for hauling and gives 20 h. p. at the pulley belt—plenty for stationary work of all kinds.

But in spite of its unusual power, the Cleveland is small and can readily be used in orchards and under and among small fruit trees.

Rollin H. White, the famous motor truck engineer, designed the Cleveland Tractor. He has used only the best materials. Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those of the finest trucks.

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THE CLEVELAND TRACTOR COMPANY, Dept. AO, Cleveland, Ohio, U. S. A.

More Sugar Beets for Utah

By Geo. Stewart, Assistant Professorof Agronomy, Utah Agricultural College. (Given before the joint conference of the agricultural, livestock, engineering and irrigation societies ofIdaho, January 14, 1918).

To increase the production of sugar beets is our solemn duty. The great reason for this is that Britain, France, and Italy are on a starvation ration of sugar. Our importations from Cuba, Hawaii, and the Phillippines make our supply up to about the quantity we use normally, that is about eighty pounds to each person. Out of this usual supply, however, the United States must ship to her allies in Europe. During 1918, Italy will need 115,000 tons in addition to her visible supply; France will require 240,000 tons; and Britain must obtain 1,400,000 tons to avoid suffering.

America Must Supply Allies.

France normally was a heavy producer before the war, but nearly all of her factories lay in the regions overrun by the Germans. Though Russia also lost many factories in Poland, she yet has most of hers. With both Baltic and Black Seas closed, Russion sugar, even if there were an excess—cannot reach Italy, France, or England. The great Java cane sugar supply must lie where it is for want of ships on which to move it. The only other great producers of sugar are India, Austria, and Germany. Because consumption in India equals production, there is no hope of relief from that source. It is of course unnecessary even to say that the Central Powers are hoping to gain a victory by cutting off Britain's sugar, along with other supplies. Thus it stands; any relief from sugar shortage must come from America.

American Supply Only Normal

Since the supply in the United States is just normal, we can help our allies only by consuming less or by producing more. Just now the British are using only half as much for each person as are the Americans. Worse yet the French can get only half as much as the English. Whereas we still enjoy candy and other luxurious sweets, our allies grow weaker day by day for want of sugar as a bare necessity. It would not, therefore, be any undue sacrifice on our part to save some sugar for export by refraining from the use of a part of our sugar confections.

How to save sugar has been widely advertised. Mr. Hoover is looking after this part of the campaign, along with other food problems. Because considerable sugar was released for European shipment, there was a temporary shortage in the East which the West did not feel because it was near the centers of local production.

Cane sugar areas can not be readily extended in Cuba, Louisiana, or Hawaii. Only one possibility of increase remains, and that possibly is in beet sugar.

To get more beet sugar we must grow more sugar beets. This can be done either by growing more acres or by increasing acre yields. Either of these two methods may be made to count for much, but it is only by the wise control of both that maximum efficiency may be reached. It is important that action be not delayed. Why not hit a stride at once?

Some Crops May Be Shifted.

Though poor soils for sugar beets, both heavy clay and gravel or gravel loams can be made to grow fair to good crops of small gains and alfalfa, or even of corn and beans. Let these crops be planted on such soils, and beets be shifted to those areas that would otherwise have been planted in these crops. In addition old pastures, neglected corners, and freshly-broken virgin land may be sown to corn, wheat, or alfalfa, thereby releasing better adapted acres for sugar beets. New land of any sort cannot ordinarly be made safe for beets the first season, but can be used to advantage by the shift described.

Rotation Ought Not To Be Broken Up.

It is apparent, therefore, that, though the acreage beets should be increased to any reasonable extent, it is unwise to plant on poorly adapted land. Moreover, it looks folly to break up established cropping systems that have taken years to get started. Such a policy would surely in the end prove short-sighted.

More beets are needed, but they should not be obtained at the cost of great shortages in alfalfa or even in potatoes. Materially larger acreages of sugar beets can be grown without throwing to the winds what little has been permanent in rotations. What boots it to heal one arm and cripple the other to the same extent? Sound agriculture demands a broader vision. This breadth of vision would seem to indicate that just now our greatest opportunity lies not so much in more acres as in higher acre yields.

Acre Yields Can Be Increased.

Acre yields can be markedly increased by stopping up, as nearly as possible, several leaks. The most obvious of these leaks are: (1) faulty seed beds (2) poor germination (3) bad thinning, (4) careless cultivation (5) unwise irrigation (6) poor topping (7) slow hauling, and (8) lack of timely labor. These are listed in seasonal sequence rather than in order of importance, and yet it so happens that the seasonal order is also very nearly that of general importance.

Good Seeds Beds Important.

(1) A proper preparation of the seed bed is the most important single operation for any crop. This is particularly true with sugar beets on account of three things: namely, (1) the weakness of the seedlings, (2) the necessity of thinning, an (3) the development of the principal part of the crop almost entirely in the soil. It is evident from this that injury from poorly prepared seed beds extends late into the season.

Deep fall plowing on most soils aids considerably in opening the lower soils to root penetration the following year. Gumbo soils, however, may be improved by plowing very deeply if it has been plowed shallow always before. Too much sticky, raw soil is thereby brought to the surface. Let plowing gradually deepen year by year until the desired depth is reached. Most arid soils permit deep plowing at once. Even here, however, precaution ought to be taken to avoid the formation of compacted layers which sometimes result from repeated plowings at the same depth. Occasional variation in the depth assists in this respect. In spite of this, sub-soiling has not been found profitable in most cases. In case plowing has not been done in the fall, it must be done as early as possible in spring and worked down immediately in order to form the seed bed. Fall plowed land ought also to be worked down early in order to save moisture. Important as are good plowing and firming the seedbed, in saving moisture, it is equally important that there be a good supply of organic matter in the soil. To be most useful this organic matter should be decomposed to the extent of having all coarse material broken down. On this account farm manure is best applied in the fall, winter, or very early spring. When not plowed under, a disc or some other implement should be used that will work it into the soil, thereby hastening decay. Much coarse material of any sort left after warm weather begins permits extermely rapid and excessive drying. Such a seedbed is likely to be so dry at planting time to injure germination. Weeds, too, if prevalent in great numbers, dry out the soil. These should be killed so far as possible by harrowing just as they germinate. Stirring is as effective in killing weeds before their root systems are established as in the plow. A week later this is not the case at all; the spike-tooth harrow is useless once the tough roots are well established. Weeds, then, are best controlled by timely harrowing of the

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160-ACRE FARM IN CACHE VALLEY. The soil on this farm is a deep, dark sandy loam. There are sixty-five acres tillable, with a sixty-acre water right. The balance is pasture land. We can sell the cultivated land on this ranch at $100 per acre, the pasture land for $10 per acre, or, if party does not wish to purchase the pasture land, we now have a sale for it at $12.50 per acre. We can sell this farm at 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We also have several other very fine farms in Cache valley which we can sell on the above-mentioned terms. These farms can be had for less than what it would cost to rent them, or will take some exchange, if necessary, as part payment. There is still some due on the water.

160 ACRES OF LAND IN THE BEAR RIVER VALLEY, 80 acres irrigated and 80 acres dry. We can divide this 160 acres up to suit the purchaser. We can either sell the 80 acres of watered land separate, or we can sell the 80 acres of dry land separate, or we can sell 40 acres of the irrigated and 40 acres of the dry together. We can sell the 160 acres at a cash payment of $3000 down and any reasonable length of time on the balance at 7 per cent interest. The purchase price for the 160 acres would be $10,500. Water can be had for the 160 acres.

1480-ACRE RANCH, divided as follows: 1280 acres is irrigated land, ample water. The balance of 2600 acres is grazing land, all fenced and cross-fenced, and is contiguous to the other land. There are 400 head of white-faced cattle, 80 head of short 2-year-olds and 80 head of long yearlings; 10 head of good horses, tractor engine with plows and all necessary machinery to run the ranch. There is a large six-room house, barns and other outbuildings necessary to run a first-class ranch. The price of this ranch is $140,000.

10 ACRES FIRST-CLASS LAND, located one mile from Kaysville, on a good road. The land adjoining sells from $200 to $250 per acre. We can sell this land at $160 per acre, on good terms. This is a bargain and will not last long.

46 ACRES, $205 per acre. If you are looking for a first-class farm that will produce the maximum crop at a minimum cost, we ask you to investigate this farm. It is one mile southeast of Tremonton. The main canal passes right by this farm. Lifting your headgates, you get your water direct from the canal; you have no laterals to bother with. It has a full water right from the Bear River canal. The place was all plowed last fall, with the exception of that planted to alfalfa. It is in first-class shape for crops this year. This has been known for a good many years as one of the most productive farms in Boxelder county. The improvements consist of a nice five-room house, large trees and lawn and flowers, making the place homelike. About one acre of fruit that is bearing well now. Good outbuildings. The property is on the main county road and is accessible to good schools, churches and social conditions. The terms are $3000 down and any reasonable terms on the balance. Three crops on this farm will pay for the land.

IN THE SAME VICINITY, immediately across the road from this property, we have 16 acres for sale at $190 per acre. This property is all plowed and under a high state of cultivation, ready to plant this year. Good terms on this property.

184 ACRES at $185 per acre, on good terms, or will cut into forty-acre tracts to suit the purchaser—one of the best farms that has ever been in our office for sale. The property is situated at Thatcher, a little town in the Bear River valley that has good schools, churches and social conditions. The property is right under the main canal, right near the mountain, hence it is mountain loam soil. The property is perfectly level, has been known as one of the best farms in Boxelder county for twenty-five years. This property is well improved from every point of view—has some beautiful buildings, is well fenced, has five acres of orchard and one-half acre of small fruit. Sixty acres of alfalfa. The balance of the ground has been raising grain, sugar beets and potatoes. This property is immediately adjoining the beet dump, and we believe that this farm will produce as much as any farm of the same number of acres in any part of this intermountain country. It has a full water right, good water for domestic purposes and it is seldom that a farm of this class is offered for sale.

KIMBALL & RICHARDS

"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.
FARM AND RANCH DEPARTMENT.

Do You Want a Farm?

We still have 1000 acres of excellent sandy loam farm land with an abundance of water that we will cut up and sell to the farmers in 80 acre tracts. We have large tractor engines, will plow the ground and furnish seed. Good school. Daily mail. Sold practically 2000 acres last year of this tract of land. Purchasers all satisfied.

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708 KEARNS BUILDING, SALT LAKE CITY, UTAH.

seedbed. Better even than this, however, is clean farming year after year, because this leaves but few weeds to control. It requires several years to clean weedy land because some seeds lie over in the soil for several years.

Timely harrowing not only removes weeds, but it also prevents the formation of clods. Stirring heavy soils when too wet causes clods; stirring when too dry causes dust which puddles after the first heavy shower. The crust thus formed must be stirred at just the proper time or clods result from this cause. In either case the seedbed is exposed to unnecessary drying; neither is it as fine as is compatible for the best germination and the safest thinning.

Better Stands Essential.

(2) Poor germination causes a great loss in stand. A careful survey of seven representative areas in Utah showed the average stand to be only 52.2 per cent of what the farmers wished. In some cases when the farmers thought they had full stands. careful counting and measuring should the stand prove to be as poor as 60 to 80 per cent. The yields ran in almost the same proportion as the stands. Manifestly, yields could be nearly doubled by perfect stands. Of the 47.8 per cent loss due to poor stands 19.1 per cent, considerably over one third of the loss was due to poor germination. Though some of the seed was poor, it gave satisfactory stands when planted on moist, fine, and yet firm seedbeds. The poor germination was due to seedbeds poorly prepared in that they were too colddy, too loose, or contained too much coarse organic matter. Any one of these three defects permitted so great a loss of soil moisture as to injure germination. Compact soils often crust because of untimely storms or unwise cultivation or because of lack of well-decayed organic matter.

Poor Thinning Causes Heavy Loss

(3) Bad thinning caused the greatest loss in stands of any operation; alone it accounted for a loss of 21.4 per cent of the whole sand or nearly half the 47.8 per cent total loss. This bad thinning was due to contract labor which worked for acreage instead of tonnage, and to poor seedbeds. Family thinning was much superior to contract thinning. Compact surface soil and coarse manure or roots in the soil were the principal defects in the seedbed. In blocking on compact soils, the hoes drag out pieces of soil in the crusted conditions. If a heavy alfalfa or brush root, or if an undecayed lump of manure is struck with the hoe, and if these lie beneath the row, the small beets are dragged out and long gaps thereby made.

Although the seedbed is largely to blame for poor stands, lack of attention to drills is responsible for many musses. If a spout becomes clogged and this is not discovered at once, several feet, or even several rods may be unplanted. Proper cleaning and grading of seeds and a discontinuance of paying men by the acre for drilling

Cultivation and Irrigation Need Attention.

(4) Careless cultivation causes loss of 7.3 per cent of the stand. This loss consists of the occasional cutting out of beets by the horse-drawn cultivation. More loss occurs, of course, when the rows are crooked than when straight, more with in experience drivers and teams than with experienced, and more when rough seedbeds tug at the cultivators.

(5) Unwise irrigation causes considerable injury—perhaps more than does careless cultivation, but since it represents loss in size of beets rather than in number of beets it is difficult to measure. Over-irrigation produces much starch in beets, thereby injuring their quality. More important than this, however is the fact that excessive waste encourages the development of forked roots. In experiments at the Utah Station, too little water also gave more forked beets than did moderate quantities. Three or four applications of about five inches each gave the highest yield, and also the highest purity.

Particularly on heavy land, flooding is harmful because of sun-scald and crusting, Land too steep is likely to wash, whereas that too nearly level is difficult to irrigate evenly. Unless good heads and short runs are used the lower end is likely to get much less water than the upper. High spots and double furrows usually get too little and low spots and dead furrows usually too much water.

Should Top Carefully and Haul Quickly.

(6) Poor topping is inqurious either by the crowns' being cut too deep or by their being cut too light. Deep cutting leaves part of the root with the top, thereby losing both tonnage and sugar, whereas light cutting leaves part of the top with the root. This invites excessive taring.

(7) Slow hauling permits drying. In 24 to 48 hours beets exposed in the field lost water by evaporation to the extent of five per cent in weight, that is, one hundred pounds on every ton, or a ton for each acre yielding twenty tons. This loss is not small. Covering with tops, reduced evaporation but was by no mean completely effective in stopping it. Not only does the farmer lose, but also the factory, for it is much more difficult to get sugar form wilted roots than from well-preserved ones. The farmers ought not, in any case to tolerate such leaks as this. Five per cent for two days is high interest—unreasonably high.

(8) Topping that is too slow due to lack of labor causes loss of time. If winter is approaching considerable risk accompanies delayed harvest. But topping machines should do much to reduce both the time and expense of topping. Those who saw the machines tested report that they do the work in half the time and also reduce the cost of digging and topping about fifty cents a ton. If these reports are borne out by long-continued work in the harvest field, the farmer will have fewer labor troubles and will also reduce considerably his cost of production, which is the equivalent of a higher price for beets.

Supervision of Labor Vital.

The use of machine toppers will most likely release some labor to assist in hauling. In this case, beets need not be left exposed to evaporation losses. If necessary the toppers may be stopped and the men set to hauling for a part of the day. Careful planning will do much to hasten not only this operation but all others. With labor really scarce this

(Continued on page 14)

FARM LANDS

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy, hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY
Ogden, Utah.

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25 to $50 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAUHILL INVESTMENT CO.
343 Main Street Salt Lake City

Go to Lakeview, Oregon now and purchase an alfalfa farm under the Goose Lake Valley irrigation project. Price $50.00 to $75.00 per acre. $5.00 per acre down and the balance in 20 annual payments, with interest at 6 per cent. Land is level, soil black loam, neighborhood is well settled, free wood, posts and fine outside grazing on the National Forest. Soil very productive. For particulars call or write E. J. Groesbeck, Room 53, City and County Bldg., Salt Lake City, Utah

RANCH BARGAIN

600 acres deeded land.
240 acres contract land.
150 acres hay, grain, etc.
150 acres pasture, fenced.
100 head cattle, 9 head horses.
Complete set machinery and implements.
7 room house furnished.
Excellent range facilities.
Price complete $20,000.00, half cash, terms on balance at 6 per cent.

R. G. Agee
374¼ Ogden, Utah.

Dependable Seeds

What is the product of your garden worth? That depends on several things, the soil, the season, care during growth, but most of all on the seeds used.

The cost of the seed is very small compared with the value of the crop you raise. That's why Quality is more important than price when you buy seeds.

Our catalogue tells all about Vogeler's Purity Seeds, the best that money can buy. Your copy is ready, better send for it today.

Vogeler Seed Co.

SALT LAKE CITY, UTAH.

BEAN PLANTER AND DRILL

The No. 140 P. & O. Bean Planter is adapted to all requirements of bean Planting the seed mechanism being of a special design that will not crack the seed. In addition to handling all kinds of Beans it will handle ordinary corn and can be supplied with plates for handling kaffir corn, milo maize, and the various grain sorghums. Rows 28 to 40 inches apart. Drills 2½ to 19 inches apart, furnished with check rower if wanted.

Ask your Dealer or write

UTAH IMPLEMENT-VEHICLE CO.
SALT LAKE CITY

Our Highways and National Preparedness

ECONOMY DEMANDS DURABLE HIGHWAYS

Extracts from New England Roads February, 1918.

A plea for durable highways that appeals to all, on the ground that bad roads as the most expensive kind of transportation enter in to the high cost of living, is the following from the National Automobile Chamber of Commerce:

Something is evidently radically wrong with our transportation methods when rural dairymen receive only 4½ cents a quart for milk for which the city consumer pays from 16 to 18 cents, and when an up-to-date New York farmer receives a net price of $4.60 for 500 pounds of grapes that retail in New York City for $25 or $30.

Part of the difference in price between what the consumer pays and the producer receives is due to transportation. It is therefore an encouraging sign that the general public is taking more interest in the subject of highway improvement.

Practically everything raised and manufactured in the United States is transported a considerable distance before it reaches the consumer. Railroad and water rates have passed their lowest limits and are raising. At some stage of their journey our food, clothing, building material, household goods, machinery, etc., must be hauled over the public roads and streets. Here is the one place where there is possibility of effecting a large saving in transportation cost. It actually costs more to deliver a ton of coal from the yards in the city to the city consumer than to ship it by rail from the mine to the city.

It costs the farmer more than 23 cents to haul a ton of farm produce one mile on the way to market over the average country road, while the average cost of haulage by motor truck over paved city streets is only 11¾ cents a ton mile. If country roads were as good as city streets and farmers used motor trucks, their haulage costs would be cut in half. They would also be able to take advantage of the highest market prices at all seasons of the year and haul the fullest loads, whereas now they often get stuck in the mud with half a load in fall and spring. These conditions have a good deal to do with the high cost of living every one has to pay.

Until the main market roads are surfaced with some hard, durable material the country will go on wasting hundreds of millions of dollars a year in the unnecessary cost of haulage and the excessive cost of repairing the unsatisfactory roads it now has.

Several of the more progressive states have awakened to the situation. California, for example, voted an $18,000,000 bond issue several years ago for the construction of a 2,700 mile state road system. Most of this money has been spent for concrete roads. At the next election the citizens votes to issue $15,000,000 more of highway bonds to complete the work. If the work already done with the first bond issue had not given satisfaction it would be useless to submit the second proposal to the voters.

The good roads bill passed in Illinois three years ago provided for the building of durable roads, and a considerable mileage of concrete and brick roads has been built in that state.

There probably is no state tha needs hard roads more than does New Jersey, which has one motor vehicle to every thirty-five inhabitants, or about six cars to every mile of public road. The state lies between New York city and Philadelphia, the largest two cities on the Atlantic seaboard, and has a great deal of cross-state traffic by automobiles and motor trucks. Some of the main roads carry traffic of 2,000 vehicles a day, aggregating 6,000 tons or more.

New Jersey is a vast truck garden that supplies the markets of these two big cities and it means money in the pockets of the farmers to have roads that they can depend upon every day in the year just as they depend upon the railroads| Good wagon roads are even more essential to the prosperity of the state today than railroads, because with good roads and motor trucks it would be possible for the state to carry on all its activities, while with railroads and no wagon roads many of them would have to shut down.

Few states in the Union would care to admit that they are less progressive than New Zealand, yet that commonwealth in the Antipodes has come to realize that its roads are not equal to the demands of traffic and proposes to adopt concrete road construction as practiced in some parts of the United States. Authorities there estimate that 12-foot concrete roads can be built for $2,000 a mile more than ordinary stone roads and that there would be a saving in upkeep of at least $1,200 a mile during the first five years, while at the end of ten years there would be a saving of $7,000 or $8,000 per mile.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

BUTTER SUBSTITUTES

Professor Halliburton, the celebrated London writer on foods, has recently completed an important investigation of the numerous butter substitutes on the British market, particularly with reference to the fat soluble growth factor.

His report reveals a new reason why the average man can replenish his store of energy with butter. He has discovered, with other scientists —for he lays no claim to its being an original discovery—that butter and other fats of animal origin contain a valuable substance essential to human growth, which he terms 'accessory growth substance."

The growth substance is present in butter, butter-fat, butter oil, egg yolk, codliver oil, kidney fat and heart fat. He found by feeding experiments on animals that it is absent from the majority of oils of vegetable origin, since olive oil, almond oil, corn oil, sunflower seed oil, bleached cottonseed oil and linseed oil were all unable to replace butter in the rations given to animals. Nut butter and lard substitutes are also destitute of growth substance.

Professor Halliburton states that the results of his investigations show the importance of butter as an essential part of the diet of a nation at war. In his opinion, war imposes different standards of diet on people. In the case of children, the growth substance of fat must be supplied and the way to accomplish this is to provide an abundance of fresh milk.

There can be no question that during this period of world strain nothing is of greater importance, and no patriotic duty rests heavier upon anyone who can contribute to it in any way, than the production of the greatest possible amount of butter.—DeLaval Monthly.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha
(LIMITED)

Feeds and Feeding

James Dryden.

There is no end to questions about feeding. Feeding may be one of the most important subjects in poultry-keeping, and yet it may be easily mastered. We do not know all about different foods and different methods, but enough to know, if the knowledge is only applied, to enable the poultryman to get eggs in winter. He has to apply the knowledge faithfully and diligently. A great many fail in the application.

There are breed and breeding questions, and there are feed and feeding questions. It is not all in the feed any more than it is all in the breed. Breeding and feeding are just as important as breed and feed.

We may feed a balanced ration; that is a ration containing all the necessary foods for egg production, and not get 100 eggs in a year. But if we feed the same ration in a different way we may get 200 eggs. It is not enough to study feeds; we must study feeding as well.

Among the mistakes in feeding, I may mention the following: Irregularity is one of the worst. The poultry is often neglected on the farm. The farmer goes to town and does not get back in time to feed the fowls. They go to bed with an empty crop, and what food may be left in their digestive tract is drawn upon for bodily maintenance and there is none left to make eggs from. Next day to make up for the neglect the fowls are given a double dose, and a starve and an overfeed always means digestive disorders and slackened production. You might as well expect to make a record trip in an automobile across the continent with the engine 'dead" half the time for lack of gasoline, as to expect the hen to produce profitably on irregular feeding. The feed is the fuel for the hen, just as the coal furnishes the steam for the steam engine. It is feed that furnishes heat for the body, and heat is life.

Feed also furnishes egg-making material. The egg can be made in no other way. The feed, which is the raw material, must be fed to the hen in order for the hen to make eggs. If the supply of raw material is not regular the output of eggs, which are the finished product, will not be regular.

Irregularity in feeding is one of the chief causes for the failure in egg production. Try this little experiment. If meat scrap has been fed regularly, cut it off all at once and give none for 10 days. The egg production will drop about half. Then start again to feed them all they will eat all the time and the hens will soon be out of condition; they will be in a serious plight and egg production will decrease further. There will be digestive disorders and sick hens. This would not be the fault of the feed, but the fault of the feeding—irregularity.

Another mistake in feeding which accounts for a great loss in eggs is in making radical changes in the ration. The hen is very particular as to what she eats; she is very suspicious of new feeds. The egg organs are very sensitive to environmental conditions and to changes in feed. Set the dog on the hens, or let the youngsters scare them, and there will be few eggs for several days after. Does the hen taste the food she eats. Bring up a hen on wheat as the grain food, then change all at once to yellow corn. She will not eat the corn until starvation stares her in the face. Then after she has learned to like yellow corn, give her half white corn and half yellow. She will eat the yellow and leave the white untouched. Feed her meat or beef scrap, and then change all at once to fish scrap, and she will shun the fish scrap until after a few days she has satisfied herself in some way that the fish scrap is wholesome and perfectly harmless. Feed her beets or green food, then change to kale and it will be several days ebfore she has finished her investigation of the plant and concludes to eat it, even though the egglaying suffers seriously in the meantime. Is it a question of taste? If so, the sense of taste is very highly developed in the hen that will distinguish any difference in white and yellow corn, or will hesitate in eating kale though afterward she will eat it in preference to most any other kind of greens. Or is it a blind instinct that makes her suspicious of all foods until in some unknowable way she can satisfy herself that they are not poisonous?

It is a fact that wild fowls refuse to eat poisonous seeds or plants, and the keeping of domestic fowls on the farm would probably be unprofitable if they did not possess the same faculty of telling what were poisonous and letting them alone. Whether the fowl's aversion to new foods comes from a natural instinct to protect herself against poisoning, or is merely a question of taste, getting accustomed to the taste of the food, the lesson to the poultry feeder is that he should not make a radical change in the feed if he wishes to keep up egg production.

The changes therefore should be made gradually, not radically. If the change is to be made from wheat to corn, start feeding the corn, but keep feeding wheat until the fowls apparently eat the corn as well as the wheat. Cut down on the wheat gradually and increase the corn gradually. By the end of a week or 10 days the full change can usually be made. It is the same with other grains or foods. If egg production falls off after a change of feed, it is more likely to be that the change was not made judiciously, rather than the fault of the new feed.

J. D.

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WHAT BIG ADVERTISERS SPEND

The favorite plaint of the business man who has fallen asleep by the wayside is that advertising is a huge economic waste; that millions of dollars are spent and wasted, in artificial attemps to stimulate selling, to the ultimate injury of both buyer and seller. At first glance his argument may appear logical. But it's not based on the facts.

The average man hears about the millions and millions spent for advertising and he finally gets the notion that somehow or other the buyer has got to pay for it.

Millions spent for advertising sounds big, but hundreds of millions' worth of goods sold by advertising makes the actual amount spent for advertising look small.

Let us see how much the big advertisers spend.

The advertising of one of the leading paint manufacturers of the country averages 3 1-3 per cent of their total sales. In other words, for every dollar's worth of paint they sell they spent 3 1-3 cents in advertising. This is about equivalent to the price of a postage stamp and a sheet of note paper for every dollar's worth of goods sold. Another big paint and varnish manufacturer spends 3 1-3 to 4½ per cent.

Next take clothing. Of two of the biggest clothing manufacturers in the country one spends 1½ per cent; the other 2 per cent. An equally prominent shoe manufacturer spends 1½ per cent.

"But shoes and clothing are necessities," some say. "How about the luxuries?"

All right! Take one of the most popular luxuries in the world—candy. One of the best known candy makers in the country and one of the biggest advertisers spends 5 per cent.

Then take the big automobile and tire manufacturers with their full page and double page spreads. Surely now the percentage figures will begin to jump. Will they?

You will be surprised at the figures for two of the most famous automobile builders in the country. One is 2 per cent; the other 3 per cent. Also two of the leading tire manufacturers; one spends 2 per cent; the other 2 per cent. And all four rank among the biggest advertisers in the country.

These figures are authentic, and when you consider the enormous volume of the atuomobile and tire business you will see that the small percentages are ample to provide for the wonderful publicity.

And then we come to the big department stores—where at one time or another every buyer buys. They fairly eat up the newspapers with their big spreads. But if you expect to find big percentage figures here, again you will be agreeably disappointed. The average department store's advertising does not cost more than 3 per cent of its total business.

The fact is that the great majority of all nationally advertised articles—articles which are familiarly known in every home in the country, which are famous for their quality as well as their immense distribution, belong in the 5 per cent or under class.

Because advertising is the most efficient method of marketing ever developed by business enterprise, its effect is to decrease and not to increase the sum total of selling cost. This is a simple fact about advertising that every buyer of advertised goods ought to know.—Orange Judd Farmer.

ONE MAN CAN FARM MORE LAND *with the*

MOLINE UNIVERSAL TRACTOR

"It Solves the Farm Help Problem"

TWO million men will be gone from the farms because of the war. Yet production of food must be increased. There is only one way—equip the men left on the farms so they can do more work than ever before.

With the Moline-Universal—the original two-wheel tractor—*One Man* can farm more land than was ever before possible, because—

One Man has power at his command equal to five horses, capable of doing the work of seven horses owing to its greater speed and endurance.

One Man operates the Moline-Universal Tractor from the seat of the implement to which it is attached, where he must sit in order to do good work.

One Man can start in the spring and go from one operation to another—plowing, harrowing, planting, cultivating, mowing, harvesting grain or corn, spreading manure, filling the silo, cutting wood, etc., doing all farm work from one year's end to another, independently of horses or hired help.

Thousands of Moline-Universal Tractors are now at work under every conceivable condition in all parts of the United States and in Canada, England, France, Sweden, Norway, Denmark, Russia, Italy, Spain, Mexico, Peru, Argentine, Brazil, Cuba, Guatemala, South Africa, Australia. Wherever a Moline-Universal Tractor is sold, there is immediately a big demand for more.

Moline sales and service branches cover the country.

The Moline-Universal will solve your help and power problems. It is ready for you now. Write us today for free booklet giving full description of the Moline-Universal and name of your nearest Moline dealer.

Address Department 33

MOLINE PLOW CO., Moline, Illinois

IRON AGE

GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE *Combined Hill and Drill Seeder* solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in [illegible] minutes. [illegible] combinations, $[illegible] to $[illegible]. Write for booklet.

Bateman M'f'g Co., Box 83 C, Grenloch, N. J.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
BOX 0 STERLING, ILL.

MILLER-CAHOON COMPANY
General Agents
Idaho Falls, Idaho Murray, Utah

Big Money in Running Water

Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an

One Man One Team

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circular showing different styles

Lisle Manufacturing Co.
Box 976 Clarinda, Iowa

CONSERVE YOUR STOCK

USE PERFECT EAR TAGS

The Perfect Ear Tag is being adopted by stockmen all over the United States, because it is so very light in weight—made of aluminum. It is non-corrosive and non-poisonous. There is liberal space for name and address of owner and number of animal. Attached instantly with one operation. Offers perfect identification. We own the patent and are sole manufacturers.

FOR CATTLE, SHEEP AND HOGS

SALT LAKE STAMP CO.
SALT LAKE CITY, UTAH

SEND FOR FREE SAMPLES

Write us today to-day please send FREE Samples of PERFECT EAR TAGS, and Price List.

Name .....
Address ..... (3-30-8)

MORE SUGAR BEETS FOR UTAH

(Continued fram page 11)

is vital. Not only in the harvesting but in the thinning season as well, some sort of organized labor may be made to help. Community labor bureus to shift men rapidly from one job to another are already doing much in some sections. In other places, school boys and girls are released during times of greatest labor demands. Since this labor must be supervised, if responsible leaders do not take charge of the gangs, the farmer himself must, especially during thinning in which operation uninterested or unskilled labor works such havoc.

Summary

There is a great demand for sugar among our allies in Europe. This demand can be met only from America, where the production ought to be increased and the consumption reduced. In order to increase consumption higher acre yields should be grown and more acres ought to be planted. Increase in acreage, however, ought not to come at the expense of other vital crops nor should it be attempted on soils poorly adapted to beet production. Water-logged lands, gumbo soils, and very coarse sand or gravel are all unfavorable to sugar beets. Where it is not possible to correct this defect, these fields ought probably to be planted to some other crops and beets sown to lands hitherto given to these other crops. Old pastures and sod lands may be utilized for potatoes or corn and their seedbeds given up to beets.

Acre yields are materially decreased by a series of leaks. The worst of these are: (1) faulty seed beds, (2) poor germination (3) bad thinning (4) careless cultivation, (5) unwise irrigation, (6) poor topping, (7) slow hauling, and (8) a lack oftimely labor. The first five of these leaks are closely related to poor seedbeds. A thorough preparation of the seedbed and a proper supervision of labor could be made to increase acre yields from 50 to 80 per cent by saving nearly half the stand which is lost in these operations under our "hurry-up" system. The last three operation leaks are not so closely dependent on good seedbeds as on a scarcity of labor. Machine toppers should do much to relieve this condition by hastening digging and topping. Organizations to transfer labor and to handle school boys and girls are also capable to doing much. Careful supervision of unskilled labor, is however, highly important.

CARE OF SHEEP AT LAMBING TIME

W. H. Tomhave.

Lambing time is approaching on many farms ana on others the lambs have arrived. This is one of the few times when the flock of sheep requires close attention and it is usually time well spent. This year lambs will be born upon a great many farms where sheep are being kept for the first time. In many instances the men in charge have had no experience with sheep so that a few suggestions may be in order.

In the first place it is essential that the ewes have plenty of good clean feed and plenty of exercise. Spoiled or mouldy feed should be kept away from them. Mouldy corn, corn stover, silage or any kind of feed is likely to cause losses. It has been difficult to exercise ewes this winter on account of the large amount of snow but there is usually a clean yard about the place where the flock can be turned out for a couple of hours each day.

About a week before the ewes are expected to begin lambing, it is a good plan to trim the wool away from near the udder. Care must be taken, however, that the teats are not cut off or the udder injured in any way. This work is done so as to keep the small lambs from sucking the tag ends of fleece and getting wool lodged in their digestive system.

When lambing time approaches the udder falls and the ewes will "belly down" considerable. A short time before lambing she will seek a secluded place or one end of the pen if she is in with a flock. If it is possible to do so, the ewe should then be removed to a lambing pen where she will not be disturbed. As soon as the lamb is born it should be helped to the teats so as to get some warm milk into its system. In case of real cold weather, the lambs should be protected in some way at least until it is dry and has had a good supply of milk. Once a lamb is well started in life it will grow rapidly if given enough feed.

The ewes should have a liberal supply of good legume hay and some grain. There is very little danger of allowing too much feed for a ewe at this stage. The ration should be made up of such feeds as are available, but corn should not form too large a percentage of the mixture. As soon as the lambs begin to nibble a little grain and hay, a creep should be provided so that they can be fed without the ewes bothering them. In this creep, should be fed a grain mixture of, corn meal five parts and oil meal one part to have good results, in addition to some good alfalfa or mixed clover hay. As soon as the lambs become accustomed teating, a small amount of oats with the hulls sifted out may be added. The creep in which the lambs are fed should be so constructed that the lambs can get through without being compelled to stoop. The small pen or creep is made by nailing upright pieces of slats about eight inches apart to boards or studding to make a small open pen. The lambs will gain rapidly if fed in addition to the milk which they get from the ewes.

Young lambs require exercise, unless they are developed for "hot house" lamb trade. There is practically no demand for this class of lambs this year so all lambs can have plenty of exercise. Sunlight should not be denied them at any time.

All lambs should be docked when from one to four weeks old. All docked sheep sell higher on the market than sheep that have not been docked. Docking makes the flock more attractive and they are much easier to keep clean. The operation is simple and requires but very little time. The docking may be done by means of a hot pincher. If the pinchers are used a shingle with a hole in it should be secured and the tail pulled through so that the hot pinchers will not sear the body. The tail should be removed about one inch from the body. If the hot pinchers can not be used a pair of pruning shears, a block and chisel or a common knife may be used. The instruments should be sharp. There may be some loss when the hot shears are not used but usually not enough to a cause a loss.

All male lambs that are to be marketed should be castrated when a couple of weeks old. The docking and castrating should not be done at the same time as it is too hard on the lambs, these operations should be performed about ten days apart. The knife used for castrating should be sharp and kept clean by disinfecting. After the lambs have been castrated they should be kept in clean pens with clean bedding to avoid infection.

These few suggestions may seem simple but all are essential to getting the most from the flock of ewes.

Pennsylvania.

CONTROL OF PIG WEEDS

Victor, Idaho.

Utah Farmer:

Gentlemen:—Will you please tell me how to control pig weeds?

E. N. Karsley.

Answered by Dr. Geo. Stewart, Assistant Agronomist.

Control of Pig weeds: Pig weeds can be controlled by handling a seed bed properly. The best way to do this is to cultivate the land as early as possible in the spring with a harrow or disk. This causes the seed near the surface to germinate. As soon as they begin to come up, the land should be re-disked and harrowed while the weeds are yet very small. This operation should be repeated as many times as possible before planting season arrives. If grain is to be planted in the land, in May or early June, the seed bed should be thoroughly cleaned at that time by a thorough disking or a shallow plowing, and the seed planted on this. Hereafter, let the worst weeds be kept out of the grain the stubble disked, and the land fall-plowed. Next spring repeat the above operation. In two years pig weeds should be pretty thoroughly under control.

VALUE OF CEMENT FLOORS

By increasing the value of the manure produced, cement floors in livestock feeding will return their cost in about one year. Tight stable floors save soluble plant food from seeping away as it does with earth floors.

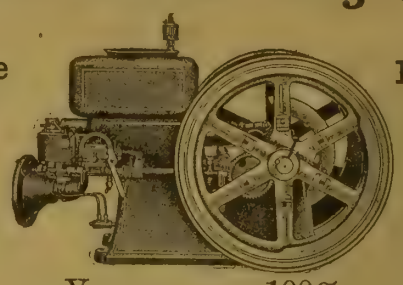
Manure was increased in value by $4.48 annually for every thousand pounds live weight of steers over that recovered from animals standing on earth floors in tests conducted at the Ohio Experiment Station. In the experiments 58 steers were fed. The cost of concreting was about $4.50 a steer. Two six-month feeding periods would therefore pay for the expense of concrete floors.

Much of the fertility value of manure is in the liquid part, which is easily carrried away through earth floors. Concrete prevents this seepage, making each ton of manure worth more.

HERCULES ENGINES

With Webster Magneto

Gasoline Cost 30c Gallon



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Save the difference in cost of Gasoline and Kerosene, **it will pay for your Engine.**

HP	Fuel Consumed full rated H. P. load 10 hours	Operation cost per day on Gasoline	Operation cost per day on Kerosene	Net saving per hour by using Kerosene	Net saving per day by using Kerosene	Net saving in 200 days by using Kerosene
3	30 pints	1.12½	.56¼	.05½	.56¼	112.50
5	50 pints	1.77½	.93¾	.08 1-3	.93¾	187.50
7	70 pints	2.26½	1.31¼	.13	1.31¼	262.50
9	90 pints	3.37½	1.68¾	.16½	1.68¾	337.50
12	120 pints	4.50	2.25	.22½	2.25	450.00

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HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Addres the Lehi Office.

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Three new 14-inch power lift John Deere engine gang plows. Can save you from $50 to $75 on present prices of these kinds of plows.

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Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.

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Booking orders for our Quality S. C. White Leghorn chicks. Order quickly. Supply will soon be exhausted.

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S. C. WHITE LEGHORNS

Greatest layers year in and year out. Shipments arrive safe—small expressage. Single Comb White Leghorns guaranteed. Chicks shipped everywhere west of the Rocky Mountains—always at lowest prices. Full information on request. Established 25 years.

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Wise economy is quality not price, we sell cheap when quality is the main consideration.

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Is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

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Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS
Breeders of Percheron Horses and Rambouillet Sheep.
W. S. HANSON, Prop.
Collinston Utah

LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

MARQUIS SEED WHEAT

One hundred bushels of good Marquis Seed Wheat For Sale.

B. C. LOTT, Lehi, Utah.

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

S. O. S.

(Continued from page 3)

bodies, with a song of victory upon their lips, and their shell torn banners waving as ever a message of victory and freedom, to all the world.

Shall we grow more sugar beets this year? And, if we do, how shall we proceed to grow them with less help and more economically than in the past? The present season is exceptionally promising for a good crop of beets, as I notice about 90 per cent of our farmers have got their land fall plowed, which is almost equal to putting a coat of manure on the land. And, by having the land fall plowed, we can work it down to a seed bed earlier in the spring, with very little trouble, and if weather conditions are favorable, the seed can be planted early, and be up and growing before hot weather sets in. The farmers being generally ahead with their work, they can get into the beet patches earlier for thinning, and so get along with less thinners, and do a better job also. Beets thinned early can be thinned at a cost of one third less than beets thinned two or three weeks later, due to the ground working easier and having less weeds to clean out of the rows. As soon as the thinning is completed, CULTIVATE, then CULTIVATE, and CULTIVATE some more, early and often. Your horse can kill more weeds in one hour than you can kill in a week with a hoe, and your beets will grow 50 per cent faster by having early cultivation.

The farmer should silo his beet tops for feeding purposes, and scrape out a pit in close proximity to his cow barn; one that is large enough to hold all his beet tops. I will not explain the methods of siloing them as this has been done before. It is estimated that an average crop of beets will make about 6 (six) tons of tops per acre, and that after being siloed will be worth $7.00 per ton, or $42.00 per acre.

As to harvesting the tops, if the farmer has a beet topping machine, when he is ordered to dig beets (usually about October 1st). he can top his beets at the rate of about 2½ acres per day with the machine, then take a hay rake, (side delivery being best) and rake four rows of tops into a wind-row with one course of the rake, then turn back and rake another four rows into the same wind-row. The tops will then be in good condition for hauling to the silo; when the beet tops are taken care of, he can then dig and deliver as fast as possible.

The topping machine which I heretofore mentioned, and which I saw working at Lehi was invented by John Devy & Sons of that place, and was doing excellent work. The crowns of some of the beets were six inches above the ground, and others were below the surface, in the patch where the machine was working, but with almost human like instinct the machine would raise up and slice the crown from the high beets then drop down and take the crowns off the beet under the surface, with a variation of not more than an eighth of an inch in the thickness of the slices, this being quite a saving to the grower, the work being done more uniformly and accurately than when done by the hand, by the hit and miss system with a topping knife. Another machine, a beet digger which was invented by the same parties was demonstrated at the same time. This machine pulled the beets and laid them on the ground ready for loading into the wagon for delivery; with an average sized team of horses a man can dig 2½ or 3 acres of beets per day. If a farmer owned both the topper and digger, he could if necessary (help being scarce) harvest quite a tonnage of beets alone, by topping his beets as before mentioned. He could dig beets for an hour or so then he could haul the beets and so on until his beets were harvested, thus relieving himself of the trouble and anxiety of looking for help when needed most, and the disappointment of getting help after it is promised.

It is impossible to calculate the saving, by using the topper and digger, over the old system of harvesting beets, but I am convinced after seeing the machines work that there would be a saving of at least $8.00 to $10.00 per acre in harvesting alone, beside the saving in tonnage on account of better topping and the ease with which the tops can be taken care of and siloed.

So, with the labor problem solved let us answer the S. O. S. of our Uncle Sam,——

For we'll buckle on the harness
And we'll plow, and sow, and reap,
And we'll help to feed the starving ones
Across the briney deep.
And we're going to show the Kaiser
In our own peculiar way,
That to conquer all creation
Is a job that will not pay.
So let's help our Uncle Samuel
In the best way that we can
And we'll bear victorious banners
In the brotherhood of man.

WE MUST PLANT—
PLANT AND PRODUCE

(Continued from page 1)

acre is equaled or bettered this year.

A little extra time spent on the seed bed, to see that it is worked down just right, harrowing or rolling it an extra time if needed is time well spent although we are busy. Start with a good seed bed and you are assured a better tonnage at harvest time. Increased production means just as much to produce more per acre as to plant more acres.

From my point of view any farmer who does not produce a maximum on his farm this year, should be looked upon as avoiding a responsibility a duty. Labor troubles are going to adjust themselves and in Utah will be well taken care off. So in conclusion I want to suggest we plant, plant and produce and let we of Utah show to the world we are not slackers but producers.

Alfalfa Seed
Sweet Clover Seed

—o—

FOR SALE
at
Wholesale Prices

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Write for prices and state quantity desired.

Tyng Warehouse & Storage Co.
Box 776 Salt Lake, Utah

HEREFORD BULLS
C. F. DIXON & SONS
Payson, Utah.
HAVE 11 HEAD
6 to 16 months old
FOR SALE
Special prices to take them all.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service.

Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

ORDER SPRING PIGS NOW

Orders placed now for spring pigs from Utah prize winning sows and Richard Grand Champion Boar, "Defender" and Junior Champion "Pathfinder." Also one young "Defender" boar for sale, 5 months old from a blue ribbon sow. Prices always very reasonable.

VICTOR R. FISHER
Oxford Idaho

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IN EXCHANGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah

BABY CHICKS—BABY CHICKS
White Leghorns, Brown Leghorns, $12.00 per 100.
R. I. Reds, $15.00 per 100.
ORLAND HATCHERY
Orland, Glenn County, California.

BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS

Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.

J. H. SHAFER
Proprietor Ogden Feed Co.
2246 Wash. Ave. Ogden, Utah

MACHINERY FOR SALE

The U. S. Cream Separator like John Brown's soul, goes marching on. If you want to know about the new United States or need repairs for the old one, write

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FOR
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GLOBE GRAIN AND MILLING CO.
Kearns Building
Salt Lake City, Utah.

THE FARM SHOP

R. B. Rushing.

Did you ever look around to see how many farmers near you have a real good set of blacksmith tools—not an expensive set, but just a real simple, practical set that most any farmer and his son can handle?

Recently when I was away from home I chanced to spend a part of a day and night with a real progressive farmer, and he related the following experience from his shop:

"I had always been rather skeptical as to the real practical utility of a blacksmith shop on the farm, but now that we have installed one in the tool house its real value has been emphasized many times.

"Not that I mean to say that such an outfit saves a great deal of money in actual blacksmithing expenses, but it does save time when time is most valuable.

"Again and again important parts of machinery are repaired during the noon hours or immediately after an accident, when, but for an outfit, a trip of five miles and often a delay of a day in the work undertaken would have been necessary.

"Then, too, when a little list of necessary repairs is kept in a notebook, rainy days may be very profitably utilized, and the idle months are just the ideal times when everything about the farm can be looked after and kept in order. We are also able to shoe our own horses now, and appreciate this fact very much, as men who can put on shoes right are very scarce.

"Our outfit is very simple and only cost about $40, but would probably cost $50 or $60 now. However, where not much work is to be done, even cheaper articles will give very good service; but I prefer the best of tools.

"The first thing to be considered in the furnishing of the shop is the forge. Here is where many, many farmers make a mistake. They buy one that is altogether too small. First we took one of the medium size, and it suited us very well until we began to sharpen plowshares; then we could have used one much larger. Little bench forges are entirely too small; they should have a fire pan about 18x24 inches at the minimum.

"A good anvil will weigh about 100 pounds, and it should not be much lighter. Not necessary for it to be larger however. A cast-iron anvil that will not stand hard pounding should be avoided. The same is true of the vice; one with steel jaws and wroughtiron body that will stand very heavy pounding should be bought. This will cost from $5 to $10.

"The rest of the more expensive tools will be an upright drill for boring holes in iron. This is a very convenient tool and used oftener, perhaps, than ordinarily supposed. It costs from about $5 up, and is easily attached to the wall of the shop. In addition to the press a set of dies, for cutting threads on bolts, is a necessity. Five to $10 will buy a good farmer's outfit.

"Other tools, such as machinist's hammer, a blacksmith's hand hammer, and, for sharpening plows, a round faced hammer should be provided.

"A pair each of plain and bolt tongs will complete the main equipment, and other tools, such as chisels and wrenches, may be gathered as needed.

"The careful farmer will soon be able to make many hand tools himself.

"Coal free from sulphur and earthy materials, one that does not furnish clinkers, must be used. Welding compound and the soldering outfit are also handy."

I tell you it is a pleasure to me to go into the shop of such a farmer and see his boys learning to be handy with tools. Many thus become experts. Indeed, this man spoken of above has a son now drawing a good check every month and is not yet 21 years old. He got his early training there on the farm under his careful father, and you mark it down that he is making good. What about your shop and your boys? A farm shop with the necessary tools might interest them and save you money in repairs.

Proved Worthy Beyond Question

THREE distinct tendencies in modern motor car construction were visible in the new models displayed at the recent metropolitan automobile shows.

Briefly, these three tendencies were concerned with more efficient power, lighter car weight, and greater economy of operation.

Every one of these qualities has been a pronounced characteristic of Oakland Sensible Six models during the past three years.

The high-speed overhead-valve engine of the Oakland Sensible Six delivers 44 horsepower at 2600 r.p.m., or one full horsepower to every 48 pounds of car weight.

The high carburetion efficiency of the engine gives from eighteen to twenty-five miles to the gallon of gasoline. The 32x4 tires, extra large for the light weight of this car, are giving 8,000 to 12,000 miles per tire.

The finely made chassis is a model of simplicity and strength, and the sightly body is swung on long springs over a generous wheelbase, insuring full comfort.

No pains have been spared to make the car handsome in proportion and finish; it is unusually roomy and accessible, and upholstered throughout in genuine leather.

THE sound and practical construction of the Oakland Sensible Six chassis matches low cost of operation with low cost of maintenance.

Touring Car	$1050
Roadster	1050
Roadster Coupe	1210
Sedan	1250
Sedan (Unit Body)	1550
Coupe (Unit Body)	1550

F. O. B. Pontiac, Mich.

OAKLAND MOTOR CAR CO.
PONTIAC, MICHIGAN

OAKLAND SENSIBLE SIX

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 36 LEHI AND SALT LAKE CITY, UTAH. APRIL 6, 1917

The Test of Patriotism----A Man's Sacrifice

YOUR FRIENDS ARE WITH MY FRIENDS IN FRANCE—ARE WE PROTECTING THEM WITH AIRPLANES, BIG GUNS AND PLENTY OF FOOD AND AMUNITION.

D. D. McKAY, President State Farm Bureau.

After working fifteen years for wages a young friend of mine bought a farm intending, as soon as he got on his feet, to get married. This farm meant to him the beginning of a real life, the realization of his hopes and labors for many years. He worked it one year and then was drafted into the army and sent to France. The farm was sold and if he comes back he must begin over again with fewer chances of succeeding than at the beginning of his career.

You can understand something of this man's sacrifice; the test his patriotism was put to. Fifteen years of prayers and hopes and labors, the certainty of success and independance sacrificed over night and with them, possibly, life itself. And for what? For his friends. That they might enjoy family relations, property rights, opportunity, independance --the sum total of life—and, in the future, freedom from such sacrifice as he is making. But who are his friends? Those who help him.

This man was a farmer and as I travel around I look, unconciously, to see who are his friends among men of his own calling. Are they preforming their task with the same earnestness and devotion as he is preforming his. Often I find them and rejoice in them but sometimes I am disappointed.

In January I met one of these disappointments. He had a good farm and his soil and location made his place ideal for growing certain food crops that are much needed. I asked him if he was going to grow these crops and he said "No." I suggested that these crops were necessary to the country's welfare, that he could grow them to better advantage than some one less favorably situated and that he would be helping to win the war. He held my argument in utter contempt. "Too much trouble and not enough money for me" he said. Not one thought of democracy imperilled had entered his head. The empending jepordy to the future of the human race meant nothing to him. Not one jot of gratitude to the boys who were yielding up their lives that he might live found lodgement in his soul. He did see, though, with greedy eyes an opportunity for personal gain. Such as he are friends of my friend's enemy.

One day on the same trip I chanced in a country store. There was a farmer there toasting his shins. I got into conversation with him about the war and the scarcity of food in Europe. I learned that he had a fairly good farm of about sixty acres but that he had not fed many of Europe's starving last year because his crop had been a partial failure. He had put it in fairly good shape and then went away on a trip. When he came back "the blamed stuff had got itself dried out.". I asked him if he had plowed any last fall and he said no. It was late when he got his crop in and he expected it to freeze up every day so had not started. What would he plant this year? "Oh I dunno." He had no more purpose or direction in life than the spring breeze. The sacrifices others were making for the human race had not shamed into action. With the most titanic struggle the world ever saw going on about him, with opportunity and strength to play a man's part in the struggle, yet with the ambition of a straw-fed horse he idled away his day and opportunity, while my friend was planing, working, studying to make himself perfectly fit for his part. This farmer is a friend of the enemy and of mankind.

In February my friend wrote me from the port of embarkation saying that he was about to leave for France. Among other things he said the troops were with out sugar because of the scarcity that existed then in the east. With out complaining he indicated that he missed it very much. With a new and powerful force the governments warning that there was a grave possibility of a sugar shortage this year came home to me. This was the beginning. If he missed it now how much more would he miss it when he got into action. And if he had a small supply and his French comrades had none I know him well enough to know that he would give away.

Would his fellow farmers come to the rescue? In the fight he had yielded up for the race a universal and hearty response would be little enough indeed. But if there were any who, because of hate or greed, failed they were Huns in all but name.

Just last week I got a letter from my friend from France. He tried to give me some idea of the tremendous amount of supplies that were necessary to properly equip an army and how airplanes, big guns and amunition saved the lives of the boys in the trenches. As he is probably this minute in the thick of the fight doing his best to stay the progress of the Hun's advance I am wondering if he is protected by big guns and shells in abundance. If he is the credit does not belong to some farmers I know. One of his own neighbors refused to make a loan of even fifty dollars to Uncle Sam for the purpose of purchasing these supplies. Loan it, mind you. Not give it. Some mens gold must be mighty precious when it tips the scales against another mans life. I am wondering if this neighbor intended to help the Germans kill my friend.

Farmers, your friends are with my friends in France of-offering their lives in defense of your homes. They are doing not their bit but their best, every hour of the day and night. If you and I think of money only in our planting, of ease in our harvesting or of self in our spending it won't need a Hun to finish our friends. We shall have done that ourselves. "It were better that a mill stone was tied about our neck and we were cast in the deep" than that this should happen.

ONLY AMERICA CAN HELP

"On your side are boundless supplies of men, food and material; on this side a boundless demand for their help.

"Our men are war-weary and their nerves have been strained by more than three years of hard, relentless toil.

"Our position is critical, particularly until the next harvest, but the United States can save us.

"You Americans have the men, the skill and the material to save the allied cause."

SIR JOSEPH MACLAY, British Shipping Controller.

Government Wants More Sugar

Alva Nelson.

Again the government officials have emphasized the urgent need of more sugar. They were in close touch with the amount of acreage signed up and knew that something must be done. Representatives of all the sugar companies were called to Washington and they were asked if they would pay the farmers $10.00 a ton in order to get increased production. The manufacturers accepted the request of the government and are now offering ten dollars a ton for beets.

This price should greatly increase the sugar beet acreage for there is money in growing beets at this price. The most important thing however at this time is the fact that the governmen want the farmers who live near enough to a sugar factory to grow beets.

The need of sugar has been told us by the Federal Food Administration several times and as one man expressed it to me, "actions speak lowder than words," they have shown by the increased price to farmers that the need of more sugar is very urgent.

Utah has always met every call of the government and I am sure the farmers of the state, when they realize the need of more sugar, will increase their acreage to meet the government requirements.

Last year there was more or less trouble about labor, particularly at beet thinning time. This year this problem seems to be solved as government and state officials are organizing the labor so that every call for help will be answered.

Another thing that will help the labor situation is the establishment of uniform prices for beet labor. If each County Farm Bureau agrees on these prices it will help to stabilize the price of labor.

The prices thus far agreed upon are quite a substantial increase over the prices paid last year, this will encourage laborers to do better work for they will be able to earn more money. Beet growers can afford to pay the increase prices because of the higher price they are going to get for sugar beets.

The prices are for, beet thinning $8.00 per acre, $3.00 per acre for the 1st hoeing, $2.00 per acre for the second and if a third is necesasry $1.00 per acre. For topping and loading on the wagon $13.00 per acre for a 12 ton crop with $1.00 extra for each additional ton above 12 tons per acre and 75 cents less for each ton below 12 tons per acre, with a $10.00 per acre as a minimum for topping and loading. Another way of putting it is 75 cents per ton for topping and 25 cents a ton for loading them.

This year the hand labor, as it is called should cost about $26.00 or $27.00 per acre for a 12 ton crop.

There is another help that should reduce the cost of harvesting and that is the beet topper and beet lifter. These machines are promised to be ready for use this fall and this will help both in the number of hands needed for topping and pulling and in reducing the cost of this operation in beet growing.

The boys and girls about 16 to 18 thousand of them are being organized and with this help available the problem of labor with the sugar beets does not look near so bad as it did a year ago. For this reason we ought to incease our acreage.

To me one of the most important things that has come to the beet grower is the siloing of beet tops. The experience of growers this winter have proven that it is practical to save the beet tops and use them for feed and in this way increase the profits from an acre of beets $25.00 to $50.00.

With alfalfa and beet top silage the feeding of livestock on the farm is going to still increase our profits. Some farmers seemed a little enthuiastic over beet tops last year but each one who siloed tops last year is so well pleased that this year they will silo more. This profit of about $40.00 we have been missing but every one from now on should silo tops and feed livestock and make more money.

There is another side to this sugar beet acreage just at the present time and that is the patriotic appeal of the government and they are not asking us to do it either without a profit. But they do seem to want the farmers who live near enough to a beet factory to grow all the sugar beets possible. Not every farmer can grow sugar beets in this way beet growers are given an opportunity of serving their country, helping to win this war.

Sugar is a necessity and the production must come from the states where factories are located. When we hear the urgent need of sugar and a price of ten dollars is offered for beets to make it profitable for every grower in poducing them, surely the beet growers will answer the call with an incerased acreage this year.

DREAM OF THE IDLE ACRE

This is the day of the idle acre. For generations, great tracts of land have lain uncultivated in this country. Some of it is so rock-bound that it never can be utilized. Still more of it we have not thought worth while to bring under the plow, because we had land which was already in condition to produce the needed crops. So these idle acres have been permitted to grow up to brush or lie heavily weighted down with rocks and stumps.

The time has come, however, when these pieces of land must be cleared up and made to produce their share of food to feed the hungry world. That much of the territory which formerly lay waste has already been brought under subjection, the largely increased crops of 1917 would seem to prove. The brush fields have been cut off and made to grow corn. The old stony pastures have been stripped of their rocks and stumps and turned into wheat fields. Hundreds of little plats of land, once grown up to weeds, have been made into gardens for the production of fine vegetables, thus becoming a blessing instead of a menace to the thrifty farmer.

But still we find the idle acre. Almost every farm has its bit of ground that might be brought under the plow successfully. There this land has lain from time immemoral, waiting for the hand of the progressive farmer, dreaming of the time when it might be given its chance to do its part for humanity.

This should be the year when the beautiful dream of the idle acre may come true. By a little extra work the brush and the weeds and the stumps and the stones may be taken from this valuable land, so that what once was an eyesore to every man in whose heart the fire of the real farmer burns shall be transformed into beauty spots—meadows cornfields, wheat fields and gardens for the feeding of the tired and starving nations of the world.—E. L. V.

FIRST bank to be founded between the Missouri River and the Pacific Coast.

FIRST state bank in Utah to be admitted to the Federal Reserve System.

Walker Brothers Bankers

Founded 1859.
Joined Federal Reserve System 1918.
SALT LAKE CITY

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Sturdiness---
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To be profitable to their owners, motor trucks must stand hard service.

GMC Trucks are built for that service. There is no pleasure car construction in them—no freak construction. For this reason their use entails a minimum of lost time; they are dependable and durable.

GMC Trucks are built in all practical sizes and each model is constructed throughout of parts specially designed to meet its particular requirements. This means the lowest possible operating cost in every model.

GMC Trucks are proving their dependability and economy in heavy mountain hauling in many parts of the intermountain west—a fact which is conclusive proof of their ability to stand hard service.

We have all six models of GMC Trucks for immediate delivery. Sizes range from ¾-ton to 5-ton capacity.

Randall-Dodd Auto Co.

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ONION SETS
Should Be Planted Now

In sections where seasons are short winter onions must be grown from sets.

WRITE TODAY FOR FREE CATALOG GIVING FULL DETAILS

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Seed and Nursery Specialists
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Solve THE LABOR PROBLEM

Here is the farm tool that has solved the labor problem as to making and cleaning ditches, grading roads, terracing and levee building.

THE Martin

DITCHER & GRADER used exclusively by thousands of farmers and ranchers in 48 states. Gives satisfaction wherever used. Does the work of 50 men. Does it quick.

Simple—Practical—Efficient

All steel, reversible, adjustable. Long life. No repair bills. Size for every requirement. Write for catalog and list of users near you free.

Every Martin is Sold On TEN DAYS' TRIAL Money-Back Guarantee

OWENSBORO DITCHER & GRADER CO., INC.
1577 Wazee Street Denver, Colo.

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How Our Government Will Assist In Drainage Work

Some of our readers have asked how much help will the government give private land owners or drainage districts in developing and constructing drainage work. There is a great deal of interest just at the present time in drainage and we are glad to give our readers the information they have asked for.

Federal drainage work in Utah, as in other western states where irrigation is the basis of agriculture, is conducted by the division of Irrigation Investigations, of which Samuel Fortier is Chief, and which is a branch of the Office of Public Roads and Rural Engineering, of which Logan Waller Page is Director. The Office is one of the great subdivisions of the U. S. Department of Agriculture and comprises all engineering interests of the Department.

Drainage work in Utah is along two general lines, one being indirect and general, the other being direct and special. The first has to do with investigational work and is closely connected with like work in other states. It has for its object the study of methods, devices and procedure and is technical in its nature. It applies not only to engineering and construction work, but to legislation, organization, administration and financing.

The second has to do with the application of principles gleaned from the first and is concerned with actual reclamation work. The service rendered is handled in two departments, one operating through individual farmers, the other through organizations of many owners, usually as drainage districts.

In the case of individual assistance, requests are received from land owners who desire to drain small tracts as units. In response to these requests, surveys and sub-surface studies are made of the injured tracts, plans for drainage are worked out and the proposed drain lines are staked out in the field and grades established. Advice is given in the matter of ordering tile and other materials and sets of instructions descriptive of the various stages of construction work, are sent to the landowners as the work progresses. Frequent inspection is afforded and in case of difficulty special attention, advice and assistance are given.

This work was undertaken, at the outbreak of the war with Germany as a war measure, and through the assistance that is being renderd some 10,000 acres of waterlogged and alkaline and are being reclaimed this year in Utah.

The other branch of the service rendered in Utah is much more extensive comprehensive and important. It has to do with operations on a large scale the units ranging in size from several thousand acres up to nearly 50,000 acres, and the total acreage covered to date being over 135,000 acres. This service has to do with actual assistance in matters of legislation, organization, administration, financing, engineering, construction and subsequent handling of reclaimed areas.

The service really began before there were any organizations with which to deal. Advice and assistance were given in preparing and improving drainage legislation. Then as soon as the law was in workable shape efforts were directed toward encouraging organization of drainage districts. This required a great deal of missionary work at first but just now there is a great activity along the line of organization. Six districts have been organized in the past year and as many more are incourse of organization.

The assitance afforded drainage districts commences with the first step toward organization and continues throughout the entire course of reclamation. Briefly the service consists of assisting those interested in the formation of a district in the determination of the proper area to include, encouraging the organization of the district through public meetings and otherwise, during the course of which the nature and advantages of organization and the methods of procedure are explained and perplexing questions are disposed of. Assistence in the preparation of petition forms is then given and the process of getting the matter before the Board of County Commissioners is outlined and if necessary assistance is given the petitioners in the matter of having the petition properly presented and acted upon.

When the district is actually organized and the drainage supervisors, who are the officers of the district, are appointed and have qualified, a memorandum of understanding is entered into between the district supervisors and the Director of the Drainage Engineers Office. Under this memorandum of understanding the assistance of this Office is afforded in a consulting capacity, the service being rendered through the district engineer and attorney. The drainage law requires that the district retain the services of a competent dainage engineer and it has been found necessary that the services of competent counsel be obtained.

There is no conflict between the duties of the district engineer and the services of the Drainage Office, but a close co-operation which works out to the advantage of the district. There is no desire or intent on the part of that Office to compete with private engineers and the practical result of the activities of the Office has been to develop engineering work rather than to take it away from private engineers. As an indication of this fact it may be stated that contracts for more than $100,000 worth of engineering work have been let in Utah in the past year for drainage work and the Drainage Office has developed and been associated with all of the projects involved.

Under the memorandum of agreement the district engineer makes the necessary surveys and sub-surface studies and in collaboration with the representative of the Drainage Office, designs a drainage system. Thus the special knowledge and experience of the representative of that Office are added to that of the district engineer.

The representative of the Drainage Office makes an extensive examination of the project and a careful study of the data that has been gathered and prepares a report. Using this as a basis the districts engineer prepares the necessary plans, specifications, forms, etc., directs the advertising and letting of contracts,

(Continued on page 14)

The Irrigation Company's Opportunity for Service

By Prof. O. W. Israelsen of the Utah Experiment Station.

Today every true hearted American is repeatedly asking himself this basic question:

"How can I best serve my country and thus best serve humanity?" Likewise corporations great and small, whose officers are genuine Americans, are officially asking themselves the same question. Careful examination of present day problems will convince every unbaised mind that there are many types of true service. Some types are inherently spectacular in nature and attract wide public attention, while others, though none the less patriotic, pass the public eye unnoticed.

Genuine patriotism is, no doubt, the chief impelling force in both types of service, but that some men are drawn into the former type through the hope of spectacular achievement and public applause cannot be doubted. The work of the irrigation company is, however, strictly in the latter or nonspectacular class. Though the nerve exciting elements are lacking in its work, its opportunity is exceptional. "Food will win the war" and in the West, the power to increase food production in very great measure lies with the irrigation company. That water and not land is the one factor which limits food production in the arid regions is generally recognized. Waste of water is therefore analogous to waste of food and waste of food is today a crime against democracy.

Right now the irrigation company has the opportunity to prevent waste of water in many ways, important among which are:

(1) By careful preparation of canals for the work of the approaching season and for future years.

(2) By adopting policies, rules and regulations which will stimulate the individual irrigator to carefully guard against excessive use, or waste, of water, and

(3) By the employment of efficient, well trained, vigilant water masters and canal riders.

The importance of careful cleaning of canals and of lining with cement to prevent excessive seepage losses cannot be over estimated. We very frequently underestimate or ignore the wastefulness of water which results from permitting moss, weeds, or brush to grow on the banks and in the bottom of our canals. The amount of water a canal will deliver is dependent on the velocity at which the water runs, quite as much as on the width and depth of the canal, and water cannot flow rapidly through a canal having poorly kept sides unless the slope of the land is excessive. Keeping the canal sides and bottom clean is not only a patriotic duty, but also a genuine service.

Reports of seepage losses in various canals throughout the West show very striking conditions. A few examples from measurements of Utah Canals will make clear the urgent excessive seepage and deep percolation losses from canals in porous soils. Canal A in a distance of 1.32 miles, lost 21.3 cu. ft. per second or nearly 45 per cent of the total amount carried.

Canal B lost 70.7 cu. ft. per second in 5½ miles or nearly 17 per cent of the water carried.

Canal C lost 3.17 cu. ft. per second or over 45 per cent of its total supply before it reached the lands to be irrigated.

Many other examples could be cited indicating excessive losses especially during the dry, or low water, season. It is frequently argued that these losses are not serious since the water returns to lower canals and is soon used again. In some cases this is partly true, but generally a considerable portion of the water is entirely lost.

Because of these facts and because of the present unusual demand for food production, there has never before been so great an opportunity for the irrigation company to serve the interests of humanity by preventing waste of water through seepage from canals. Prevention of canal seepage is equivalent to production of food.

But canal cleaning, lining, of puddling is by no means the only way to be of service. Every irrigation company should earnestly endeavor to adopt policies rules and regulations which will stimulate individual irrigators to use water economically.

Studies in two of Utah's foremost irrigated valleys indicate that over a series of years typical canals in one valley used an average of 5 acre ft. per acre each year and in the other valley, ten canal companies used an average of 6.6 acre feet per acre or enough to cover the land each year to a depth of nearly 7 feet. It is a well known fact that one half of this amount of water would have produced equally good, if not better, crops and that the land would now have been in better condition, if only half the amount has been used. The fact that half the above water would have been ample is not based on experimental evidence alone but largely on actual irrigation practice under rules and regulations of large companies which stimulate the individual water user to use water economically. Some examples are given below.

Investigations by the U. S. Department of Agriculture show that 26 private irrigation projects from 11 different States used, as an average of 12 years, only 3.9 acre feet per acre. Reports of the U. S. Reclamation Service show that 18 government projects in the last six years have used an average of only 3.1 acre feet per acre.

Estimates from 55 authorities on irrigation recently obtained by the American Society of Agricultural Engineers indicate that 65 per cent of the irrigators in the West over-irrigate their lands. Surely the irrigation company has an excellent opportunity to serve humanity by stimulating individuals to use water economically. As an example of one way by which this may be accomplished, attention need be called only to the contrast between the amounts of water used by irrigators who obtain water from those companies which base the charge for water on the amount used, and those which divide water according to shares of stock and base charges on the shares. Under the charge for quantity used an average amount of 1.6 acre feet per acre for the year 1917, on a 7000-acre tract in Utah produced excellent

(Continued on page 15)

DAIRYING

BREEDING AND FEEDING DAIRY CATTLE

W. H. Underwood.

Experience that Will Help Young Breeders.

With all classes of livestock it is a matter of importance before the animals are used for breeding purposes to allow sufficient time for quality and character of the parents on both sides to reach proper development before the progeny is reared. In many cases defects either constitutional or otherwise do not show until the animal has attained full development. In nearly all classes of livestock the best animals are the offspring of parents mature and well developed on both sides or animals that have made a vigorous, thrifty growth from birth and when bred are in good, healthy condition. Too young breeding is a drain upon the vitality and in many cases the animal never fully recovers from the effects. As a general thing, however, the dam suffers from too early breeding more than the sire.

One of the best plans of management when breeding from animals which have not reached full development is to mate them to older and more mature sires. If the sire is young he should be bred to older and more mature dams, but the dams that are being bred for the first time should be mated with well matured sires that have proved themselves good breeders and good feeders.

In breeding up a dairy herd a judicious selection of both sire and dam is vitally important, and then must be pursued a system of feeding and management suited to the purpose for which the animals are being raised. Many dairymen follow these principals only in part. For instance there are dairies where a comparatively high priced purebred sire has been purchased and used, but the owner has paid little or no attention to the possibilities of his cows, and the result has naturally been that some of the stock is good and some poor. The owners then say it is all bosh to talk about high priced sires, for their calves do not average much if any better than those from the ordinary sire. Just as great a mistake is made by many in the matter of careless feeding and management. In order to attain the most desirable results both proper selection and judicious feeding must go together, for neither is alone a success. By carefully practicing both it is an easy matter for any dairyman in a comparatively short space of time to considerably increase the product of his cows.

A certain proportion of the food of a cow is utilized in running her machinery and the question is, what does she do with the surplus of her food? If she returns it in the form of milk and butter,tat she may be a profitable cow, but if she lays it on her back as fat she is not a fit subject for the modern dairy. The cow that has a tendency to lay on fat is to be avoided if one wants cheap milk production.

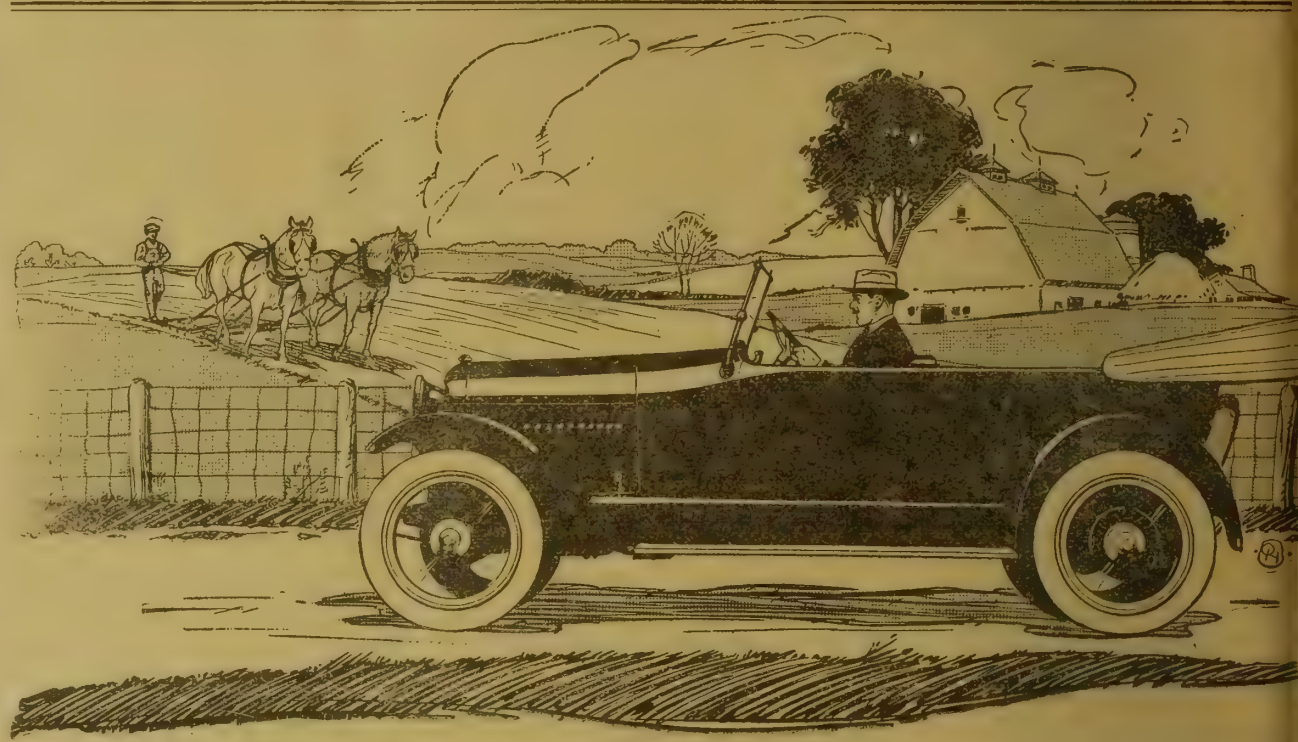
The size of the cow has little or nothing to do with the cost of milk production, as has been abundantly proved by experiments. It has time and again been demonstrated that there are large cows with comparatively small feeding capacity, and on the other hand some small cows have even greater feeding and digesting capacity than some of the larger ones. In our own herd we have both of these kinds of cows, little cows that eat less, but they are all profitable, otherwise we would not spend a minute's time in getting rid of them and putting better ones—animals that pay —in their places.

Some cows with short legs and light quarters will barely turn the scales at 900 pounds, and yet, having a capacious middle, will eat and digest more than others with long, heavy quarters with a comparatively light body and weighing 1200 pounds. Small or medium cows have greater digesting capacity in proportion to their size than large animals. This seems to hold with all domesticated animals not only as far as feeding capacity is concerned, but in strength and endurance as well. In breeding to increase size we always fail to increase strength and endurance or speed, as the case may be, in the same proportion.

That the cost of maintenance is fairly measured by the size of the animal is true only in a general way. The temperament of the cow must be and again been demonstrated that taken into consideration. An animal having a highly developed nervous system will under certain conditions require moreart of feeding include the science of food for maintenance than will another animal of the same size under similar conditions, but not having a highly developed vital temperament. Hence a nervous temperament need not be objectional.

Breeding is an art that calls for something more than a simple mating of animals of the desired breed. There must not only be the qualities in the animals mated, but there must exist also the power to transmit those qualities to the offspring. Feeding as an art calls for something more than a simple supplying of a sufficient amount to satisfy the appetite. It calls for a study of the individual needs of each animal being fed. The art of feeding is not easily learned. Men who are thorough masters of the art of feeding are not so plentiful as those who are masterful breeders. As the art of breeding includes the science of breeding, so too does the feeding. It must stand as true that however well bred a dairy herd may be it cannot prove profitable unless well fed. And no herd will be well fed unless each cow receives the necessary nutrients in sufficient quantities to meet her individual needs for maintenance and for production.

When a cow passes the dairy type to a reasonable degree and is not proving profitable there is some good reason for it. In theory the dairy type should mean a good cow, in practice the good cow always has the dairy type. The conformation and the quality should be found together always. When the former exists without the latter it is the fault of some man and cannot be justly charged up against the cow. Either the man who raised her failed to so feed her as to develop her dairy qualities or her owner is not furnishing her the proper kinds and amounts of food. The



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chances are that her early treatment was faulty. I believe more cows are ruined for dairy purposes before they are two years old than after they come in milk.

There are men who have tried to improve and breed up their herds only to get heifers that have proved inferior to their mothers. As a result purebred sires have been blamed and purebred stock ridiculed while the use of inferior animals for breeding has been continued. When a well bred heifer proves unequal to the parent stock it is usually the fault of the breeder and not of the breed. The breeder should shoulder his own mistakes and not blame the sire and dam for his lack of wisdom in keeping and handling. The nerve force must be kept up, the lung capacity made large and the digestion powerful and almost unlimited. Nerves lungs, stomach and milk secure the first three with any dairy bred heifer and the last, which is the object for which we work will not fail. This has been my experience.

Sometimes one acts too hastily and condemns a heifer before she has had a fair chance to prove what she can do in the production of milk and butterfat. If I had a well built heifer that showed evidence of being a good dairy cow and she failed to do good work the first year I would try her the second time. Full development does not come with the first year. This holds true no matter at what age the heifer is first bred. The best cow in our herd has her third calf and it would take big money to buy her today. As a heifer her first year's work was not satisfactory and many men would no doubt have discarded her. But she came from a good cow and carried in her body the markings of a good dairy animal, so we kept her for another trial. She is now proving the wisdom of that decision. So I say that I believe many heifers are condemned too hastily.

The more uniform the herd the less individual variation. This is a strong argument for a herd of the same breed if not of the same family, for feeding would thus be simplified and labor saved and profit increased. The breeding and feeding of cows for greater production not only results in better cows and more profit, but the men in charge are made wiser.

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TESTING CUTS DAIRY EXPENSE

Dairymen who have had their profits reduced by increased feed cost will find considerable relief through cow testing associations. The cow testing association places responsibility on each cow to demonstrate her ability to pay for her feed and return a profit to her owner. The loafers in the herd cannot be detected without some system of records. The cow testing association enables the dairymen to calculate the amount of milk and butter-fat which each cow returns for the feed she consumes. A system of records will disclose some eye-opening facts concerning the production of individuals of the herd.

Cow testing associations afford a means for co-operative buying of supplies and also facilitate improved methods of feeding. The results which have been obtained by cow testing associations in Missouri indicate that a large number of dairymen, who are not keeping records, are feeding some cows at a loss. Sometimes this loss may be attributed to poor producers, poor management, or lack of proper feeding. Savings brought about by cow testing have more than paid expenses during the first year. Marked increase in the production of the herds, and the corresponding reduction of the feed cost in comparison with the milk and butter-fat yield always follows.—Farm Machinery.

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MANURES

Farmyard manure is the safest and best of all fertilizers and unfortunately it is getting scarcer as the automobiles become more plentiful. It is a complete fertilizer in itself, containing all the plant foods from the soil, water and air, and in addition when it is plowed under it separates the soil, allows water and air to enter freely.

By its decomposition it creates heat and warms the soil, carbonic acid is given off and in conjunction with lime plant foods made soluble and essential bacteria brought into being.

These important functions are not all produced by artificial fertilizers and for this reason they are not complete in themselves, but need the addition of green crop plowed under to bring the soil in good fertile condition.

Nitrogenous manures give luxuriance of growth. When the foliage is dark green, the growth soft and sappy, it is pretty sure evidence there is abundance of nitrogen in the soil. To check this rankness of growth, phosphates, potash and lime should be added to encourage the formation of flowers and fruits.

Natural substances that supply nitrates are such as animal manures, fish, night soil, etc. In artificial form it comes in the form of nitrate of soda, nitrate of potash, sulphate of ammonia and other mediums. It may be added to the soil through the medium of muriate of potash, sulphate of potash and kainit.

Calcareous manures are of much importance to the soil, and are usually added in the form of hydrated lime. The value is not so much in the lime itself, as the chemical action it sets up. It liberates plant foods stored in the soil, making them soluble and so available to the plant. It follows that the constant use of calcareous manures tends to impoverish the soil unless other manures are added.

Phosphatic manures produce firmer growth than the nitrogenous manures and tend to an earlier production of flowers and fruit. Bones, superphosphate, wood ashes, basic slag are the chief source of supply of the phosphoric acid which is an ingredient of every part of a plant and so very essential.

Potash manures, nearly all soil contains liberal quantities of potash, but it is often locked up with other elements and not available for the plants until liberated by cultivation and the application of organic manures. The Nurseryman.

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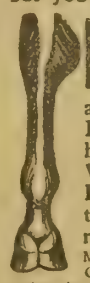

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If you plan to build a silo this year now is the time to secure your seed corn. Consult the county agent for the best kind to plant in your locality.

Make war on the gophers and rodents. Confer with county agent and ask him how the government and state are helping. Now is the time to fight them.

When the spring clean up comes do not burn the leaves but use them as a fertilizer. They are worth the time taken to conserve them, the soil needs any form of available organic matter.

The farm paper is looked upon as one of the greatest helps in the work of production. The farm paper serves as a medium by which the government can reach the farmers of the nation. This is one reason why every farmer should be a reader of a farm paper.

We must plant every foot of ground and make it produce food stuff this year. No one would want to be accused of being a slacker, one might be called this if he owned land and did not put it to producing food or feed. If we can not fight we can produce.

Keep the young stock growing. This is good advice for colt, calf, sheep or young swine. They should be encouraged to eat, exercise, rest and grow. Careful management of the mother is important as she will have an influence upon them at this time.

The scarcity of garden and vegetable seeds suggest a more careful use of them. Instead of sowing too thick and then thinning out the plants to the desired distance in the row, spend a little more time in sowing the seed and get them spaced about right. This will make the seed go further. Another way would be to transplant the thinnings if thick sowing is practiced.

Every piece of valuable, useful, helpful machinery should give a maximum service these days. If you own a tractor and have your own work done you should assist a neighbor. The question of food production is a community affair or a national problem. Plan with your neighbors, they will pay you for service rendered. Our big problem is to get a maximum service out of machinery and a maximum yield from the soil.

The best way to control the house fly is to destroy its breeding place. This is usually the manure pile or some decaying vegetation. If good use is made of manure, applied to the field immediately, it can not become a breeding place for flies. A good clean up of the barn yard will help control flies and the manure put upon the land will pay well in the way of increased production.

Plan to keep your land busy all the year round. If an early maturing crop is havested and there is still time to mature another before the end of the season, don't fail to make the necessary planting. Sometimes a root crop like turnips, will greatly help your feed supply. A little planning and thinking will make your garden and parts of the farm produce more and what is more will prevent weeds from growing. Now is the time to study intense farming for profit and production.

MAKE YOUR FARM HOMELIKE.

What a pleasure it is to visit a farm that has been planned for a home. With its trees, flowers, garden and other things that goes to make it homelike. When you find such an ideal farm you seldom hear of the children wanting to leave it and go to town. The home does not need to be a costly one to be homelike. Often there is more love and real enjoyment in a farm home than the costly residence where every luxury can be secured. If there is a desire in the heart of those on the farm to make it home like it will be an easy matter to do it. Flowers, trees, a well planned farm-like-home will be the result.

RAISE A PIG

There is profit and a good way to show your patriotism in the raising of one or more hogs. There are a few farm homes where no hogs are raised. As a rule a pig can be raised on the waste or what is thrown away by the average family, together with the weeds and green stuff that is grown in the garden and wasted. To raise a pig and convert this waste material into valuable food products is a profit to the owner and a way to show your desire to help production. Hogs will produce two of the most important things wanted by the government, meats and fats. When present conditions will make money for the one who will raise them. A little grain and plenty of good pasture will produce a hog for less money than any other way except those that are fed from waste.

WE POINT WITH PRIDE

We point with pride to the work the Utah Farmer has been doing the past few months. If the letters we are receiving and expression of kind words given us, are any thing to go by, our readers appericate the effort we are making to give them a good farm paper.

Many of our readers apperciate the fact that we will not allow certain kind of advertising to appear in our columns. That our paper is free from medical, get rich quick, tabacco and other simular advertising. Only this week we were offered a contract of $1,200 for a year's contract of advertising we turned down because it did not come up to the standard set by the Utah Farmer.

The helpful suggestions and insperational articles appearing in the Utah Farmer have pleased and helped our readers. We are backing our government every way possible and trying to help win the war. We want to thank our readers for their good will and support for without them we would not get very far.

VALUE OF GOOD ROADS

When a farm is offered for sale that is near or on a hard surfaced road it is a big help in the selling of that farm, it adds value to it. Soil and other conditions being about equal a farm will bring a few hundred dollars more when located on a good permanent road. The advantage of being able to go to town, visit neighbors, or get to market with any product of the farm any day of the year is worth something to every farmer.

When we talk bonding or cost of permanent roads there are always some who oppose them, once they learn their value however, they are often some of the best boosters for good roads. Good roads are like a chain, if some of the links are weak the strength or use of the chain is weakened just that much. If a public highway has weak spots, mud holes in it, the cost of getting by them must be considered and the load reduced accordingly. Why not a complete permanent highway through the state and then build other roads leading to it.

TOO MUCH ADVICE

If one was to listen too and read all the advice that is handed out to the farmers at this time by the press and public he certainly would be inclined to say there is too much of it. One case of mistaken advice was telling the farmers to do no building until after the war. Think of advising a farmer to build no more silos when the conservation of food is one of the important things the government is asking them to do. The production of livestock so necessary on every farm can be greatly aided by having plenty of silage, in other words by building more silos. A barn may be necessary for economical production, if so it ought to be built.

The trouble with so many who would like to advise the farmer what to do and what he should not do, knows very little about farm life. The average farmer is working hard and doing his part and is not in need of so much "free" advice.

BATTLE HAS BEGUN

The farmers battle has begun—the busy season is on—everything possible must be done to produce the biggest crop of food stuff ever produced. We set a high mark last year producing a big increase over the year before, what will be the increase this year.

We start the year under more favorable conditions than last. The call however, is even more urgent. Every farmer is asked to give the best there is in him for the production of food for ourselves, and soldiers and the people who are fighting with us.

The task we ask of the farmer is no easy one, yet he will make good. Every farmer must do his full share—must produce to the limit. We must not however over estimate our own strength. We must reserve our strength, use judgement as to length of hours, etc. Strike hard when it will count the most. Use your head, plan, think as any general must do to win. The battle is on, it is no easy struggle, but we will win because we believe in the work we are doing.

ARE WE DOING OUR PART

Now that the great Hun offensive is on we read each paper to find out what our boys over there in France have done. If they have held the lines, if they have taken any prisoners or if they have started the Huns back on their way to Berlin. How eager we await the news.

Papers from "somewhere in Utah" are going to be read by the boys "over there" and they will want to know if we have made our big spring drive and planted every acre. If we are going to make every acre yield all they possibly can. How much more secure will they feel if they know that there will be plenty of food stuff. How do you think they would feel if the papers, told how a certain farmer was not going to plant wheat because the price or market conditions were not right. How another farmer would not plant a few more acres of sugar beets because there was a prospect of a labor shortage.

If we are going to do our part, we know there is a lot of work ahead of us this summer. Long hours and not the usual amount of pleasure.

How proud we will feel when the harvest is gathered to know that we "went over the top" and produced the greatest amount of food stuff ever grown. We are in this war to win, the fight is here at home as well as over in France, we must produce and help feed our allies and back the boys who are fighting in France.

Utah's Experimenters In Agriculture

Joseph Eames Greaves.

There are several good research men at the Utah Experiment Station. Not one of them, however, gives himself more devotedly to his work than does Dr. J. E. Greaves, the Station chemist and bacteriologist. Dr. Greaves is also Professor of Physiological Chemistry and Bacteriolgy in the instructinal department of the Utah Agricultural College. Not many men are willing to shut themselves in the laboratory and wade through the routine of close research. Of all fields of research none are more taxing in this respect than chemistry and bacteriology. Not only must the work be supervised every minute but new methods are essential to real progress.

Not only must the worker in these fields be a good worker but he must also be a thorough student and have an inventive turn of mind. This calls for imaginative powers of an extremely active sort. New devices must be thought out and tested by an imagination so vivid as to see the faults. In other words, the man who perfects methods must see the device in every step of its use long before he has even collected material out of which to construct it. Literary men and women pride themselves on imagination. Let them, however, tread gently on the man of research. Which is the greater power—answer honestly—to reconstruct the past or to build the future? Pioneers in any field are strong men, but over and above this they must be farseeing men and also men of constructive visual powers. Some of these powers are often paid for dearly in lack of social pleasure. Dr. Greaves has paid the price of full success in research and yet has not lost his social instinct, as many others have done.

Born at Logan in November, 1880, Joseph E. Greaves spent his boyhood on a farm, acquiring first-hand experience with things agricultural. He did his elementary school work and about one year of high school work at the Onedia Stake Academy in Preston, Idaho. He then studied at the Utah Agricultural College, taking his B. S. degree in 1904. He was assistant chemist at the Utah Experiment Sation from 1904 to 1908. He studied at the University of Illinois and received a M. S. degree there in 1908, then becoming Assistant Professor of chemistry at the Utah Agricultural College. During 1910 and 1911 he had the Thompson scholarship at the University of California from which he took his doctor's degree in 1911, whereupon he was made Associate Professor at the Utah College. Next year he was given a full professorship as head of the department of Physiological Chemistry and Bacteriology. During this time he was constantly Station chemist or an associate in that work.

In 1911 Dr. Greaves published a new method for the determination of the protein of wheat, corn, and other cereals. This method was at once copied not only in English but in German as well, which nation was then thought to lead in chemical work. His method was copied almost word for word in "Die Physikalische Chemie der Proteine" von T. B. Robertson, published at Dresden, Germany, in 1912. His work on the fixation of atmospheric nitrogen by bacteria has received similar attention. The Chemical Society of England publishes in its annual reports summaries of worthy research. The work of Dr. Greaves has been mentioned in the report for every year since 1911. To illustrate, take the report of 1916. "Soil Fungi and Bacteria" was given 7 1-3 pages, of which Dr. Greaves was given nearly two full pages. The same year only 1¾ pages were allowed to "Fixation of Nitrogen" all of which was given Dr. Greaves' work. On crop rotations he has done work nearly as well-known. It is not necessary to argue that Dr. Greaves holds a place in the scientific world: the facts peak for themselves—and "facts are stubborn things."

In spite of all his research, Dr. Greaves has found time to write. He has published many scientific treaties. Among these are three Utah Station bulletins and 24 articles in scientific magazines, three of which appeared in German. In addition, the Utah Farmer has published much from his pen. Besides, all the agricultural colleges of the country teach his findings to students in soil bacteriology and nitrogen-fixation.

Dr. Greaves has been elected to membership in the American Association for the Advancement of Science, in the Society of American Bacteriologists, and in the American Chemical Society.

Who shall say these things are not worth while?

———o———

Why are the Germans called Huns? The Huns were a cruel, warlike race that lived in Asia about the time of the dawn of the Christian era. In the fifth century they overran and desolated a large part of Europe and laid Rome under tribute. Apparently the kaiser of Germany admired the deeds of these barbarians for when he sent his troops to China in 1900, he instructed them to show no mercy and take no prisoners. Said he, "As the Huns, under King Atilla, made a name for themselves which is still mighty in traditions and legends today, may the name of German be so fixed in China by your deeds that no Chinese shall ever again dare to even look at a German askance. Open the way for Kultur once for all." Since then he has been proud to call his soldiers Huns, and their deeds in this present war show they are trying to live up to their title.

The proofreader on a small Middle Western daily was a woman of great precision and extreme propriety. One day a reporter succeeded in getting into type an item about "Willie Brown, the boy who was burned in the West End by a live wire."

On the following day the reporter found on his desk a frigid note asking. "Which is the west end of a boy?"

It took only an instant to reply: "The end the sun sets on of course."

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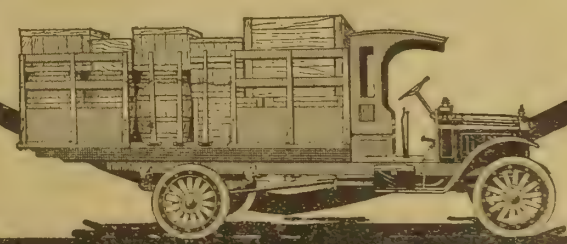

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Corn a Dry Farm Crop

By J. W. Paxman, Specialist in Dry Farming.

Much of the fallow upon our dry-farms can and ought to be utilized in growing corn, both for grain and ensilage. This practice would help the food situation some and do much to solve the problem of feeds.

In sections of frost-free periods of 90 to 100 days and where the soil is not too heavy and cold corn can be successfully grown and brought to maturity on most of our dry-farms. Plowing should be done in the fall of the year and the ground stirred deeply, too, if best results are to be obtained, although under some conditions spring plowing has given satisfactory results.

The ground should be well worked by harrowing and disking early in the spring, packing or refirming the under soil and providing a dirt mulch on top. If surface is uneven a leveler should be used, but followed with a harrow. All this should be done while the soil is moist but not wet and soggy.

Planting should be very light. Many make the mistake of planting too heavy. Rows should be 42 to 48 inches apart and the hills same distance with one to two kernels in hill. Never more than two kernels and one would be better if that one is sure to produce a vigorous plant. More fodder and more corn will result under average conditions by thus planting. Check row if possible then cultivation can be more efficiently done. The depth of planting should be determined by the moisture. Place seed just deep enough to insure a good germination.

The spiketooth harrow can safely be used for cultivation until the plant is 6 to 8 inches high, then the corn cultivator should be used frequently until tassels appear. Corn, perhaps more than any other crop, responds generously to cultivation; so cultivate well and often and don't allow weeds to grow. If the crop can have good, thorough, clean cultivation during the entire season, the land can be harrowed (after harvesting the corn) and planted to fall wheat, and in all pobability, give as much in the bushel measure at harvest the next season, as if let lie in fallow in the ordinary way.

Use the Australian or Jumbo White Flint seed in preference to other varieties. Apply to State Council of Defense, Newhouse Building, Salt Lake City, for seed.

Planting should be done soon after warm weather sets in and the cold storms are over. No particular injury will result from slight frosts early in the life of the plant, although warm weather promotes vigor in the plant and a speedy germination.

STRAWBERRIES

Rotation of crops is one of the secrets of successful agriculture, and the same is true of horticulture. Strawberries after strawberries is not a success. Just look back at Wisconsin in the wheat business, wheat after wheat till the chintz bug took the crop and then went for the corn field. Coal tar and dust mulch would not stop them. Then the cow question came up and dairying has made Wisconsin famous.

Strawberry Ground.

Any good corn ground is good. It needs at least two years to prepare the soil, first year a crop of clover, second year potatoes; with each of these crops a heavy coat of barn yard manure. The potato field must be kept clean of weeds and it will be best to plow it in October leaving it as rough as possible. In spring apply a generous quantity of well rotted manure well disked in and ground well harrowed early, and just before planting the strawberries disk and harrow again. Mark the ground three feet eight by two feet.

If you have to buy your plants have them on hand promptly. If they come too early heel them in by opening the bunches, and lay them in nice moist dirt. They can remain thus for a week. Sprinkle them lightly but never wet them in the bundle.

Planting.

Every man should have a dibble and a dish of plants in about an inch of water and the plant put so the bud is just level with the surface soil, but well pack the soil to the roots. It is the style now to have a packer to firm everything transplanted. I used to transplant with a planter, but I had to go after the gang and put my heel on every plant. I then went bank to the spade and the dibble.

Every plant should be reduced to two leaves and all the fruit buds removed. The plan of preparation of soil given is for field culture; for the garden follow pea, bean or potato patch. Spade up eighteen inches deep working in a good quantity of manure, a good quantity is a two horse wagon load to every square rod. The subsoil should be well spaded over but left in the bottom of the bed.

I spent ten days last fall making a bed twelve feet by forty feet eighteen inches deep. If I had been forty years younger I could have made it in half the time. The more work you put on the ground preparing it the better the crop; this applies to everything. Don't let the gang of planters get out of the field till your cultivator follows them and cultivate every week till October and hoe as often as necessary but never more than an inch deep.

EARLY CULTIVATION

F. Hollier.

A little neglect in cultivating the garden is likely to be serious especially if weeds are bad or drouth should come. It is not safe to take any risk if one expects to get the best results in gardening.

Young garden plants at this season of the year will require ample cultivation. Especially is frequent and timely cultivation desirable when there are heavy rains and the land has a tendency to "pack" or "bake." Unless the land is stirred at the proper time it is likely to get hard, and hence, unless rains continue, it will be a very difficult matter to cultivate later on.

When land "runs together," as it does when vegetable matter is not present in large enough quantity or when the land is "stiffi," tenacious, containing a large per cent of clay or silt, considerable difficulty may be met after heavy rains. Care should be taken to cultivate promptly, with the proper implement and in the right manner.

Unless a surface soil mulch is re-established after heavy rains the soil particles will come into close contact as they do when the soil "packs," and this will be a very favorable condition for rapid loss of moisture. When conditions are as has just been described, capillary, the moisture around the soil grains, will rise to the surface through the hair-like tubes between the particles of soil and the moisture be evaporated when it reaches the surface. But when the soil mulch is made on the surface much of the moisture is held under this cultivated surface, which of course is one object in cultivation.

Where ground "packs" after heavy rains it may be a rather difficult matter to get it thoroughly pulverized. In this event, where the garden rows will not permit the use of the harrow, it is a good plan to follow with a garden rake and pulverize the clods and smooth the surface. Unless this is done there are likely to be clods that leave the soil open, which will permit the wind and the sun to rob the soil of moisture. Good tillage requires that there be a mellow mulch on the surface a few inches deep, depending upon the soil, and that the surface be as near level and as smooth as is convenient with the lay of the land and the stage of the plants.

If you believe your soil will pay for the extra expense you are likely to make greater investments.

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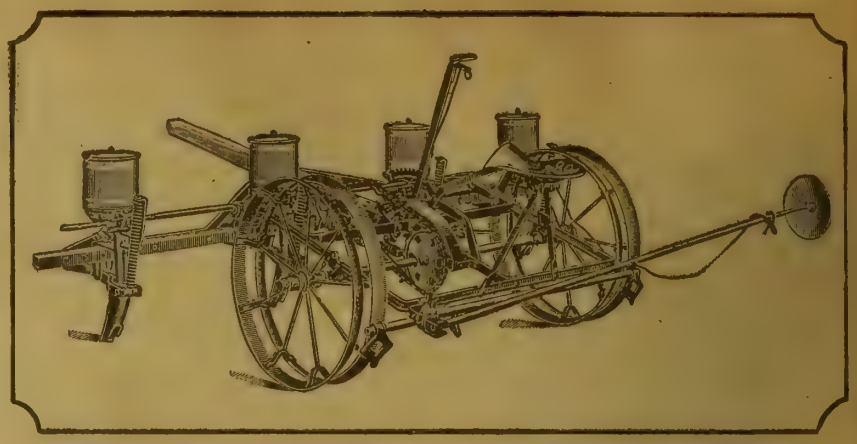

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Any kind, shape or variety of seed ranging in size from cane seed to lima beans can be planted in the best possible manner in the shortest time by the Moline Four-Row Bean Planter.

You have the choice of using either edge or flat drop plates. Each style has its advantages—both styles are regularly furnished.

Seeds of a rounded character—such as kaffir corn, milo maize, navy beans, cranberry beans, etc., are best handled by a round hole plate, while such seed as kidney beans, lima beans and field corn the edge drop plate with cells properly fitted is better adapted.

A uniform planting depth is maintained because each furrow opener is held to the ground independently of the others by spring pressure. Rows from 24 to 36 inches apart can be planted with the Moline Four-Row Bean Planter.

It is well constructed throughout, seed cans and furrow openers being supported on a heavy, square and very stiff steel pipe.

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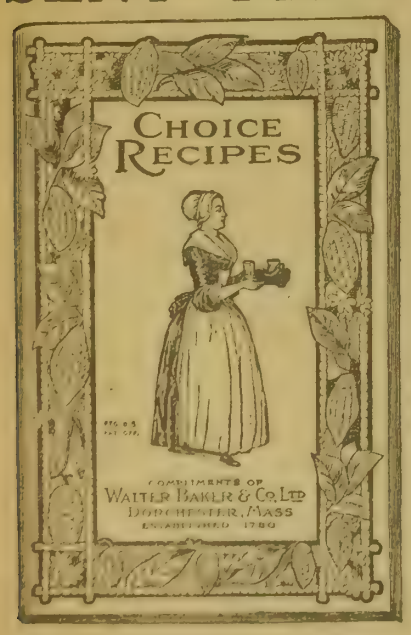

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A good citizen is known by the food he eats.

GROWING ASPARAGUS

Fresh asparagus is one of the most delicate, appetizing and wholesome products of the home garden. It comes along early in the spring, and a bed once established needs only to be kept clean and well fertilized to produce for many years.

Not only for the home table, but for the market, the asparagus crop is profitable, for there always is a good demand for it, and the surplus from the farm finds a ready place in town.

Asparagus can be grown on nearly all kinds of soils, but a sandy loam is preferred. In growing asparagus for home use the type of soil is not as important as a convenient location for the bed. As a rule, the home supply of asparagus is grown in the garden, which should be located near the house.

For the commercial planting of asparagus a light soil should be selected, because of its earliness and the ease with which the crop can be cultivated. If the soil is not naturally deep and well-drained it should be deeply plowed, subsoiled, and drained by means of tile or open ditches.

On land that does not wash badly the soil should be plowed in the autumn or winter in order to get the benefit of freezing and thawing. Before planting, the soil should be thoroughly pulverized by disking, harrowing and planking or rolling. Stirring at frequent intervals until the asparagus is planted will keep down weeds and hold the soil in a loose, friable condition.

As asparagus is grown mostly on soils deficient in humus, barnyard or stable manure is the most valuable fertilizer. The manure adds both plant food and humus and increases the water-holding capacity of the soil.

Where coarse manure is used on land to be planted to asparagus it should be applied broadcast at the rate of twenty to forty tons per acre and plowed under, preferably in the fall. Well-rotted manure is usually applied after the land is plowed, and then thoroughly mixed with the soil by harrowing.

Well grown one year old asparagus roots are best for planting purposes. These may be secured from a plant grower, a seedsman, or a nurseryman, or they may be grown at home. When the grower produces plants at home he can make his own selection, discarding all inferior roots and using only strong, healthy ones. In this way the development of the asparagus bed will be more uniform than where the plants are purchased and no selection is made.

For growing the roots, a rich sandy or loam soil should be selected. The seed should be sown 1 to 2 inches apart in rows 15 to 18 inches apart for hand cultivation and 2½ to 3 feet apart if horse cultivation is to be given, and it should be covered to the depth of 1½ inches. After the plants are well established they should be thinned to stand about 3 inches apart, only the strongest plants being left in the row. Throughout the season the soil should be kept well cultivated and free from weeds.

Spring planting is prefered, because roots planted in the autumn may be injured by freezing before they become well established. Where spring planting is followed, the roots should be planted as early as the weather and soil conditions will permit.

After the soil has been thoroughly prepared, deep furrows are opened by running a turnplow two to four times where each row is to be located. The rows should be about 4 feet apart for green asparagus and 5 or 6 or even 8 feet apart where white shoots are desired.

The plants are set 15 inches to 2 or 2½ feet apart in the row, the greater distance being required for large-growing varieties on soil very rich in nitrogen. The roots or crowns should be set in the bottom of the furrow and covered to the depth of 2 or 3 inches at first, and the trench gradually filled up as the plants develop.

The depth of soil over the crowns should be 6 to 8 inches in light soils and 4 or 5 inches in heavy soils. It should be borne in mind, however, that the crowns should not be covered to the extreme depth at first, as the young shoots might be smothered before they reach the surface.

For a small home garden, asparagus roots are sometimes planted 12 to 18 inches apart each way, but this system is not very satisfactory. A better method is to plant one row across the garden, spacing the plants 15 inches apart in the row. If more than one row is necessary, the rows should be 3 feet apart, so that cultivation can be accomplished by means of horse or hand cultivators. Asparagus should be planted at one end or one side of the garden, where it will interfere the least with the plowing and preparation of that part of the garden used for annual crops.

During the first season a crop of bush beans, peas, early cabbage, radishes, lettuce, or some other hoe crop may be planted between the rows. Tall-growing or long-season crops should not be grown with asparagus. The cultivation required by the asparagus will be sufficient for most of the companion crops also, and the return from such a crop should go a long way toward paying the cost of growing both.

Frequent shallow cutlivations should be given to keep down weeds and to conserve the soil moisture. Some hand hoeing may be necessary to keep the soil loose and to control the weeds between the asparagus plants in the row.

The length of time an asparagus plantation will produce profitable yields depends upon the treatment it receives. A well-established bed which receives good cultivation and fertilization each year should produce profitable crops for fifteen to twenty years.

During the first and second years of an asparagus plantation no shoots should be removed, but at the beginning of the third year some of the crop may be harvested. Even during the third season, the cutting season should be short, as it is important to have large, well-developed crowns for the production of good asparagus.

Asparagus is usually harvested every day during the season, preferably in the morning; and when growth is very rapid it is often necessary to go over the plantation twice a day.—Wisconsin Agriculturist.

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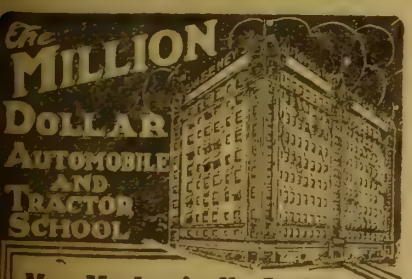

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NEVER before has the demand for Automobile, Tractor, Truck and Aeroplane motor Mechanics been so great. Your service is needed in the Army, driving and repairing Trucks and Ambulances; in the Aeroplane section repairing motors; on our farms using Tractors; besides, remember that this country has 4,000,000 Automobiles. Thousands of mechanics who formerly took care of them are in the Government service. **Somebody** must take their places. It is up to you to take the places in the garage, etc., of the men that must go. **Realizing** these conditions I have made preparation to train men to fill these important positions. The demand for men is here. I am ready to train them. If you are in the draft come here and **be trained** so that you can give **a special** service to your Country.

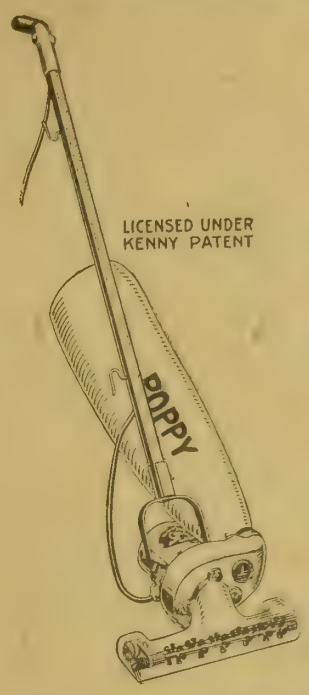
WRITE FOR FREE CATALOGUE.

I have written a catalogue that shows pictures of all departments and describes my school. I want you to have it. It will tell you how I teach the Automobile, Tractor business; open your eyes to the opportunities for splendid positions at good money. This Country **must** have trained Mechanics. Take advantage of present conditions, **write for my free catalogue**; it's a trip through the greatest school in the world. Today is the day of opportunities, grasp them.

E. J. SWEENEY, Pres.,
Sweeney Automobile & Tractor School,
508 Union Station Plaza, Kansas City, Mo.

What 5c worth of Electricity will do

Electric Washer: 5 cents' worth of current will run a washing machine for 2½ hours continuous running—more than a big family requires for two wash days.



Electric Vacuum Cleaner: 5 cents' worth of current will do a weekly cleaning of a ten-room house.

Electric Sew Motor: 5 cents' worth of current will make one million stitches on the sewing machine.

Electric Iron: 5 cents worth of current will give a steady ironing heat for continuous work, one hour.

Electric Toaster: 5 cent's worth of current will make 60 slices of delicious, just-right toast.

Thus, for a few cents each week, electricity will do your housework, and save you many hours of the hardest kind of drudgery.

The demands upon your time, due to Red Cross and other war relief work, are greater than ever before. By shortening the hours required for your housework, electricity provides the time needed for these patriotic duties.

You can purchase all electrical labor-saving appliances at our store on easy monthly payments. Won't you let us explain to you more fully how much time and how much hard work electricity will save you in your home at very small cost.

Utah Power & Light Co.

Efficient Public Service

STATISTICAL FILLERS

During a three and one half year period, beginning July 1, 1914, the United States exported to the Allies more than 616,000,000 pounds of fresh beef and nearly 203,000,000 pounds of canned beef.

———o———

"The United States is obligated to send 1,000,000 tons of food each month to the Allies, and is going to do it."—Vernon Kellogg.

———o———

Nothing is as usual; why eat as usual.

MY WAR GARDEN AND HOW IT GREW

Belle Barker.

Through patriotism and necessity I became the principal caretaker of the garden this year. It was a plot about seven rods square and had been used for a garden continuously for 20 years, if not longer. We had plenty of well-rotted barnyard manure and this was spread liberally over the ground before plowing.

We sow everything in drills so that it may be easily cultivated with a horse. We plant corn, beans and peas with a corn planter. This allows rowing only one way but that is the prevailing custom now.

On the dryest eastern slope we planted our beans. Next we planted eight rows of sweet corn, both early and late varieties to insure a longer period of green corn eating. Next to the corn came our row of Swiss Chard for those delicious greens which it furnishes from early summer until frost. Next was a row of red table beets with a few radishes at one end. Then one row of Dutch Multiplier onions with a few potato onions for trial at each end. Next was a row of parsnips and lettuce. Parsnip seed is always slow to germinate so we plant alternately a few seed of parsnips and lettuce in the same row. The lettuce comes up quickly and shows the row to make weeding and cultivating easier.

We next left a row for 18 tomato plants and one for cucumbers in hills and one in drills. Next we planted about seven rows of early potatoes. Then one row of Telephone and one row of little Gem peas and the remainder of the garden to Yellow California and Red-eye beans.

We had no sooner than finished planting the garden than the rains descended and the floods came. I think I never saw so much rain fall in one season before. Part of the beans rotted in the ground and had to be planted over. The lettuce and radishes came up, but before I knew what was doing it the snails had entirely devoured them and they had to be replanted. Only one parsnip condescended, or rather ascended, to show up so we used the space allotted for them to transplant the table beets we thinned out.

We planted cucumber seed five times before the snails would allow them to grow although we spayed with tobacco water, bug death and other things. They seemed to chew the tender stalks below the ground. At the last sowing the weather was dry and the snails did not trouble them any. Everyone said we would get no cucumbers by such late planting but we got more than we could eat. Perserverance won.

The men cultivated the garden twice with horse cutlivator and the rest of the weeding I did with a hoe lubricated with elbow grease. I did most of my hoeing and weeding in the morning before the sun was too hot and in the early evening when it was cooler. We had an abundance of green vegetables in pleasing succession and variety through out the year.

Our tomatoes, which we did not set out until late through fear of frost, bore abundantly but did not get ripe. We picked and spread the green ones upstairs on the floor in a dark, warm hall, and as they reddened removed them to sunny south windows to finish ripening. We had fresh ripe tomatoes at Christmas time.

We dried and canned a large amount of sweet corn besides what we ate and gave away.

We like to put beets in a box and cover with dirt to keep them fresh but we ate most of ours this year as they ripened.

Although we ate an enormous amount of green onions I gathered one and one-half 25-lb flour sacks full of sets this fall. The beans which we did not use for shell beans, string beans and pickles we picked and shelled by hand when ripe. Though they did not grow large we had some Hubbard squashes.

This is the simple story of my "war" garden and how it grew. Considering the unheard of season and my limited time I called it a gatifying success.

BIG FARM CROPS ESSENTIAL FOR VICTORY BY ALLIES

Farmers of Northern and Western States Are Told the Serious Situation That Confronts Forces Battling for Democracy.

The individual duty of every farmer to produce large crops this year from his land is being strossed by a group of prominent agricultural speakers traveling through the Northern and Western States, after conferences in Washington with Secretary of Agriculture Houston and Food Administrator Hoover.

Every farm in every locality should strive to feed itself. This is imperative as a measure of supply in each community and so that all unnecessary transportation of foodstuffs may be avoided. Every farm should have a home garden and should store, can, and dry a sufficient quantity of fruits and vegetables for home use throughout the year.

Throughout the States where spring wheat can be grown profitably, the Department is calling attention to the need of planting a large acreage. The latest information upon the wheat situation abroad shows that the Allies produced last year but little over one-third the wheat they produced prior to the war.

Early fall frosts followed by wet weather and severe freezing have made the seed corn problem thorugout the corn belt exceedingly difficult, making campaigns for ear-tested seed imperative. The planting season must find every farm of the great corn belt with an adequate supply of seed corn that will grow.

A 15 per cent increase in the number of hogs is needed, as pork is the mainstay of the ration of the laboring man and the soldier and the need for more fats is acute. The acreage of alfalfa, clover, and other leguminous forage plants should be maintained or increased to conserve more grains for human consumption.

The dairy industry must be maintained. The dairy cow produces more food with less feed than any other of our domestic animals, so that dairy products are most economical in conserving foodstuffs. Skimmed milk converted into cottage cheese has as much food value as meat and should be increasingly used.

Town Should Help Out in Farm Labor Problem.

The farm labor problem must be met by closer co-operation between town and farm folks. The towns must realize that the bulk of their population came from farms and that in times of stress those of their people who are farm-bred should help out the farming community during the peak of its labor load at planting and harvest. Local business men's organizations have shown a desire to co-operate with the farming interests sympathetically and to the fullest extent necessary whenever they have been solicited to do so. They realize that the farmer is not alone responsible for the production of food if the towns deprive him of necessary labor for nonessential purposes.

Will Lease Dairy Farm

Because of reasons which will be satisfactorily explained, we can lease one of the best Dairy Farms in Utah, on very easy terms. Any applicant must be able to handle a business proposition, and progressive man with sons large enough to do farm work preferred. This lease will make the leasor wealthy, for the milk sells for 60 cents per gallon and there is a larger demand than can be supplied. But this is a high grade proposition.

This farm is located within 5 miles of the business center of Salt Lake City. It consists of 180 acres of good tillable and pasture land, a large modern barn with stanchions for 52 cows. Modern milk house and bottling plant. Comfortable 4 room house. Sheds, coops, etc. 25 Registered Jersey Cows, bull, 6 work horses, automobile delivery truck, wagons, machinery, implements, equipment etc. At the present time income is $600 per month, but can prove that with good management it has brought $1200. This is the chance of a life time for the right family.

C. H. Carlquist & Co.

Was. 4979 No. 421 McIntrye Bldg.
SALT LAKE CITY, UTAH

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY
Ogden, Utah.

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25 to $50 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAUHILL INVESTMENT CO.
343 Main Street Salt Lake City

Go to Lakeview, Oregon now and purchase an alfalfa farm under the Goose Lake Valley irrigation project. Price $50.00 to $75.00 per acre. $5.00 per acre down and the balance in 20 annual payments, with interest at 6 per cent. Land is level, soil black loam, neighborhood is well settled, free wood, posts and fine outside grazing on the National Forest. Soil very productive. For particulars call or write E. J. Groesbeck, Room 53, City and County Bldg., Salt Lake City, Utah

RANCH BARGAIN

600 acres deeded land.
340 acres contract land.
150 acres hay, grain, etc.
150 acres pasture, fenced.
100 head cattle, 9 head horses.
Complete set machinery and implements.
7 room house furnished.
Excellent range facilities.
Price complete $20,000.00, half cash, terms on balance at 6 per cent.

R. G. Agee
374¼ Ogden, Utah.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

RELIABLE FARM BARGAINS

60 ACRES IN CACHE VALLEY. This property lies immediately under the canal and we are offering it for $115 per acre. It is one of the oldest farms in Cache valley and has been farmed very successfully to oats, alfalfa and sugar beets. We can accept 10 per cent down and ten years on the balance. This property is located near a good town, schools and two grades in high school. Good water for domestic purposes and first-class irrigation water. There is still some due on the water.

40 ACRES IN CACHE VALLEY, right near the railroad station, right near a good town, schools churches, and other social conditions are first-class; good water right, water for domestic purposes; on the country road. This farm has been planted to alfalfa, sugar beets, potatoes and grain. $120.00 per acre, ten years to pay, 7 per cent. There is still some due on the water.

We have two or three small pieces of land for sale in the Bear River valley, one piece of 12 acres right by the station at Tremonton. This property has a full water right and is accessible to the city water, electric light and other modern conveniences. This property can be had for $175 per acre, small payment down and easy terms on the balance.

160 ACRES OF FIRST-CLASS WHEAT LAND situated in the center of the Bear River valley, one mile from the railroad station, all under a high state of cultivation, to exchange for Salt Lake property.

72 ACRES AT EAST GARLAND for $7500.00, easy terms; water from the Bear River canal for part of this land, situated on the main county road, within a half mile of school; house, barn and other improvements on the place, electric lights and telephone. This is some of the best land in the state of Utah. Twenty tons of sugar beets per acre have been grown on this land for a number of years. There is a small orchard, some alfalfa and grain land. This property is within 1½ miles of the Garland sugar factory. If you are in doubt as to the quality of this particular farm, wire or write any bank in Boxelder county and ask for information on east Garland land.

184 ACRES, located at Thatcher, in the Bear River valley. We will sell all or divide this into smaller tracts. The farm is considered one of the best in the Bear River valley and we can recommend it very highly. It is near good schools, church and is located on the main county road. It adjoins the canal and is easily irrigated. The soil is mountain loam soil and very productive. This property is in a very high state of cultivation and is adapted for any agricultural crops, especially sugar beets, potatoes, hay and grain. The land, together with the improvements and water right, can be had at $185 per acre, on easy terms. It is seldom that a farm of this kind is ever offered for sale.

35 ACRES AT CENTERVILLE, with a nice orchard, good water right, on the main road; 7 acres in nice orchard, the balance is garden land. Six-room house, water piped to the house, every modern convenience. In fact, this is one of the nicest farms in Davis county. Price $10,500; one-half down, terms on the balance.

4 ACRES IN HOLLIDAY, 4-room modern house, water piped into the house. This property is one of the nicest little farms in this district. Price $4000; one-half down, terms on the balance.

KIMBALL & RICHARDS
"Land Merchants,"
54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT.
OFFICE OPEN UNTIL SUNSET.

FAT STOCK SHOW A SUCCESS

The Inter-Mountain Second Annual Fat Stock Show held in Salt Lake City, April 4th, 5th and 6th was a success. There was the usual large number of enteries and the sales were satisfactory to both buyer and seller.

Setting a world's record price, lambs sold at 42 cents per pound live weight. The previous world's record was 33 cents, established at the Denver show last January. The high mark prior to that time was 26 cents, paid at the Salt Lake first annual fat stock show a year ago.

The sale of the prize winning lambs was made to Hansen Packing co. and raised by Austin Bros. Co.

The Austin lambs numbered fifty, all of a Shropshire crossbreed. The average weight was 120 2-10 pounds, making the price per head $50.48, or $2,524 for the lot. The consignment on the first day of the show won the blue ribbon denoting first prize, and also carried off the blue bow of the grand championship.

In addition to the price record for lambs, the show established another premium mark when the Utah Agricultural college steer calf, grand champion animal of the show, was auctioned to the Cudahy Packing company for 30 cents per pound live weight. The animal when weighed after the sale tipped the beam at an even 110 pounds, thus making the cost to the purchaser $330. The price constitutes a record for steers sold at the Salt Lake stockyards.

The sale of the individual and carload prize winners was a feature of the show bringing some very high prices.

Cash prizes awarded follow: Winterton brothers, $80; John Seely, $35; Ray Oldham, $10; Utah Agricultural college, $75; Hansen Livestock & Feeding company, $300; Alex Robb, $50; J. C. Lonergan, $80, Budge Land & Livestock company, $50; F. A. Starkweather, $50; Dan Owen, $20; Emile Pauls, $255; Walter James, $10; C. W. Hess, $30; Austin Brothers, $220; T. W. Robb, Paragoonah, $20.

WEEKLY MARKET REVIEW.

Union Stock Yards, Ogden, Week Ending April 2nd.—Cattle—Receipts, 1,459; market, steady; choice steers, $10.25@11.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $8.00@8.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $7.00@7.75.

Hogs — Receipts, 737; market, steady; tops, $16.85; bulk of sales, $16.85.

Sheep — Receipts, 99; market, steady; lambs, $16.50; ewes, $9.00@9.50.

North Salt Lake, April 5.—Cattle—Receipts, 33; market steady; choice steers, $10.25@11.00; good steers, $9.25@10.25; fair steers, $7.50@8.50; choice cows and heavy heifers, $7.75@8.50; fair to good cows and heifers, $6.50@7.50; cutters, $5.50@6.25; canners, $5.00@5.50; fat bulls, $6.75@7.50; bologna bulls, $6.00@6.50; veal calves, $8.00@10.00.

Hogs—Receipts, 376; market steady to 15c higher; choice fat hogs, $16.85@17.00; bulk of sales, $16.75@16.85.

Sheep—Receipts, 1003; market steady; choice grain fed lambs, $15.25@15..75 choice yearling wethers, $12.00@13.00; fat wethers, $12.00@12.50; fat ewes, $10.00@11.00.

Omaha, April 5.—Hogs—Receipts, 15,000. Market, 35c to 50c lower. Heavy, $16.20@16.80; mixed, $16.35@16.55; light, $16.30@16.90; pigs, $12.00@16.25; bulk of sales, $16.25@16.55.

Cattle—Receipts, 3200. Market, strong. 10@15c higher. Native steers, $11.00@15.00; cows and heifers, $8.50@12.25; western steers, $9.50@12.50; Texas steers, $9.00@11.00; cows and heifers, $8.00@10.50; canners, $7.75@8.75; stockers and feeders, $7.50@12.25; calves, $9.00@13.00; bulls, stags, etc., $8.00@11.00.

Sheep — Receipts, 400. Market steady to lower. Yearlings, $14.00@18.00; wethers, $13.00@17.00; ewes, $12.15@15.50; lambs, $18.00@20.50.

THE SEED PROBLEM

By J. W. Jones, Superintendent of the Nephi Dry-Farm Experiment Station.

Never before in the history of the country has so much emphasis been placed upon good seed as a means of increasing production. There has been an abnormally heavy demand for wheat during the past three years, due to decreased production by the nations of war. Farmers usually market their best wheat and retain the poorer grades for their own use. Thereore, good seed wheat is scarce.

It is only repetition to say that wheat is needed, and badly needed, by our allies. We must increase the exportable wheat supply. This can be done in two ways: (1) Eat less wheat flour, and (2) increase the production of wheat. It is the duty of every man to help save and to encourage increased production—whether he be a farmer lawyer, doctor, banker. The cause is a common cause; it is mine and thine, his and hers, and ours. Our allies in Europe are looking to America for wheat, as well as men, money, and munition.

The spring planting season will open in from two to three weeks, and it is well to bear in mind the fact that like produces like. Thereore, only graded, plump, clean, tested and viable seed of known varieties should be used for seeding purposes. Grain dealers or seedmen who knowingly sell inferior varieties for seed purposes are robbing the nation and giving aid to the enemy. If needed, millers should willingly divert wheat suitable for seed to the farms, because wheat that is undesirable for seed can be milled to good advantage.

Wheat grown for interstate trade is now standardized and will be bought according to grade. The best grade brings the highest price per bushel.

While the intermountain district is not a spring wheat area, it often happens that some farmers are unable to get all their land sown to fall wheat; while others may have fields that are badly winter-killed, or for other reasons have unprofitable stands. These areas should be sown to spring wheat.

It is quite possible that seed of the particular variety desired will not be available this spring. If such is the case, other varieties that are available will have to be substituted. In fields that have been winter-killed or need re-seeding because of their stands, it is desirable that a spring wheat be used that has essentially the same kind of kernels as the fall wheat that was sown. If a field of Kofoid was sown last fall and it is necessary to re-seed this spring we would recommend the use o a variety of soft white spring wheat, such as Palouse Bluestem. If Turkey was sown in the fall and it is necessary to re-seed, use Marquis or some similar variety of hard red spring wheat. From such fields the threshed grain should be rather uniform in color and quality, and should bring a better market price than a mixed sample of white and red wheat.

Spring wheat should be sown early at the rate of three to four pecks per acre on the dryfarm and to a depth of from two to three inches.

"What have you in the shape of cucumbers, this morning?" asked the customer of the new grocery clerk.

"Nothing but bananas, ma'am," was the reply."—Christian Register.

QUESTION AND ANSWER

Huntsville, Utah.

Utah Farmer:

Dear Sir:—I wish to sow Millet to cut for hay but no one here knows when it should be sown. Shall I sow it the same time as oats? and will the young plants stand a slight freeze?

P. L. O.

Answered by Dr. F. S. Harris.

Millet is a hot-weather crop and is killed by the least frost. It should not be planted therefore, until the hot weather comes—any time in June will do. It grows very little except in the hot part of the summer. From two to four pecks to the acre are planted.

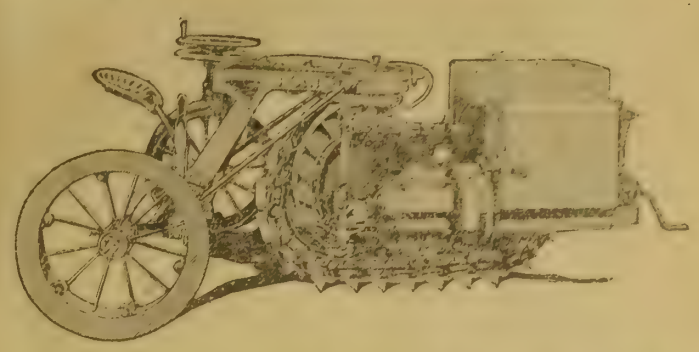
"Where's your little brother?"

"He hurt himself."

How?"

"We were seeing who could lean out of the window the farthest and he won."—The Rumbler.

Buy The Tractor



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The Bean TractPULL Tractor

IS AN ALL PURPOSE TRACTOR

You can Plow, Plant, Cultivate, Disc, Harrow, Drill, Haul, Harvest. In fact it does all Farm Work usually done with horses.

You can depend on the Bean TractPULL TRACTOR as it is made of the very Best of Material. Equipped with NEW DEPARTURE BALL BEARING AND HYATT ROLLER BEARINGS.

$25.00 FREE SERVICE

Each purchaser is furnished free a $25.00 service coupon book which entitles you to exactly that much service.

Call at our nearest branch for full information or a post card will bring it. Order now to insure delivery.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Dependable Seeds

What is the product of your garden worth? That depends on several things, the soil, the season, care during growth, but most of all on the seeds used.

The cost of the seed is very small compared with the value of the crop you raise. That's why Quality is more important than price when you buy seeds.

Our catalogue tells all about Vogeler's Purity Seeds, the best that money can buy. Your copy is ready, better send for it today.

Vogeler Seed Co.

SALT LAKE CITY, UTAH.

Buy Your House Ready-Cut—Save 1/3 On Cost

The above and 60 other designs shown our 1918 plan book. A postal will bring to you free of charge.

"The Keystone Way Makes Building Play"

All cutting, sawing and fitting done at the mill. You can build your house without expert help. Strong, warm construction. Wholesale prices on material. Quality guaranteed and inspection permitted before you pay one cent. Write today for free plan book.

KEYSTONE LUMBER CO.

5-29 S. Sprague St. Tacoma, Wash.

LIVE STOCK

HOGS

I. D. O'Donnell.

The burdens of war bear heavily on the hog. What is true as to the scarcity of other classes of livestock is true of the hog. An up-to-the-minute hog census would lead one to believe that the hog, like the American Indian, is in a fair way to vanish.

Pork in its various cured forms is one of the most convenient meats for army uses. Properly cured it will withstand heat and cold, moisture and dryness. Pound for pound, it furnishes as much human energy as any meat, and served in the various ways to which it lends itself, it is always relished.

The corn belt of this country has heretofore been also the pork belt. The hog has furnished a willing method of marketing corn, but, when corn gets to be worth around 4 cents a pound, and it requires 4 to 5 pounds to make a pound of pork, even a corn-belt farmer begins to figure. Many of these farmers come to the conclusion that it is just as well to sell the corn direct as to market it through a hog which is susceptible to cholera, and many of them have marketed both their corn and their stock hogs.

Methods of pork production under development of late years may do much to change, or at least expand, the pork belt. It has been learned that alfalfa pasture with a little grain ration added will produce pork as quickly and economically as any other method, and, incidentally, all our irrigation projects are admirably equipped to produce pork in this way.

It is not likely that the demand for pork and hog fats will soon decline and it is likely that the prices will remain for a time at or near their present elevation. Therefore, if you have good brood sows keep them. Make them produce two litters each year if possible, and feed and care for them in a way that will enable them to reproduce all possible. Fence off a few acres of alfalfa for pasture, put a selffeeder filled with a grain ration in the pasture, and turn in the pigs that they may make hogs of themselves. In this way you will prosper and your fields grow fertile.

COUGH IN HOGS

Layton, Utah.

Utah Farmer:

My hogs are subject to a cough, something which is contagious. What causes this and how can it be prevented?

Respectfully,
Jesse Harris.

Answered by Dr. F. J. Frederick.

Cough in Hogs: From your description it is difficult to tell definitely what is causing the trouble among your hogs. This may be due to parasites that get into the trachea and lungs; it may be due to an irritant that is sometimes inhaled as dust; or it may be the result of taking cold. During cold nights where hogs pile up, especially around a straw stack, they are often affected with a cough and as a result some even die. If it is due to parasites you should clean up your yards, see that the hogs get good clean water, and keep the yards free from dust by sprinkling them occasionally. Medicinal treatment is not satisfactory because it is difficult to get medicine into a hog unless he will naturally eat it. It is best to feed hogs on cement floors. By so-doing the feed does not become contaminated or wasted and they are not apt to get parasites, as they would be from the ground. Filthy hog wallows should be avoided. Sanitary measures are by far preferable to anything else to overcoming this trouble.

HOG CHOLERA PREVENTION

Keep the hog cholera germs away from your hogs, if possible.

If cholera gets into your herd, get a competent veterinarian and vaccinate your hogs at once.

Here are the ways cholera germs are likely to be carried to your hogs:

By owners of diseased hogs.
By your visiting diseased herds.
By hog buyers and visitors.
By dogs, cats and other animals; pigeons, crows, buzzards, etc.
By pasturing hogs near sick ones.
By purchasing new stock.
By streams running through the farm.
By exchanging work and by threshers.
By wagons, buggies and farm tools.
Keep hogs free from lice and worms.
Keep charcoal, slacked lime, soft coal and salt in the hog lot.
Keep the hog pens clean.

ROOT CROPS FOR LIVESTOCK FEEDING

Too few roots are grown for succulent food by the average farmer for feeding his livestock in the early fall and winter. There is no farm so large nor so small that it cannot grow a few tons of roots, such as mangels, sugar beets, carrots, rutabagas or turnips—particularly where corn crop grown for ensilage is not safe, as in the more northern sections of the state.

Carrots fed from four to six pounds per horse and from one to two pounds per sheep daily are a most excellent food. From twenty to thirty pounds of mangels, sugar beets, rutabagas and turnips fed per cow and from ten to twelve pounds fed to hogs daily are good rations. However, two pounds of rutabagas fed to a sheep daily is very much preferred by shepherds. It is well to feed livestock with succulent food during the early fall and winter, and at a time when they need such food most to tone up their system. Where labor is abundant and the price of concentrated feeds high, sugar beets, mangels, rutabagas and possibly carrots should be grown to replace at least one-half of the grain usually fed to milch cows, horses and hogs. Pound for pound, 90 per cent of the dry matter in roots and only 66 per cent of dry matter in grains is digestible. Roots are not only more palatable and more easily digestible, but furnish that succulency so much sought by the animal's body at a time when dry foods are fed so generously.

Where there are less than ten cows on a farm, or where it is not possible or practicable to build a silo on a livestock farm, then roots are a most valuable succulent food.

Root crops are generous feeders of plant food in the soil. The soil in which the roots crops are to grow should be deep and mellow, without being very porous. Soils as are adapted to the growing of corn will also grow good mangels. Usually deep fall plowing followed by somewhat shallower spring plowing should be practiced on the heavier soils and a much mellower seed bed will be the result.

The seed of root crops should be planted about three-fourths inch deep. In lighter soils, the seed may be planted a little deeper so that necessary moisture is furnished for the sprouting of the seed. The aim should be to bury the seed where there is sufficient moisture, without covering it too deep for the seedlings to break through the soil crust after sprouting. The cultivation should follow as soon as the rows of the different root crops can be plainly seen across the field. Later cultivate to destroy weeds and to preserve a soil mulch.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving

Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

Why Country Roads Are Bad

H. R. Miller.

In writing on this subject I have my home county in mind, but I know that the same conditions prevail over the entire state. That the roads are very bad cannot be disputed and when we consider the vast amount of money spent annually on the building and repairing of highways, it would seem to justify the expectation of better roads.

In many ways a better law might work to advantage but a proper application of the present laws would give better results. My observation has led me to believe that more blame can be laid to the farmers themselves than of any other class or cause, and I will endeavor to show why.

Did you ever notice how many men abuse the privilege of working out a portion of the road tax. They will take the smallest loads and slowest team and move along in the most leisurely manner conceivable and if the supervisor drops a hint for better action, he is at once a "sorehead," using "too much authority," etc.

Did you ever notice how many farmers crowd their wagons into the ditch in going down a hill, just to save their wheels from grinding off, or because it is too much trouble to properly apply the brakes, thus filling in the ditch and causing the water to run down the wheel tracks instead of the ditch: How continuously they travel the same tracks, cutting deeper and deeper the ruts that are standing full of water? How some farmers will persist in waiting until wet weather of spring sets in before they do any hauling because they can then find work for the hired man to do when it is too wet to work in the fields? Why, of course, "haul wheat, hay to market, that's what the roads are for, why not use them," and when roads are just as bad as they can possibly be, then it suddenly becomes imperative to ship out a carload of hogs and of course they must all be hauled. They can not be driven. Oh no! "What does it matter if each wagon does cut a little deeper? The road will be here after I am gone." What did you say, enforce the law? Well do you know what would happen if some public spirited, energetic neighbor would mildly protest, would ask the other fellow to wait just a few days with his wheat or hay, why not drive the hogs instead of hauling? There would not be enough mean names in the farmer's vocabulary to express his opinion of that fellow who tries to run the county.

I have sometimes wondered what would happen if farmers would exercise the business judgment that other classes of men show and act together in preventing an individual from such abuse and destruction of public property instead of compelling one individual to fight a whole community in his stand for right. I believe that I could make a fair guess and predict that, when that time comes, every man who works out a portion of his road tax, will haul as big and many loads of good material as he would if he were working for himself; that he would put each load and shovelful where it would do some good; that he would haul a few extra loads into convenient places where he could get them with a wheelbarrow and put a few shovelfuls into the wheel ruts when they first appear. There would be no necessity of stopping that obstinate neighbor from hauling in wet weather or filling up ditches. There would be no dumping of a load of boulders in one place "just to see the automobile go bouncing over" and "fix his tires."

Now I might add that I am only a plain farmer and have no axe to grind. I hold no political office and probably never will as I regret to say that it sometimes has been by misfortune to insist on some one staying off the roads when they were too bad and so, of course, have gotten myself "in bad," even should I have ambitions, which I have not. So I appeal to all fairminded farmers and citizens to give this matter fair consideration and stay off the roads in wet time. Please remember that when the road is good for your neighbor, it is good for you and when he travels in muddy ruts, you will too, that the roads are joint property and well worth taking care of, that good roads are a most valuable asset to this great nation in a preparedness policy, valuable in time of peace as well as war, and, above all, don't get the sorehead at one of your neighbors, if he insists on protecting the road, just because you also happen to have some hauling to do. Boost him, don't knock him. Let us co-operate. Let us have a road repair day and practice the truthful adage that a stitch in time saves nine, instead of cussing the road officials.

IRON AGE GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with less expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes. 30 combinations, $4.50 to $30.00. Write for booklet.

306 Drill and Wheel Hoe

Bateman M'f'g Co., Box 83 C, Grenloch, N.J.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

DITCHING A Mile a Day Is Easy With This Simplex. Unequaled on irrigated farms for cutting or cleaning laterals. War time tool. Equals 100 men. Mostly all steel. Reversible. 10 days' trial.

Write for prices and money-back guarantee. Consolidated Wagon & Machine Co., Salt Lake City, U.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
BOX O STERLING, ILL.

MILLER-CAHOON COMPANY
General Agents
Idaho Falls, Idaho Murray, Utah

QUESTION AND ANSWER

Hunter, Utah.

Utah Farmer:

Dear Sir:—Would like to know how much manure to spread per acre for potatoes?

Yours truly,
A Subscriber.

Answered by Dr. F. S. Harris

The amount of manure to use will depend on the nature of the soil and the amount of manure that is available. At the Experiment Station in some cases we have used as much as forty tons to the acre every year for several years; but this is too much. As much manure as this is likely to favor the growth of scab.

Under ordinary conditions probably ten tons to the acre each year would give good results. The manure should be spread out as soon as it is hauled to the field and not left in small piles. Manure that is piled in the yard should be kept compact and moist.

REDUCED AUSTRALIAN WHEAT CROP

Estimated production of wheat in Australia for the season 1917-18 is 114,020,000 bushels as compared with last season's actual yield of 152,565,000. This is a decrease of 38,545,000 bushels, or 25 per cent, and is the result of reduced acreage combined with unfavorable conditions.

The maximum price has been fixed at 95 cents per bushel. Available shipping has been too small to cope with the supplies ready for shipment and the new season has been entered upon with stacks of old wheat on hand amount to 100,000,000 bushels.

150,000 Farmers Quit "Guessing" When They Paid Our Dealers $10,000,000 for "Z" FARM ENGINES

150,000 Farmers Chose These "Z" Engine FEATURES:

1. Fairbanks-Morse QUALITY.
2. Economical in first and fuel cost, and low up-keep.
3. Simplicity and staunch durability.
4. Light weight, substantial, fool proof.
5. Gun Barrel Cylinder Bore.
6. Leak-proof Compression.
7. Complete with Built-in Magneto.
8. More than Rated Power.

3 H.P. $89.00
6 H.P. $156.00
Both With Throttling Governor
1½ H.P. (Gasoline) $48.50 on skids
All F.O.B. Factory, With BUILT-IN MAGNETO

Economy and efficiency, with "more than rated power" in an engine is the war-time-demand of farmers of America.

They have "quit guessing"—they demand action, proof-performance on their kind of work.

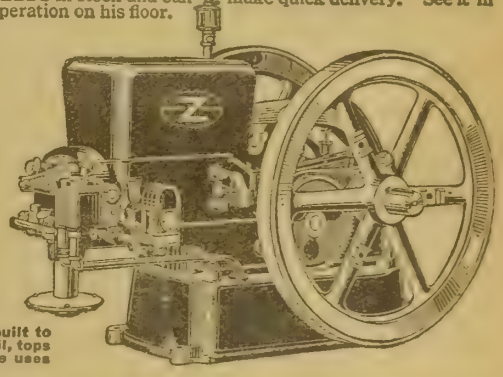
So 150,000 leading owners have backed their judgment on the FAIRBANKS-MORSE "Z" Engine with $10,000,000.

That's a lot of engines bought for reasons you'll find are wise ones.

"Z" 3 & 6 H. P. ENGINE
Uses Economical KEROSENE
Also Distillate, Coal Oil Tops or Gasoline

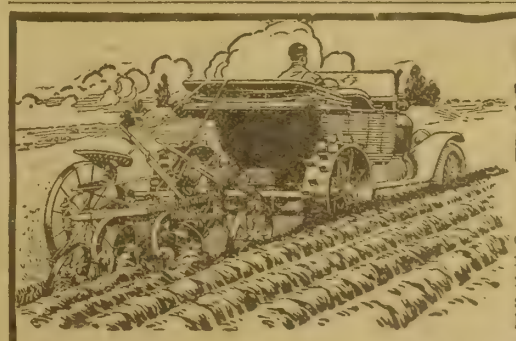
Kerosene, easy to get, at half gasoline costs, does the work in a "Z" with *more* than rated power. FAIRBANKS-MORSE engine designers saw this war-demand coming and built "Z" Engines to fit the farmers' needs. The farmers know it now—over 150,000 strong. Will you too investigate? Compare. Figure out the FACTS—before you buy ANY Engine. *Alright*—we know the result, because—

You Also Get This Local Dealer Service
Go to the Fairbanks-Morse Dealer. He is in position to render you prompt and personal service. He has exactly the "Z" for your NEEDS in stock and can make quick delivery. See it in operation on his floor.



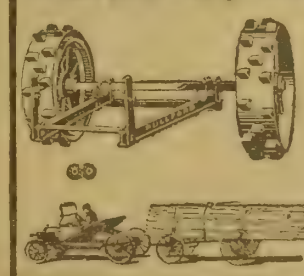
The 3 and 6 H. P. sizes are built to use kerosene, distillate, stove oil, tops or gasoline. The 1½ H. P. size uses gasoline only.

FAIRBANKS, MORSE & CO.
Chicago — Manufacturers



Plow and Pull With Your FORD All That 4 Horses Can
Pullford $155 F. O. B. Quincy, Ill.

MAKES a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. Practical, Durable, Reliable.



New FAN DEVICE Prevents Heating
Hundreds WORKING NOW for Satisfied and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

PULLFORD COMPANY, Box 314-C, Quincy, Illinois
Shipment from Salt Lake City, Utah, Warehouse after April 1st.

HOW OUR GOVERNMENT WILL ASSIST IN DRAINAGE WORK

(Continued from page 3)

and inspects and accepts the work. The representative of that office advises with the district engineer in all these matters and keeps in close touch with the construction work making such suggestions and recommendations from time to time as seen fit, helping in the solution of special problems as they arise. After the drainage is completed the representative of that Office makes such studies and offers such advice and assisance as are necessary to the complete reclamation of the land. It is frequently necessary to change the method of irrigation and often it is desirable to call on other branches of the Department of Agriculture for advice as to crops, methods and treatment.

The representative of the Drainage Office keeps in close touch with the administration of the business affairs of the district and advises with the drainage supervisors in matters of financing, management, records, contracts and operations generally. This is of great advantage to the district since the experiences of all districts are brought to bear on the problems of each of the districts operating under the memorandum of understanding.

The service of the Drainage Office is in a strictly advisory capacity and is rendered gratis to the landowners. The only interest of the Office is that lands susceptible of redempion be restored to a producing condition and that the necessary reclamation work be properly done. The representatives of the Drainage Office are paid a salary by the government for their services and are not permitted to accept any other remuneration.

The drainage work for several of our western states is in charge of R. A. Hart Senior Drainage Engineer with headquarters at 319 Federal Building Salt Lake City. If any one is interested and desires government aid in drainage work they should write Mr. Hart at this address.

MONTHLY REPORT OF CACHE VALLEY COW TESTING ASSOCIATION

By Lorenzo H. Maxwell, Tester in Charge.

The Cache Valley Dairy Improvement Cow Testing Association has just completed its first month's work, with a very splendid showing. The association consisting of dairymen, living in towns, viz: Wellsville, College Ward, Logan, Smithfield, Richmond and Lewiston.

The purpose of the association is for the advancement of all phases of dairying in this county and other places, that will keep in close touch with the work done here, and all now interetsed are working toward that end.

Feed being quite plentiful this year makes it possible, if fed properly to keep the cattle in first class condition, and the cows when handled in the most scientific manner are able to produce to their highest capacity. Five of the members of the association are feeding grain, while others are getting good results from alfalfa hay, wet beet pulp and corn silage, the three together forming the most economical ration used. It is found by observation that while feeding these three, the cows will relish the wet beet pulp much more than corn silage, consequently if one is to make a balanced ration, it would be advisable to feed the corn silage when they would be most hungry. Those feeding corn silage and hay only, need not watch this so closely.

Two members Mr. Thomas S. Bradshaw and John McCarrey hope to build a new barn during the summer, and if the prices of butter fat stay near seventy-two cents others will fall in line, realizing the value of such improvements.

Results:

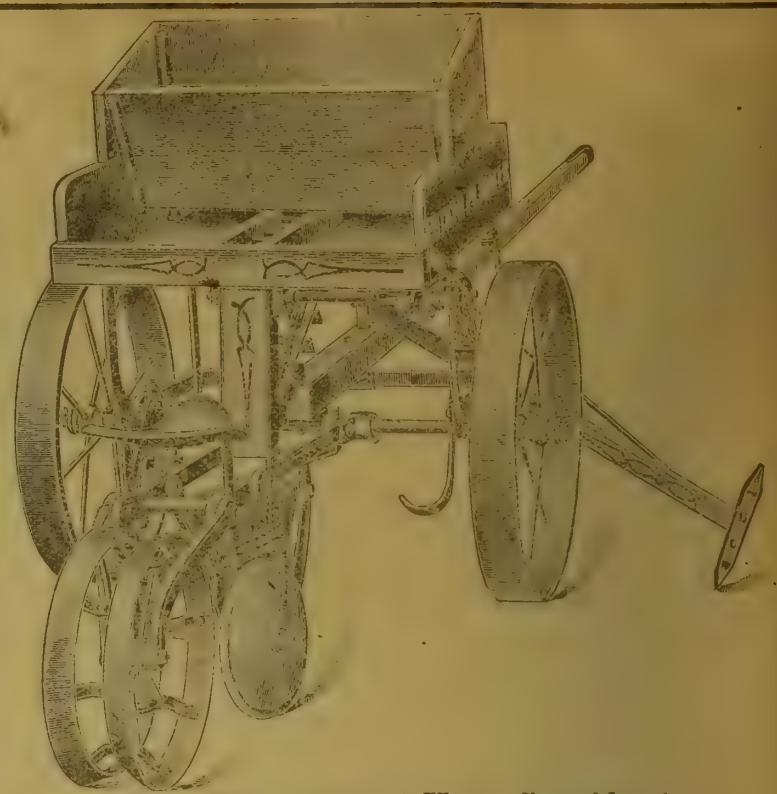
The association, average per cow for month of March, 31 days, ranks comparatively high, being 825.5 pounds of milk 34.27 pounds of butter fat, with an average cost per cow of $6.30. This places Cache Valley, Utah's dairy center, in lead of all other cow testing associations of the west according to reports of last month.

Out of five hundred cows entered, but three hundred and fifty-one were tested. Of these, one hundred and two produce over forty pounds of butter fat in the month, while sixty-one produce over forty-five and forty go over the fifty pound mark.

Mr. John T. Darley has the pleasure of owing the first two best producers of this period. The first, Roanie, making 1450.8 pounds of milk, 75.44 pounds of fat with average test of 5.2 per cent. Second, Jersey 2nd, 1469.4 pounds of milk; 73.47 pounds of fat, with a test of 5 per cent. Third highest is owned by Thomas Darley, his cow Blackie producing 1674 pounds of milk 68.63 pounds of fat with a test of 4.1 per cent. Mr. Brig. Pond follows up very closely with his cow, Gladys, with a production of 1751.5 pounds of milk, 68.30 pounds of fat, with a test of 3.9 per cent.

AVERAGE PRODUCTION OF THE BEST HERDS

Name of Owner of Herd	lbs. of Milk	lbs. of Fat		Average Feed Cost	Kind of Herd.
1. John T. Darley	1176.5	53	90	$6.51	Grade Jersey.
2. Wm. Anderson	1034.3	44	83	6.80	Mixed Jersey and Hols.
3. J. L. McCarrey	998.4	40	45	5.48	Pure Bred & Grade Hols.
4. N. K. Nelson	1046.2	40	02	6.07	Pure Bred Holstein.
5. Walter Fisher	1029.3	39	80	7.44	Pure Bred & Grade Hols.
6. Webb Bros.	926.0	39	79	6.09	Grade Holstein.
7. Albert C. Fisher	942.0	37	83	6.78	Mixed Grade Holstein.
8. Thomas Darley	906.9	37	19	7.00	Grade Holstein.
9. Alex E. Harris	867.8	37	11	6.43	Pure Bred & Grade Hols.
10. Wm. Jones	783.1	37	02	6.64	Pure Bred & Grade Hols.



Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

MILLER-CAHOON COMPANY
GENERAL AGENTS
IDAHO FALLS, IDAHO MURRAY, UTAH

Save The Farm Machinery

Operate your farm machinery at a lower cost—and save it from deterioration, by using

Golden Harvester Machine Oil

—it's the oil for this busy year, it lubricates every moving part and reduces the load of all machinery. Order a can today. Your dealer has it; if not he will get it for you.

Utah Oil Refining Co.

Salt Lake City

ADVERTISEMENT IN UTAH FARMER BRING REPLY FROM CHINA

While the readers of the Utah Farmer are nearly all located in Utah or Southern Idaho and adjoining states, several of our papers go to foreign countries. The information on dry-farming, irrigation, on which Utah is a recognized leader, has brought us many subscriptions to foreign countries. The two following letters will explain themselves.

MILLER-CAHOON & CO.
Pioneer Implement Dealer of Utah.
Murray Utah, April 3, 1918.
The Utah Farmer, Lehi, Utah.

DEAR SIRS:

We have just received a letter from a party residing at Shanghai, China asking for information regarding Louden goods. We are very curious to know how a party living on the other side of the globe is familiar with the fact that there is such a company as Miller-Cahoon Co. of Murray, Utah, and how they learned we were the agents for the Louden Machinery Co.

We do not know of having advertised the Louden goods in recent months only in the Utah Farmer and would like to know if you are sending any copies of your paper to that address.

We enclose a copy of the letter for your information.

Yours truly
MILLER CAHOON CO.,
By H. B. Smith, Sales Mgr.

Shanghai, China, February, 1918.
Messrs. Miller-Cohoon Co.,
Murray, Utah.

Dears Sirs:

Will you please send me a catalogue or illustrated booklet "Louden Garage Door Hangers," etc., and cost of the various parts.

Have you concrete mixers, carts, loading barrows, elevators, chutes for concrete construction. If so please send me a price-list and catalogue of the same.

Very truly yours,
Victor Hoffman,
Supt. of Construction China Realty Co.

P&O

Two-Way Success Sulky Plow

An excellent plow for hillside work, irrigated land, or any other place where it is desirable to throw the furrows all in the same direction, thereby avoiding back or dead furrows.

"It's the Way We Build Them."

The right hand plow is used when going in one direction, and the left hand plow on returning. It is especially valuable in small fields or in close quarters, as it can be turned in its tracks at ends of field just like a racing sulky. Can be used with two or three horses. Horse lift. High clearance under beams. When changing from one bottom to the other the hitch slides over to correct line of draft automatically. Can be furnished with Dial Hitch if preferred. Stubble, Scotch Clipper, or Black Land Bottoms can be furnished. The equipment includes coulters and evener.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

FOR SALE

Three new 14-inch power lift John Deere engine gang plows. Can save you from $50 to $75 on present prices of these kinds of plows.

JESSE HARRIS
Layton Utah

DUROC JERSEY BOARS

Sired by the Grand Champion Richard Defender and Richard Pathfinder now ready for service. These boars are the big type, and of the best breeding east or west. Priced right; and guaranteed to please. Write for description.

ERIK W. OLSON
Virginia Idaho

BABY CHICKS

Booking orders for our Quality S. C. White Leghorn chicks. Order quickly. Supply will soon be exhausted.

MOUND VIEW FARM
Brigham, Utah, R. 2 Phone 92-R-1

Bourbon Red Turkey eggs from prize winning stock, $4.00 per 12. Rouen duck eggs, $2.50 and $3.50 per 12. Every bird a winner. Also colored Muscovy duck eggs, $2.50 per 12. Emma Miller, Farmington, California.

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

Is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
Vellsville, Utah

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS
Breeders of Percheron Horses and Ramb Jillet Sheep.
W. S. HANSON, Prop.
Collinston Utah

Order From Producer
R. I. RED BABY CHIX

MY SPECIALTY
Vigorous heavy laying stock. Limited number, Barred Rocks, Black Minorca chix, $15.00 per 100.

DENTON POULTRY YARDS
Lambell California

WANTED

RELIABLE PARTY TO TAKE CARE OF TRACT OF LAND PLOWED AND SEEDED.

BOX 802
SALT LAKE CITY, UTAH

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

Beans As a Dry-Farm Crop

By J. W. Paxman.

When the cry came in the spring of 1917 for increased production in all food stuffs, a large number of dry-farmers throughout the state, answered the call by planting small patches to beans. Nearly all the varieties obtainable were planted under varying conditions of soil and climate. It was a new experiment in that it afforded a try out in nearly all parts of the state under different soils and cultural methods. The development of these crops and the results thereof afforded an interesting study, besides giving much valuable data upon which to base conclusions for the future success of the crop as adapted to dry-farming.

Much information has been gleaned, and we must say, a great deal of encuragement given of these becoming a promising and valuable cash crop if a proper study is given the characteristics and culture of the plant.

A tabulation of the results show: First, that better results come from a deep fall plowing. To insure the best results the stubble should be double-disked shortly after harvesting and later plowed to a depth of 10 to 12 inches, although some splendid yields are reported under the ordinary system of plowing. Second, an efficient cultivation of the soil before planting. Harrowing first of all as early as weather conditions will permit, then later, double-disked, leveled and cul-ti-packed. Should a rain intervene between this operation and planting, harrow again just prior to planting. Third, planting in rows 36 to 42 inches apart with but one vigorous plant to every 8 to 12 inches. Fourth, the use of proper varieties of vigorous seed.

The proper time to plant is when the weather is such as to warm up the soil, and all danger of frost is over. Consult the weather records and plant just after the average date of the killing frosts. This will be approximately from May 15th to June 15th. Plant only deep enough to insure sufficient moisture for safe germination, from 2 to 4 inches. The rootlets will dive for moisture if only we can get the plant up.

The crop should be confined to the navy varieties, The Michigan pea bean and The Utah pea bean are the safest and best varieties and can be had of State Council of Defense, J. Edward Taylor, Secretary, Newhouse Building, Salt Lake City, at 18 to 20 cents per pound. The Lady Washington is a good bean for southern Utah. Twelve to fifteen pounds per acre only are needed if planted as above specified.

Frequent cultivation should be given the crop and no weeds allowed to grow. The cultivator should not be used after blooms begin to appear.

If above suggestions are followed yields of 300 to 600 pounds per acre can be produced, and at present prices will give the farmer from $20 to $50 per acre over and above all extra expense for care of crop and land, and the land will in all probability yield a better crop of wheat the following year.

Small portions of fall-plowed areas, intended to lie in fallow, should be utilized with a crop of beans and thus help in the speeding up of production, so much needed as a vital measure in winning the war.

Information on harvesting and threshing methods will follow.

CEREAL EXPORTS TO ALLIES

Between July 1, 1914 and January 1, 1918 the United States exported to the Allies the following amounts of the principal cereals. The figures also include flour and meal in terms of the grain required for making them:

Wheat	500,672,417	bushels
Oats	320,424,074	bushels
Corn	54,351,739	bushels
Rye	11,615,139	bushels

The total considerably exceeds 880,000,000 bushels and shows the important extent to which American farmers have reinforced the Allied cause. Yet wheat is needed by the Allies more now than at any time since the war began.

THE IRRIGATION COMPANY'S OPPORTUNITY FOR SERVICE

(Continued from page 3)

crops which were in every way equal to those produced on similar soils in the neighborhood by the use of 6to 8 acre feet per acre under the system of the so called flat rate stock assessment charge. Today the West can render our country no greater service than the attainment of economy in the use of so great a food-resource as irrigation water, and this is the irrigation company's opportunity.

Rules and regulations however will do but little toward attaining the desired goal without the backing of vigilant, well trained and efficient water masters.

Energy, vigilance and determination, surrounded with calmness and courtesy are indispensable characteristics in water masters but in addition to these they must be well trained, through experience and study. Water masters, to be most efficient, must know how to measure water. It is, moreover, urgently necessary that they be able to judge the capacities of different soils to retain water. If the water master knows that the upper 5 feet of soil in one acre of land cannot absorb and retain more than 5 acre-inches of water he will surely discourage, if not actually prevent, the use of 10 acre-inches per acre in a single irrigation. And yet irrigators very often allow a 2 second-foot stream to run three days and nights to irrigate 10 acres, thus using enough water to cover the entire tract to a depth of nearly 15 inches. Vigilant water masters will now prevent such practice.

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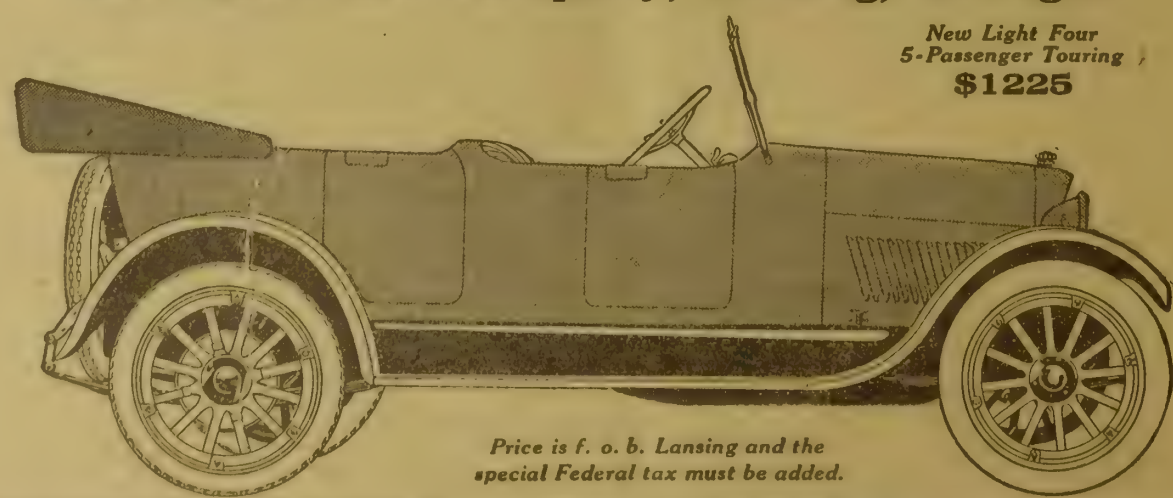

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 37 LEHI AND SALT LAKE CITY, UTAH. APRIL 13, 1918

Spring Drive On The Farm

EARL HENDERICKSON

For weeks we have been planning and preparing for the big spring drive on the farm. The planting of our 1918 crop. The work of preparing the seed bed so that the largest crop possible can be produced.

The great spring drive in the battlefields of France has been in progress for several days, and it seems hard to realize, how many thousands are engaged in the great battle. The greatest struggle the world has ever known.

Do we who are here at home realize that other things than fighting must be done to win the war. Our soldiers must be fed and it is up to us who are not fighting to feed them—not only our boys but the soldiers of France, England, Italy and our allies. Without food these people can not win the war—they are dependent upon the American farmers to a very great extent. We will deliver the food promised but it can not be done with out some sacrifices. We will have to save the wheat—eat other foods—and produce to the limit this year.

We can not let the question of cost enter into the proposition. Our duty is plain—to produce to the limit. The question of help and other things must not interfere with a maximum crop this year.

With a ready market for wheat, sugar beets, livestock and all kinds of food products, our banks and business houses should be willing to loan money for improvements and machinery that will increase production. Last year some of our business men co-operated with the farmers and furnished them seed and money and shared in the crop at harvest time and in this way helped to increase the food supply.

No farmer should leave a stone unturned to make the most of this opportunity to serve his country and get fair returns for his labor. Do not be afraid to borrow a little money if it will help increase production. Go in for record breaking crops, in both yield and acreage.

It may seem to some of us at times, when we have to give up our boys to serve with the country's fighting forces, to loan our dollars in support of the Government, and to contribute in various other ways to wartime activities—it may seem that the demands upon us are too great. But are they, when we stop to consider what our allies have had to give up, and how their sacrifices have protected us so far from a similar fate?

No, the demands on us are not too great. We cannot do too much—and too soon—to bring the conflict to an end. If we are truly faithful we will not let a day go by without asking ourselves. "What can I do today that will help in winning the war?" And the utmost we can do is not too much.

The spring drive on the farm this year includes a number of important dates. The most careful preparation of a good seed bed. Planting of the right sort of seed. This means tested corn and, grains well selected and treated for smut, potatoes that have been treated for scab, etc. It means attending to a number of details so essential to produce a maximum crop. Much is expected of the American farmer, he is the kind of a farmer, however, who will strive all the harder because of the handicaps that he may be facing. All the farmer asks is the co-operation he has a right to expect from the government, bankers and other sources and he will make good.

It should be the object of every farmer, this year, to get all of his resources into condition so that he can go "over the top" in the spring drive. He must decide the kind of crop he is going to plant and what is more he must decide between a normal and a maximum crop production. The food situation is serious as nearly all the allies are on war rations and unless help is given them our cause will fail. Food will win the war—but when—that is the question. Our government officials await in confidence the efforts of the American farmers.

Our crop production this year will depend upon the effort, the brains, we put into it. Plenty of cultivation at the right time, fighting weeds, better irrigation and a score of other things that go to make for better farming.

The labor situation is going to be greatly helped by modern labor saving machinery and implements, such as the tractor, milking-machines, manure spreaders, and other machines that necessity will bring into use. In this way we will be able to produce as much and more than ever before even under present conditions.

Each day makes us realize that we are at war. We do not need the Huns to come over here and bring destruction and desolation to make us realize we are at war. Our brave boys by the thousands are going to the battle fields of France it is up to us at home to do our part. Food is our part of the great work. On our food supply hangs the allies fighting power.

Not alone must the farmers make the spring drive, but, every one of us—you and I and the people next door—our neighbors and the people every where. We are all part of the great United States, each one of us goes to make up the government. What we each do counts as part of the government. There is only one business and we all must take part in it and that is winning the war.

The spring drive on the farm if successfully carried out means much to make the world safe for liberty and democracy.

To make the drive a success means hard work and even then we are not doing any more or as much as the boys at the front. In return for our hard work there is the assurance of a reward—Profit for our labors.

In this drive for production we must plant the largest acreage possible and then see that the land yields heavily.

Streaks In Butter

By W. H. Underwood.

Not long since a dairyman who is conducting a private market for butter came to me to get advice in a matter which was giving him quite a bit of trouble. He sometimes found that his customers were complaining because his butter showed streaks when they came to use it. What he wanted to know was what caused the streaks and how to prevent their appearance. This question may be bothering others who are working along this line and with this thought in view, the following suggestions are offered by one who solved the problem years ago.

It may safely be stated that streaked butter is, first of all, due to imperfect distribution of the salt. Salt has the effect of deepening the color of butter and when it is applied unevenly the result is streaks of lighter and darker shades alternating with more or less regularly unless removed by working. Of course it is practically impossible by the ordinary methods of salting butter on the farm to apply the salt evenly and the distribution must be left to the butterworker. If the working is thoroughly done the streaks will not appear in the finished product. But since overworking is one of the things which the amateur buttermaker is cautioned about, it sometimes happens that the color is not even.

In case one should doubt that the cause of streaks in butter is due to the salting a very simple test will be convincing. Let a pound of butter be taken from the churn, washed as usual, and set aside for a few hours with an ounce of salt applied carelessly and not worked in, or make a gash in the surface of the butter with the ladle and throw in some salt.

Where the salt is thick the color will be several shades deeper than where there is no salt. Brine salting practically does away with this trouble because the salt is applied in solution. This method, however is not entirely satisfactory since it is somewhat difficult to obtain the desired degree of saltiness unless one likes the butter quite fresh.

If the following suggestions for churning salting and working are carefully followed there will be no trouble with streaks in butter. Churn well ripened cream at a temperature which will bring it to the draining point in granules the size of rice or wheat kernels. When that condition is reached draw off the buttermilk and rinse the butter in plenty of water that is at about the same temperature as the buttermilk when drawn. Agitate gently so as to mass the granules, and drain. Apply water at about the same temperature a second time, again agitate, preferably by revolving the churn a few times and drain thoroughly.

Have the salt sifted and weighed or measured. The latter is more convenient and quite accurate for all practical purposes since an ordinary half-pint measuring cup holds approximately one-half pound. One ounce of salt to the pound of butter is about right. Sift half the salt evenly over the surface of the butter, then revolve the churn so as to expose the bottom of the butter and sift the remainder of the salt over the granules thus brought to view. Only a fine grade of dairy salt should be used.

Now put the cover on the churn and revolve the churn slowly for a dozen times. Then remove the cover, drain off the brine and if the butter is gathered in large lumps break them up with a ladle or wooden paddle. Again close and revolve the churn as before, allowing the butter to drop soldily from end to end as it revolves. After a few minutes of this the butter is ready for the final pressing to eliminate the excess brine. This may be done with a butterworker or in a ordinary wooden bowl with an ordinary ladle. In either case very little more work will be required and no subsequent handling whatever. Put the butter in its final form then and there, whether prints, rolls or packed in small jars for family use.

To summarize, remember that streaks in butter are caused by uneven distribution of the salt. Working the butter will eliminate them but it is better to prevent their formation by care in the first instance. It is a fine point in buttermaking to know just when it has been worked enough. Overworking spoils the grain while insufficient working leaves too much brine and possible streaks.

A very thin wafer of perfectly worked butter should not break when folded almost over upon itself and should have a distinctly granular appearance when a bit of it is broken apart. Artificial coloring has nothing to do with streaks in butter as some suppose especially when the color is of a high grade of quality

———o———

BIG COWS FOR BIG BUSINESS

Watching cows through the years, it is my opinion that if we get good returns from our dairy, we must have cows that have a good capacity for eating and assimilating food. It stands to reason that this is so. You can't get many sacks of flour out of a mill if you do not turn the wheat into the hopper freely. So a cow must have a good big body and be able to turn the hay and grain we give her into milk.

The best cow we ever had I brought home in the back end of the wagon when she was a calf, all covered up with a blanket because Wife felt a bit ashamed to have the neighbors see what fools we had been to buy such a runt of a thing as she was. But that calf had one thing I liked: she had a great big belly. I thought if I could build up a body to match that belly, we would have something worth while, for the calf had good breeding. It had simply been illy-fed when it was a little thing.

I did my best with that calf. I just about set up nights with it for a while, but it paid, for as I say, it was the best cow we ever had. She gave a fine mess and rich milk, and it was almost impossible to stop her when she got started on a new year. I never saw a cow that wanted to keep at the milk business the year round as she did.

Of course I don't advise practicing on developing calves that way, but I do try to get cows that have room for a lot of feed, because I am sure then that I will get something in the milk pail. You can force cows with small, slender bodies for a time, but they wear out fast and never can quite come up to those which by nature have the bodies to stand the pressure of our modern dairying. There is a lot in what some folks call "strain" in cows. Certain families of cows can be developed into heavy feeders and good producers and some cannot. Those which can are the best.—F. L. Vincent.

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"I see you have your arm in a sling," said the inquisitive passenger. "Broken, isn't it?"

"Yes, sir," responded the other passenger.

"Meet with an accident?"

"No; broke it while trying to pat myself on the back."

"Great Scott! What for?"

"For minding my own business."—Exchange.

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VOLUME XIV. LEHI, UTAH, SATURDAY, APRIL 13, 1918 No. 37

Dry-Farming Possibilities In Uintah County

By J. W. Paxman, Specialist in dry-farming for, The Utah Agricultural College.

From present indications dry-farming in Uintah County, for some time to come, will be somewhat limited, and will in all probability, have a slow development. The areas under which dry-farm practices are feasable, are few in number, and removed from markets, not that good lands are scarce in the County, but rather that moisture conditions are discouraging. The lands therefore must be developed under adverse circumstances, and the crops marketed at excessive costs. Even if a railroad should top this County, the marketing costs would be high as the main tract lies at a high altitude on a plateau skirting the Diamond Mountains from 18 to 25 miles northeast of Vernal with a rough and difficult country to traverse intervining. A good road would be costly to build and maintain, and for this reason the development of the section in all probability will be retarded.

The Area.

The district is known as the Diamond Mountain district and commences at the low point of the mountain by that name and at the south boundary of the Ashley National Forest Reserve and extending in a southeasterly direction for about 25 miles and into Colorado, sloping to the south. It has an elevation of 6000 to 7000 feet and in width is four to eight miles.

There is a probable 40,000 to 50,000 acres that is accessible to the plow from estimates obtained from early settlers who claim a thorough acquaintance of the district. Certainly it looks a vast stretch of country.

Character of Lands.

The lands in the main are covered with a black sage, rather thrifty in appearance, and some few small patches of a scrub mountain bush. The soil has every indication of being fertile and easy to handle. In color it is a dull, dirty red to a brownish black. In some few smaller sections the hardpan is near the surface but generally the depth is sufficient to provide a capacity reservoir for bounteous crops. Rifts of rocks are found here and there but not sufficient to make any material depreciation taking the district as a whole. There are numerous draws from higher hills running diagonally across sections of the territory making it difficult to operate a considerable part of the land. Water for domestic purposes is accessible from almost every section. Small living springs are found in almost every ravine and draw while in various places water is oozing from higher surfaces, providing for home conveniences. By a minimum amount of effort water can probably be obtained from surface wells.

Weather Conditions.

No officials records of the rain-fall have been kept. Those acquainted with the country say the snow lies on the ground at a depth of two to five feet during the winter months and that considerable rain falls during spring and early summer and again in early fall. The growth of the grasses and natural vegetation give conclusives evidence of an adequate precipitation, as well as proof of a splendid quality of the lands. There can be but little doubt during normal years of a sufficient amount of moisture to produce profitable crops. Application is made to co-opeate with the Salt Lake Weather Bureau so that correct records can be kept from now on.

The altitude being extremely high it naturally follows that the climate would be cool, with danger of late and early frosts. Investigation however, indicates that such frosts are not so menacing, on account of the gradual slope of the district and the natural air drainage providing a constant movement of the frost. The country is proverbially known as being "windy," and perhaps this is the most disagreeable feature the homeseeker will have to contend with, apart from the hazardous transportation to and from Vernal—the only outlet from the country.

The summer months are said to be pleasant and cool being almost up among the Quaken Asp. The seasons are short and some years the grain has not fully ripened.

Some Results.

It is said that over half of this tract has been entered upon. A few famililes have already built homes and living thereon. Others expect to build homes soon. Crops have been grown in a limited way for several years.

On the homestead of James Freestone good crops of alfalfa, wheat and oats have been grown, also beans have matured and good roasting ears of corn have been gathered. Splendid crops of potatoes, turnips, carrots, and vegetables were harvested in 1917. These results indicate a successful future for crop production.

Direction Needed.

The work done in the district has been accomplished under an unusual struggle, as indeed all future developments must be accomplished. This struggle can be minimized, however, by proper guidance and education on the part of the County Agent and the Specialist. The methods pursued up to date have been very crude but the farmers seem anxious to get advice. Some demonstrations will be initiated soon and some educational work prosecuted, as a help and guidance to the homesteaders.

Early maturity varieties of grains should be sought and methods determined upon for their safe culture. These items and others will be taken up with the County Agent at an early date.

All in all it may reasonably be concluded that success will come to this district but it will come under adverse conditions and by a determined fight. The quality is in the soil to make good. It needs good quality in the operators also.

Other Sections.

A district that was thought by some as possessing merit for dry-farming is that known as "Dead Mans" bench, 35 miles east of Vernal. The Specialist investigated this section and found no encouraging signs. It would be too hazarious to attempt any great expenditure of energy and money to try out the district.

The same report applies to the Deep Creek District which was also visited. While the soil seems good there is grave doubts on the precipitation being sufficient to produce profitable crops.

There is a small district called "Willow Springs," of about 400 to 500 acres, that gives evidence of some merit and might, with some justification be tried out.

Soil Firming For Sugar Beet Culture

By J. A. Brock.

Purpose of Firming

The purpose of the operation of firming or packing the surface soil in sugar beet culture is primarily to set the soil moisture in motion. Incidently it also forms a granular soil mulch which goes far to conserve the moisture. After the beet seed has been drilled in it is necessary that it be brought in direct contact with moist soil before germination will start. As the plan develops the soil must be in such physical condition as to permit a perfect movement of moisture in order that the roots may absorb the necessary amount of water.

The most practical method of obtaining this necessary condition is to pack, or firm, the soil surface broken up by plowing by going over it with a roller, or culti-packer, an implement of which there are several efficient types on the market and well known to agriculturists. The pressure of the packer wheels causes the more or less loose soil of the upper strata to form a direct contact with the subsoil. The necessity of re-establishing this contact is apparent when it is considered that when the land is plowed the connection between the upper and lower soil strata is more or less disrupted and continuous fine tubular passages through which the moisture from the subsoil may travel up to meet the drawing action of the sun's rays at the surface are broken. To re-establish these passages it is necessary to bring pressure to bear upon the upper soil.

Moisture Retention Necessary

While it is true that the roots of the sugar beet will go far into the subsoil and in that manner obtain moisture, it must be remembered that in the early stages of the plant's development the moisture supply must be derived from the soil comparatively near the surface. If the soil is not sufficiently firm it has a tendency to dry out quickly. In addition to this, if a perfect mulch is not maintained, there is danger that continuous air passages, extending several inches below the point where the growing plant must obtain its moisture, will exist, permitting too rapid evaporation.

It thus appears that culti-packing or firming is one of the most essential operations in the establishment of an automatic moisture system which will convey moisture to the growing plant from the subsoil, the reservoir which nature has provided to hold water until such time as it is required by the plant.

Experience has shown that the ordinary type of drag cannot be depended on for this operation. Nor is it possible for the drag to affect the physical condition of the soil at a depth of more than two or three inches. The writer has visited hundreds of fields in which the beets were suffering from a lack of moisture and in practically every instance inquiry revealed the fact that proper care had not been exercised in the matter of firming the soil.

How Plants Feed

In order to make the necessity of firming more clear the writer would call attention to the fact that from a physical viewpoint the method of a plant's feeding in the soil is by pressure against the food in the soil surrounding the developing root section. As the muscles of the animal stomach contract upon, squeeze and express food essences from the material carried in that organ, so the corresponding fibrous tendrils of the plant roots, acting outwardly instead of inwardly, express food from the surrounding soil.

It is not uncommon for the sugar beet in a rich soil to grow a length of two feet and more, with a circumference of six inches at the crown. This calls for a displacement of about 340 cubic inches of soil. If the beets are grown at a distance in the row of eighteen inches apart allowing the same distance between the beets, or say a radius of nine inches from center all around, we find about 2,250 cubic inches of soil in which the beet grows. Reckoning 240 cubic inches of beet against 2,250 cubic inches of soil, we find that the soil displacement amounts to about 15 per cent. In other words, the soil has been contracted to a degree equal to the rolling down of six inches of plowed soil to about five inches.

Effect of Too Dense Soil.

This illustrates why sugar beets push a considerable portion of their main or tap root above the soil surface in soil insufficiently loamed and which they cannot compress, and thus we are able to understand the culti-packing assists in the feeding of the young plants by pressing the food-containing soil about them.

At this time, when the nation is depending on the beet growers of the United States to furnish it with an increased sugar beet production, it behooves every grower to give special care to the conservation and movement of soil moisture in order that every acre devoted to beets may produce a maximum tonnage. The writer knows of no better way to insure a proper soil moisture movement than by culti-packing. At the present time there are special tools for this purpose which are of sufficient weight to set comparatively heavy soil to a depth of six inches and in the best loam soils to eight inches.

"DAMPING OFF" CAUSES LOSS

"Damping off" said James W. Jones, in a recent interview, "causes more loss in beet tonnage than most growers realize. When a crust forms and the plants are yet small, there is liable to be loss caused by this trouble. It is more dangerous because there is not much surface indication of trouble. The crust prevents aeration

(Continued on page 15)

DAIRYING

GIVING THE COW HER DUE

W. F. McSparran.

Success in the dairy business depends largely upon the following:

Someone who didn't know cows called the cow a machine. She is not a machine in any true sense of the word. She is an individual, with individual characteristcis, tastes, capabilities, limitations and adaptabilities, and the man who owns her as a machine is always the man we hear complaining that dairying is drudgery, is a slave's life and does not pay. But the intelligent owner of cows who regards his animals as so many individual creatures and so treats them as to feed and care will usually find them yielding him a profit commensurate with his investment of effort and capital.

I do not mean to say that all cows pay well or that all cows pay all the time and under all circumstances, but I do mean to say that the man who selects his cows wisely and cares for them intelligently, breeding them for improvement, and doing all the other numerous things a man genuinely interested in his business will do to make it a success, finds that his efforts do not go unrewarded. We will not ignore the fact that at this time of unusual conditions in all lines of business, there are many owners of really good cows who are not making much present profit out of them. This is so broadly true, due to so many causes at present operative, that men are becoming discouraged, and cows all up and down the land are going to the block for sale or on the block for slaughter. This condition, in a more modified form, is not new, for there always have been men going out and others going in, as I suppose there always will be. But successful dairying cannot be conducted in this fast and loose way —the men who will win must go in the business deliberately, with a determination to win, and make that determination one of his unfailing assets. He must have faith and hope, fidelity, steadfastness, intelligence, industry, patience and economy. Indeed, with such an equipment, he would probably win in any business. Without it he can scarcely win fully in any.

As the cow is not a machine neither is she a free agent. She must depend upon her owner to furnish all she lacks; therefore must her owner study her needs, having first satisfied himself that she is an individual capable of making profitable returns for all he shall invest in her. This owner will of course know that his well bred, capable, performing cow is a creature of evolution, brought to her present state of wonderful ability by long years of painstaking care and good feeding on the part of earnest men who have given her environment and heredity, thereby fixing in her possibilities of great and profitable usefulness. Knowing these things he will know also that to retain an even increase in her efficiency as a producer and a mother of her race, her offspring shall bear an imprint of his care and intelligence—and liberality— as a new and more valuable inheritance, he needs always to be as big as the biggest needs of his cow.

Then he may count on this cow always doing her bit. Market and trade conditions will sometimes be against her but in the final count she will win.

If her owner at this time must use all her profits for the unheard of prices of commercial feeds, if he gives the matter an investigating thought he will reflect that condition is not to be charged to the honest, hard-working cow, for it is not her fault if her owner has not been forehanded enough to provide from his own acres an abundance and variety of feeds such as she may use to make him virtually independent of the ups and downs of the millmarkets. He should know that good dairying presupposes good farming of crops that the cows shall need.

We know the hands that are now reaching out to our land of plenty and generous giving for food. We know, too, that once, in time of our greatest need some of those hands were put out to us and were not empty. Nor shall we fail them now—they and the others that have become lean fighting battles that have been ours from the start. They are our battles now in very truth, and ours as farmers of America perhaps more than any other class, for the fruits of defeat will fall on the land.

And the good cow will do her bit to win. The grain and hay and silage fed to her today is food for the world tomorrow, probably three times as much food from the same feed substance as we may recover from the steer; and ready twice a day for the feeding of the hungry, and she ready and willing to do her bit over and over again—surely not a machine but an inspiration.

MILK PAILS AND THEIR CARE

Often the separator and strainer are painstakingly washed and scalded while the milk pails are washed with a cloth and rinsed in the water in which the separator is sterilized. Indeed the housewife would be indignant should some one intimate her milk pails are unclean. It is a fact nevertheless that pails thus washed are simply dirty and the dirt is visible to the naked eye in the seams of such pails.

Unless close attention is paid at time of washing the soured milk that remains in the seams and other lodging places about the pails is not noticed. Close inspection will often reveal insanitary milk pails. Cleanliness is the one thing that makes quality in the dairy product in any form, whole milk, cream or butter.

An unclean milk pail will have a deteriorating effect upon quality more than any utensil, for the time the milk remains in the pails its temperature is such that it readily absorbs filth and odors—it is really an ideal seed bed for germs.

Much time and labor can be saved in washing if care is exercised in purchasing pails with smooth surfaces, with no unnecessary crevices to harbor milk or any foreign substances. We usually wash four milk pails. On three of them we have to use a darning needle, nut pick or some such tool to remove the milk from the rim at the top, on the outside, while the other one is soldered down so smooth that it needs no extra attention.

Another thing, there is quite a difference in time required to wash the ears that fasten the handles on milk pails. A milk pail can not be thoroughly washed with a cloth; never touch the milk pail with the dish rag but have a special dairy cloth. The best material for this purpose is a large square of mosquito netting as it is so easily kept clean. A vegetable brush is excellent for washing milk pails and if a nut pick is used in the crevices there will be no dried or sour milk left to contaminate the new milk.

Not only is the quality of the dairy product increased by thorough washing but the life of the pails is prolonged. Usually the pails commence to rust in the seams and bottom because they are not thoroughly dried. There will soon be a leak in these rust spots, when there is no reason why they should wear out or break sooner than other parts of the pails.

To keep the pails in the best condition, wash immediately after milking before the milk dries. First rinse with cold or luke-warm water, then wash in hot water, using some cleaning agent and plenty of "elbow grease." The creamery company to whom we sell urges its patrons to use no soap on dairy utensils. Rinse with boiling water and then invert each pail over a kettle of rapidly boiling water for a few minutes. The steam sterilizes the pail and the heat dries the surface without further attention. There will be no rusty pails from dampness when this process is practiced. If your milk pail is one with the partly closed top and is not thoroughly washed it may contaminate the milk more than all the dirt that falls into an open pail.—M. C. B.

SOME THINGS NECESSARY FOR SUCCESSFUL DAIRYING

A. B. Pike, U. S. Dairy Division.

Capital, Comfortable Buildings, Good Cows, Record Keeping, Good Sires, Community Breeding, Selection of Breed, and the Production of Suitable Crops.

Capital is necessary both at the start and for the profitable continuance of a dairy business. Just how much capital is needed depends altogether upon conditions in each individual instance.

Comfortable Buildings are necessary both for the convenience of the owner and the comfort of the animals. Expensive equipment is not advisable but rather should embody simplicity, healthfulness and convenience.

Good Cows are the factors which limit the profits to be derived from our labors. The cow takes over raw material and converts it into a finished and salable product. All records show that there is a vast difference in the ability of cows in this respect.

Record Keeping shows definitely which cows are the best producers both in milk and butterfat. It shows which are the best cows in the herd and thus enables the dairyman to build up his herd by raising the heifer calves from the best producers.

A Good Sire is a most important factor. It is through him that the efficiency of the herd is increased The herd sire should be selected with care, he should be from a highly productive strain and if of proven worth should be retained as long as possible in the herd.

Community Breeding is an advantage as the community soon becomes known and buyers visit the section in numbers. Buyers usually desire a carload of animals and naturally go where they can select their purchases from several herds of the same breed. Bulls of exceptional merit can be exchanged and preserved where there is community co-operation.

Selection of Breed should depend upon local needs and not as some think, upon individual likes and dislikes. Local and distant market demands should be studied and the local predominating breed should be taken into consideration. If one is successful with one breed he is likely

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to be equally successful with any breed. In communities removed from the railroad, the sale of surplus stock prevails and market demands for the surplus should be considered in breed selection. Further, the topography and crop possibilities should be taken into consideration.

Crops most suitable for dairy cattle should be grown. The several legumes undoubtedly furnish the best and most efficient feed for dairy cows. Every possible effort should be put forth to discover and propogate locally the most suitable legumes.

SOME OF THE THINGS I SAW AND HEARD ON A RECENT VISIT TO ONE OF THE PLANTS OF A CONDENSED MILK COMPANY.

Article Written by Ortencia Merrill, Foods II Class of the Utah Agricultural College.

First of all, milk must be produced in a sanitary manner. The farmer can produce clean milk by following three simple aides.

First—Wash udder of cow with a damp cloth.

Second—Milk with clean, dry hands.

Third—Milk into a small-neck bucket. As the milk comes from the cow, it is about 90 degrees F. They require the farmers to cool the milk down to 60 degrees F. This is done by aeration or stirring; process also removes animal odors.

There is a daily inspection of farms, milking utensils, barns, and cows by an employee of the company.

The milk is inspected as it comes to the receiving porch of the plant. It must be free from odors, and cooled to 60 degrees F., or it is rejected and paid for as second grade milk. The milk is then weighed and poured into large copper, tin-lined holding tanks.

The cans are turned upside down and placed on a revolving machine, where they undergo a cleaning process in the following order.

First—Cold water is forced into can by pressure.

Second—Hot water forced into can by same way.

Third—Sal soda solution is pumped into the can with great force.

Fourth—Hot water and steam.

Fifth—Dry steam.

Sixth—Dry air.

From the holding tanks the milk is drawn into a glass-lined or other copper-tin lined hot wells or boiling tanks. It is boiled in the open kettles by conducting live steam directly into the milk. This removes all undesirable odors. The steam is conducted into the tank by a special arrangement which throws the steam out in sprays. This method does not subject the milk to too sudden a jar or agitation.

The milk now goes to the vacumn pan where it is boiled at 130 degrees F. At sea level a perfect vacumn is thirty inches and twenty-six inches at our altitude. The day I visited the plant they had a vacumn of twenty-two inches.

A condenser is connected to the top of the vacumn, into which is passed a stream of cold water. This passes through perforated pipes which throw the water out in sprays. The purpose of the process is to take up the water vapor of the boiling milk in the pan and carry it off through the vacumn pump. The evaporation is continued until the desired specific gravity of milk is reached, or until it is reduced sufficiently to obtain the required amount of butter fat (which is 7.8 per cent,) and the total solids (25.5 per cent) of the finished product.

The condensing is stopped and the milk is pumped through a set of double-coil, german silver or nickel plated pipes. Milk running through the inner tubes and the water in outer tubes and over inner tubes, thereby cooling the milk The process required two sets of tubes for water and two sets for the brine, cooling the milk to 40 degrees F. Then it is run into glass-lined over tanks.

They are constructed of two tanks, one within the other, and a brine space of three inches between the two. The inner tank in which the milk is placed in glass-lined. The outer tanks are covered with two layers of cork board, each two inches thick, over which is a coat of cement plaster, which is in turn painted white.

Thirty thousand pounds of evaporated milk is equal to between sixty thousand and sixty thousand five hundred pounds of fluid milk. This amount can be held in one of the tanks. The milk is held here until the following day, at the same temperature at which it goes into the tank, namely 40 degrees F.

The object of the process is:

First—Make the milk of uniform quality.

Second—Standardizing the acidity.

Third—To make it possible to sterilize all milk at uniform temperature.

All of which goes to obtain the uniform product.

In the top of the tank there is a man hole provided. An employee gets into the tank, wearing rubber boots so as not to mar or scratch the tanks, gets in, and gives each one a thorough cleaning every day after milk has been removed. The cleaning is done with a sal soda solution, hot water under pump pressure, and steam under steam pressure.

Milk is then taken from the tanks and run into filling machine. A platform is built about seven feet from the floor. A girl sits here and as the cans come from the bin above, she turns them with the tiny hole upward.

Being near the ceiling we know that nearly all of the warm air will be found there. So the girl may do her work efficiently, an electric fan is placed beside her, to keep the air in continued motion.

The cans come down into the filling machine, where they are filled to a factional part of an ounce. The law requiring that each can shall contain a stipulated amount. Baby size—six ounces; tall can—sixteen ounces, and hotel size—eight pounds.

From the filling machine, they go to be tipped or soldered. This is done by a machine. As the cans come from the filler, they pass under the tipper, which falls as soon as the can reaches it; then it rises and the can passes on; a second can follows the first. The can passes to a girl sitting down, who patches it, if the machine has missed it in any way. Then it passes on to another girl who sits and watches the can, if there is any imperfect soldering, she takes the can out.

The canned milk is now ready for the sterilizer. These are large boiler-shaped machines with eight revolving cages inside. After the milk is in, it is closed tight and the cages are revolved. The milk is then placed under a high steam pressure, varying in length of time from thirty to fifty minutes. At a temperature of 225 degrees F. to 232 degrees F. The cause of the variation is due to the different seasons and different conditions of milk. It is aimed to coagulate all of the milk during the sterilizing process. The milk then requires a shaking process to bring it back into proper solution. This is done by a special machinery where it is agitated violently for a few seconds.

Coagulation cannot always be accomplished as the danger line between thickening or coagulating process and over sterilization is so close that it cannot always be done with safety.

Milk that has been shaken has much better keeping qualities.

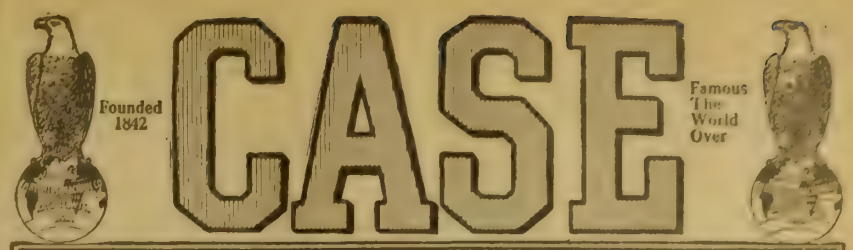
After sterilization the canned milk is placed in warm rooms. It is held here for a period not less than ten days, in order to develop any cans that may leak. If there is even a small pin hole in the manufacture of can or sealing it after the milk is poured in, the milk will spoil. To avoid such milk going on to the market, it is held for this developing process.

When milk is ready to be shipped it is tested by an employee shaking each individual can to detect any spoiled milk. A man becomes so expert in this that just as soon as he touches the can he can tell whether it is good or bad.

From the testing man it is run through the labeling machine, where the labels are placed on. Milk is then boxed and nailed ready for shipment.

Boxes are nailed up and lids put on by a machine especially made for this purpose.

I was strongly impressed with the sanitary condition of the plant. On the upper floor where all of the milk was in the open vessels, everything was painted white. Nearly all of the work was done by machinery so that very few employees were needed. In the lower story where they have most of the machinery, there isn't any milk exposed to the open, it is all under cover. It would be an impossibility to have everything white, but I assure you everything was in a clean, sanitary condition.



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Do not forget to write the boys a letter. Tell them what you are doing at home.

Keep the young stock growing. Good feed and plenty of exercise are what they need.

Paint up and clean up, even if you have to move out while the wife is doing it.

Possibly no other one thing will influence production any more than a good seed bed. It pays to have one, even if you have to work it an extra time or two.

Plant some strawberries and small fruit this year. Fruit in the season is excellent. There are so many ways to can and make jam and jellies from small fruit that they will be found a profitable part of your garden.

The spring work is on and every one is busy. Do not fail to take a load of manure to the field or farm as you go to work in the mornings. It will increase production and profits. It will clean the barn yard up and leave no breeding place for flies.

Much time and labor can be saved, by an occasional "look over" of all farm machinery. A bolt may loosen and cause considerable damage, such things may be corrected, time and money saved if you will spend a few minutes going over the farm machinery once in a while.

A little paint, well used, at this time of the year is a good way of showing your belief in conservation. Paint will protect the wooded parts of your machinery and does not need an expert to apply it. Follow the rules that usually go with all paints and you will not go very far wrong. Paint is a great conserver now is the time to use it.

To have a good garden requires constant care, follow up work, in keeping the weeds out and more or less work with the hoe if you can not cultivate with horse or land cultivator. Your garden should be well planned so that something fresh is coming on all the time. Successive planting will help. A good garden is worth the price, for it can make half the living during the summer.

Utah's best crop is our children and they will do all the necessary work of thinning beets, picking berries and other work if they are properly organized and supervised. Farmers should look ahead and plan how many and at what time he will need this extra work and make arrangements for it.

Too many people seem to think their own taxes are large enough, but do not think the other fellow is paying his share. There are many ideas about the right way to tax people. We want to begin soon and decide on some way that will suit more people than the present laws do.

Keep a head of your work this spring. Plan—think—you will then get better results this year with less labor. Two things can help relieve the labor situation—the use of modern labor-saving farm machinery and the use of brains. As the old addage says "Use your head to save your hands."

KEEP PLENTY OF SALT

It is generally known by our progressive stock growers that salt is very helpful and should be kept where livestock can have all they want to use. Some growers claim that if stock do not have plenty of salt they are more susceptible to disease.

Put plenty of salt where your live stock can have access to it, so they can get enough to satisfy them. The cost is very small and will repay many times over. Keep plenty of salt where your live stock can use what they want.

MORE LIVESTOCK WILL HELP.

Just how to conserve our feeds and turn hay, grain and pasture into food products is an important problem right now.

The larger profits do not come to the farmer by selling his alfalfa, grain or by-products direct, but it does come from their conversion into flesh, fats, dairy products, sheep, swine, cattle or poultry. This kind of farming provides profitable labor the year around. It does more it helps to make better farming. A rotation of crops well planned with livestock to turn them into marketable products is the kind of farming that is going to pay. A careful study of farming profits always shows up in favor of livestock. More livestock on the farm will help.

CHEERFULNESS

The value of cheerfulness, of a pleasant smile cannot be over estimated. To be optimistic in ones work, to be cheerful in what you are doing will make the work much more easy to accomplish.

One who is cheerful, who is optimistic, will do more work, will do it better, than will the sullen or indifferent person. Cheerfulness will make a dull day grow brighter. Have you ever noticed the one who whistles or sings as he works—he seems to do more.

There is enough sadness in the world without making more. Our part should be to make the world better and brighter to be more cheerful and optimistic.

SPECIAL CARE OF PIGS

There are several reasons why special care should be taken of pigs at this time. Our government needs the fat, the meat. According to investigations that have been made about 10 per cent of the pigs farrowed, come dead. About 20 per cent die between birth and weaning time, only about 70 per cent are raised. From these figures one can see the need of special care of the brood sow at farrowing time and good care being given to the little pigs. Experts say that this loss can be cut in half if a little more attention and care was given at farrowing time. If this is true it would add 15 per cent increase to the hog production. Then the profits of the owner would be increased in the same proportions. For your own profit and for patriotic reasons give a little more attention and care to the sow at farrowing time.

SPEED UP

What we mean by speeding up on the farm is to see that every one is at work doing his or her share. To see that every tractor every labor saving machine is doing its full duty in this speeding up of production. In our speed we must not forget to do things better, better plowing, a better seed bed, better cultivation, any thing that will make for better farming. Speed up the idle acres, see that every foot of ground is made to produce. This speed up means more work for all of us but we can do it, we must do it. It will be much better for us to take upon ourselves a self imposed task of harder and longer hours, than to be dictated by a tyrant who knows no mercy. We must speed up and whip the Kaiser.

PRODUCE MORE CHICKS

How many more chicks are we going to have this spring than a year ago? The need of increasing our poultry was so important that the government stopped the sale of hens, so that we would have plenty of eggs for hatching.

Utah is one of the best places to produce poultry and for years has been importing poultry products. The governments plan was to have 100 chickens on every farm, how near will Utah come to doing it?

Farm flocks and back-yard flocks must be increased. Set a hen today. Every incubator should be doing maximum service. If you can not hatch eggs, buy some baby chicks and start a flock of chickens today. Now is the time to act—a few weeks later will be too late. Plenty of fresh eggs and poultry for eating will help save other foods needed to export. We should produce more poultry and now is the time to act.

FIGHT THE FLIES NOW

We read so much now days about fighting that it hardly seems the right word to use when we speak of killing the flies. The importance of destroying the first flies that come out from their winter hiding place is to stop them from breeding.

Now is the time to get the start of the flies. Swat the first ones that show up and clean away the refuse, the manure piles and the dump heaps where they breed. Plan to put screens on the stable doors and windows as well as on the house this summer. If flies do not get to the manure piles to breed they will not be so plentiful. Then too, the horses and the cows will be more comfortable if they are not pestered with flies. Some fly poisons that can be used are biscromate of potash, one dram in two ounces of water and a little sugar, or a teaspoonful of formalin in a fourth of a pint of water. The first is not dangerous to human life but the second should be kept away from children and house pets. The best way is to take measures to prevent the breeding of flies by keeping the premises clean and sanitary.

THE LIBERTY BONDS

If loaning money to our government will help stop the loss of American lives, surely the bonds will be over subscribed. We want to stop the advance of the Huns, money to buy ships, ammunition, guns and equip our soldiers will do it. We all await the out come of this great battle, will it be the turning point in the war?

What can we here in America do to help in this fight for the cause of freedom? We can work and hope and uphold the zeal and enthusiasm of our soldiers in the renches by words of good cheer and a spirit of enthusiasm and optimism that right will prevail. Yes, and we can do more, we can give of our substance and of our time in furthering the efforts of our government in this hour of stress. One very practical way of doing this is to buy Liberty loan bonds. Loan your money to the government to help pay the bills of the war, to provide our boys with the equipment they need to fight efficiently.

We can show our patriotism with buying bonds. Utah has always done her part, but, have you bought a Liberty bond of the third issue.

Utah's Experimenters In Agriculture

William Ernest Carroll.

Dr. W. E. Carroll is Animal Husbandman for the Utah Experiment Station and Professor of Animal Husbandry in the Utah Agricultural College. He was born at Orderville in southern Utah thirty-five years ago last November. In this natural ranch and range country he learned, as a boy, to love livestock. He also built himself a background against which to build his later scientific training. This is important, for it is this foundation which makes a man practical. Many men are merely highly educated; Dr. Carroll is immensely practical as well. He recognizes a farm problem when he sees it, but better still he knows what methods the farmer has at his disposal. Here it is that Dr. Carroll is most helpful, in Utah's growing livestock industry.

Ernest (for such he was called) made his way through the district school at Orderville. He then had a year's good experience as teacher of the fourth and fifth grades. In the fall of 1903 he entered the B. Y. U. at Provo. In 1905 he came in contact with Dr. J. A. Widtsoe in his classes in agriculture. This great teacher gave young Carroll an inspiration for greater things as he has done to many others of Utah's best trained young men. His aim in life "located," the young student soon entered the Agricultural College, from which he was graduated in 1909. He was truly a seeker after higher education. Accordingly, he went to the University of Illinois to study Animal Nutrition under Dr. H. S. Grindley. After two years he took his master's degree and returned to Utah as Assistant Professor of Animal Husbandry.

The quality of Professor Carroll's work is shown in two things: first, he was elected to the Sigma Xi, the honorary scientific society of America; secondly, he was offered a permanent position at the Universtiy of Illinois which he refused in order to return to Utah. After one year as Assistant Professor he became Associate Professor and Assistant Director of the School of Agriculture at the Utah College. But Prof. Carroll (as the students affectionately called him) wished to finish. Another year at the University of Illinois brought him his doctor's degree in June 1914. Since this time Dr. Carroll has been Professor of Animal Husbandry at the College of Agriculture and Animal Husbandman at the Experiment Station.

Dr. Carroll is a splendid teacher; his sudents work hard because he makes them love the subject. He is well-known as a judge of livestock and as an extension lecturer in Utah and other states. He has the knack of pointing out the weak points in an animal in such a way that the owner is not affended and others know just exactly what is the matter. It is his research work in the feeding and the breeding of cattle, sheep, and hogs for which he is best known, however. It takes rare courage to begin work that cannot be completed for years—perhaps for several generations. It is just such courage as this that an animal husbandman must have. Dr. Carroll has under way breeding tests worth waiting for. Feeding is also difficult, but less so. He has worked out ,or is now working out, the value to different farm feeds along and in various combinations. Second crop alfalfa has been long unpopular as a feed. Dr. Carroll showed it to be at least equal—perhaps superior—to first or third crops. These and many other problems studied are pointing the way for livestock men. Just such help is needed everywhere. Cow testing work in Utah has been much advertised. This work Dr. Carroll has done much to assist.

Nine bulletins and circulars are Dr. Carroll's chief publications. In addition he has written many—very many—articles in agricultural journals. He is the accepted authority on feeding and management of live stock in the state.

That his ability is recognized is shown by the fact that he has been elected to the American Association for the Advancement of Science, to the American Society of Animal Production, and to the Utah Academy of Sciences, besides to two honorary fraternities—Sigma Xi (Scientific) and Phi Lamba Upsilon (Chemical).

Animal husbandry in Utah is growing. Dr. Carroll has done, is now doing, and will continue to do much to keep this growth in proper directions. He is industrious, he knows the game, and he loves it. Such a combination predicts success.

—o—

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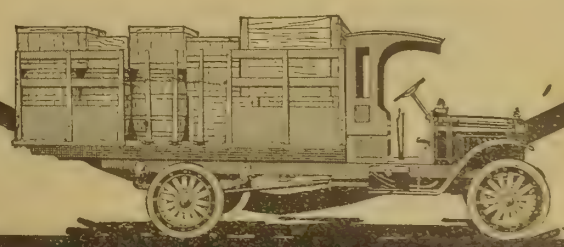

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The onion forever, the beans and the corn.
Down with the tater—it's up the next morn—
While we rally 'round the plow, boys,
And take the hoe again,
Shouting the battle cry of Feed 'Em.

—Fred Emerson Brooks.

—o—

Economical production of dairy products is possible only when an efficient cow is used.—H. F. World.

Food Situation In England

"Personally I have given all I possess to the war. All my people are in it and my home was destroyed by Zeppelin bombs in the autumn of 1915. We do not talk about these things as sacrifices in my country. We accept them as our contribution to the great cause of humanity and civilization. We are looking to America. We waited for you long and thanked God, many of us upon bended knee; when you came. And now we ask you to give us everything you can spare, not in the spirit of sacrifice (I should like that word to be eliminated from our war vocabulary). The great cause for which we fight, the cause of humanity and civilization, demands that we take our share in it as a joy and a privilege and a right; and so only shall we deserve the peace and the victory for which we pray."

Mingled with pathos and tragedy that brought tears to th' eyes of more than one audior Mrs. Burnett Smith of England concluded a dramatic address before the conference of the Federal Food Administrators in Washington on March 13, the last of a two-day session. She had come before them to plead with them for the sustenance absolutely requisite for carrying on the war in the trenched and for feeding the women, children, aged and maimed, who are enduring untold privations in the background which they once called home.

Mrs. Smith reiterated the slogan, "food will win the war," but added stress to the declaration by vividly portraying conditions as they actually exist in the United Kingdom. She explained that under the recently-adopted card rationing system, the limit of flour per week for each person is two and one half pound; while that of meat is one pound; that families go for days without an ounce of fats and indeed only when ocean-going vessels are more than ordinarily fortunate in eluding the submarine, is the rationing up to the standard established by the Food Controller.

Mrs. Smith suggested that America might profit by following the British rule of forbidding bakeries to sell bread until it has aged at least twelve hours. 'While robbing the bread of none of the essential nutritive qualities," she said "the volume of consumption is reduced by this prohibiton of the sale of fresh bread."

Mrs. Smith explained that the sale of milk to an adult in an English hotel or restaurant is forbidden by law and that it may be obtained only for children or people who are ill. Householders are placed upon their honor to purchase only such quantities of milk as are actually necessary for children or members of the family whose health is such that there is no adequate substitute.

She expressed her fear that the limit of suffering for her country is not yet. Speaking of the food scarcity the grave present situation and the ominous future, Mrs. Smith said: "I will say that I believe the next few months, before the harvests of the world are garnered, are likely to be the most critical of the war. I have come here to ask you to speed up America's effort in every direction, to spare and conserve food to the very utmost in order that these months may be tided over. Those of us who look deeply into the heart of things and from whom the truth is not hidden are very anxious about these months. We know that our people who have borne so splendidly the three and one half years of terrific strain and sorrow and loss are still determined and assured that the war must be fought to a finish. The Food test is the supreme one. But, whether the people who have lived so long in what is not generally understood to be, but really is a war zone as truly as any of the countries upon whose soil the war is being waged, can stand that supreme test, is the question of the hour."

So strongly were the Federal Food Administrators impressed by Mrs. Smith's vivid presentation of the situation in England and the need for support from America that they spontaneously leaped to their feet as she finished and after applause that lasted for several minutes, unanimously adopted resolutions declaring that they would return to their states with strengthened determination to align all their people for renewed efforts in food conservation.

FRANCE MUST GET MORE BREADSTUFF

American Shipments Only Two-thirds of Barest Requirements.

"America must do more toward reducing the domestic consumption of cereals and increasing exports to France," declared Andre Tardieu, French high commisisoner to the United States.

"You must do it because it is a case of necessity, because it must be done. For these past three months the shipments of cereals from America to Europe have been short one-third of the supply recognized as indispensable to strictly compressed needs."

Privation and Economy.

The bread ration of the French soliders has been cut from 25 ounces to 21 ounces, the civilian bread card allows 10 ounces per day which is about one-third of the average bread consumption of the French peasant or workman. The manufacture of crackers and pastry has been absolutely prohibited.

Consumption of sugar has been reduced 49 per cent and of rice 61 per cent. The import of dried vegetables has been reduced 52 per cent and of fats 48 per cent.

Forced to Kill Cattle.

Feeding of horses and cattle on cereals which could be saved for the making of bread has been prohibited. This with the lack of other feedstuffs, hay and fodder, resulted in a decrease of 50 per cent in the number of horses in France and in an important reduction of cattle. With almost no feed for their cattle, the French were forced to place them on the market as meat. This meant the suspension of meatless days and an attempt on the part of the people to make up for the lack of bread with an increase of the meat portion.

Some Districts Without Bread.

"The people who have imposed such sacrifices on themselves," are a people who have kept fighting for almost four years—a people who have mobilized 7,000,000 men from a population which, excluding the invaded territories, does not exceed 35,000,000 inhabitants, a people whose women and children have taken the burden of industrial and agricultural work left by the men who joined the army, a people whose army lost over a million men and killed, over a million men in maimed, a people whose army, nevertheless, is still holding, with an unconquerable steadfastness, over two-thirds of the western front.

"Within the last weeks, despite the restrictive measures I have stated there have been in France agricultural districts which had for days to put up with a complete, absolute deprivation of bread, a situation which could not go on without endangering the physical and moral health of the nation.

America Must Share Suffering.

"I am aware of what you have done in order to reduce your domestic consumption and to increase your exports. But you must do more. You must do it, for it is a case of necessity. You must do it because it can be done.

"We and our European allies—the British, the Italians—have been taught to suffer. Americans who are now sharing our burden of blood and of death on the battle line, we are requesting you to share as well, in the rear, our burden of suffering. In order that you and we may win the war, it is necessary that you, here in America, should all agree to a new effort and to new privations."

ONE OF THE OFFICE GIRLS NO DOUBT

"As soon as I get to camp I am going to send my girl a rifle and bayonet and a sword." "Is she collecting souvenirs?" "No but she enjoys having arms about her."—Detroit Saturday Night.

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Be Economical! Be Patriotic! Let your garden pay for most of your next winter's living.
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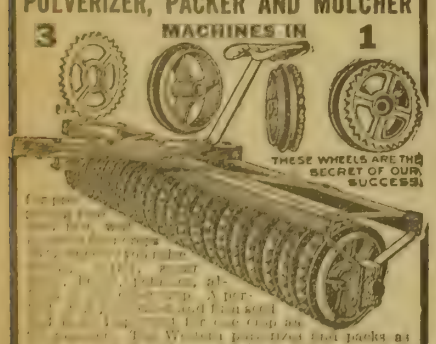

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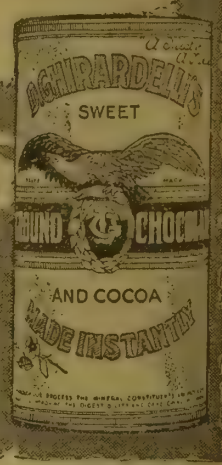

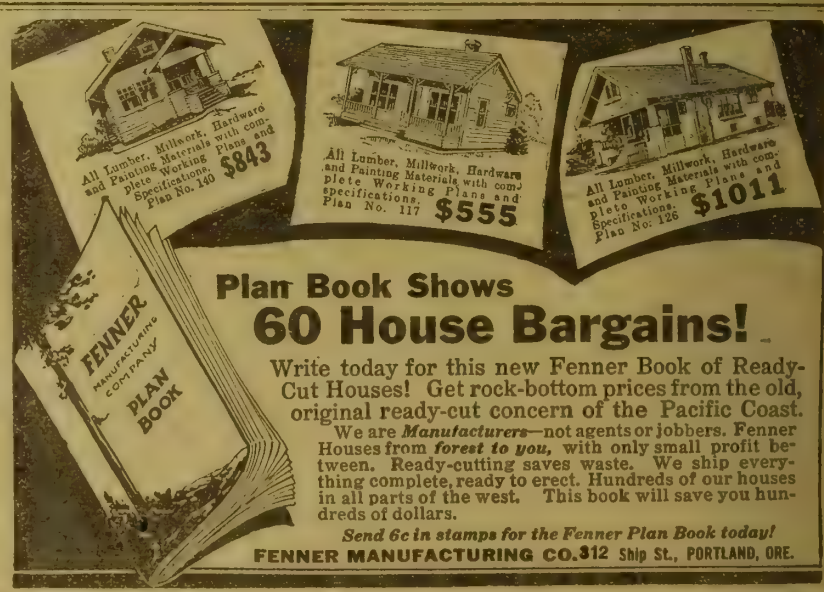

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Some Ways to Use a Disk

For every valuable implement that has been invented there are conditions as to which it may be used with best advantage. There are other conditions where it may not be used with the same advantage. Not knowing these distinctions has led to widely different opions with reference to the value of the disk. There are some conditions where it will render splendid service and there are other conditions where it should not be used. To point out where it should and should not be used will be the object of this paper.

The disk may be used with advantage usually, first, on fall plowed land of dense texture, and in the spring to aid in forming a seed bed; second, on stubble land to prepare it for being plowed later; third, on land in dry areas where trash is to be buried, and, fourth, on alfalfa lands because of certain benefits that will follow. These are not all the uses to which the disk may be put, but they are among the chief of those. It may not be used effectively as a rule to prepare land for a grain crop in the absence of plowing; it cannot be used effectively in dislodging weeds that have become firmly rooted, nor can it often be used on growing cereals with benefit to the same.

On fall plowed land of dense texture it may usually be used with advantage in aiding to provide a seed bed. Such land especially in areas of considerable precipitation becomes so impacted that the harrow alone will not penetrate it. Such land should be both disked and harrowed before the grain is sown. Other lands thus prepared are naturally so loose that to disk them would be labor lost. They simply call for a stroke of the harrow to smooth them off.

When grain has been harvested, and especially in areas where there has been or is a shortage of rain, it is a good plan to disk the land in order to prepare it for later plowing. Even though the autumn should remain dry, such land is much more easily plowed in the late fall than if it had not been disked. Other incidental benefits may follow. These include the destroying of many weeds and the mixing of the stubbles with dry earth so as to hasten their decay when buried, and also the opening of the soil to take in more readily autumn rains that may follow. Even in the spring in dry areas it may be a good plan to disk land that is to be fallowed when it carries a heavy stubble, in order to promote decay in the same.

Where much trash of any kind is to be buried in dry areas, it may be a good plan to disk the land before plowing it. Where much trash as stubble or straw or even weeds is buried at one time, the danger is present first, that it will keep the land lying to loose that it will dry out too readily; second, that it will be too slow in its decay, and third, that it will form a vegetable layer at the bottom of the plow furrow through which ascending moisture cannot climb. This may follow in dry areas even when land is top dressed with stable manure to be buried with the plow. The plan may be good which disks the manure in before the land is plowed.

On alfalfa land the disk has a use that is greatly important. This does not follow because it is the very best implement to use on such lands, but because it is a good implement to use thus, and because it is an implement which most farmers possess. Especially in dry areas it should be used on alfalfa in the early spring as soon as the land is dry. But it should not be set at such a time so as to cut off the plants, which at that time are relatively small. When the alfalfa is harvested the land may be disked with profit again. Every year thereafter it should be disked not less than twice, once in the spring and again after the first cutting. The disking accomplishes the following: First, it opens the soil so that the moisture penetrates it more deeply; second, it aids greatly in destroying weeds, and third, through these influences it greatly promotes the yield in the crop. After the plants have reached the age of two years the disking may be severe, and the disk should in all instances be followed by the harrow. Lands thus laid down to alfalfa and thus managed aid very greatly in the destruction of weeds.

In newly settled areas of the prairie and in some that are older, the disk has been much used in preparing land for sowing without the aid of the plow. In some instances this is legitimate, as on newly broken lands. When the first crop has been wheat on newly broken prairie, it may be a good plan to disk and follow with flax, or when the first crop is flax it may be a good plan simply to disk before the grain crops that follows. There may be other instances where disking will answer fairly well, as when preparing stubble land for winter rye. But this method of preparing land has so many limitations that it should be made the exception rather than the rule. The great objection to it is that it provides too shallow a seed bed.

It cannot be used effectively in destroying weeds that are firmely rooted, and especially such weeds as the Russian thistle. It may cut some of them off, but many of them will escape where the weeds are numerous. The same will apply to volunteer grains in dry areas, where the seeds have been buried with the plow. They will in some instances grow up through five inches of earth. When thus deep rooted the disk will not dislodge them: This fact detracts much from its usefulness on summer fallow land, though it may oftentimes be used with much advantage on the same.

While the harrow may be frequently used on growing cereals with much benefit, and especially in dry areas, it is seldom that the disk may be thus used. But it may be so used sometimes. The writer has used the disk with positive advantage on both winter wheat and winter rye, but it was thus used on land that had become much impacted. When land that carries a crop in dry areas becomes this impacted it will not produce a good crop of grain, even though the plants may be sufficiently numerous. The surface of the land must be loosened before such a result. The harrow, using the spike teeth straight and weighted, may not suffice to produce the desired condition, hence the advantage from using the disk. But when so used, careful attention should be given to the angle at which the discs are used, or too many plants will be uprooted. Deep cutting is wanted more than the overturning of the soil. Some plants may be destroyed by the process, but in dry areas there will usually be enough left.

FEEDING VALUE OF SUGAR-BEET MOLASSES

T. E. Leiper, Colorado A. C.

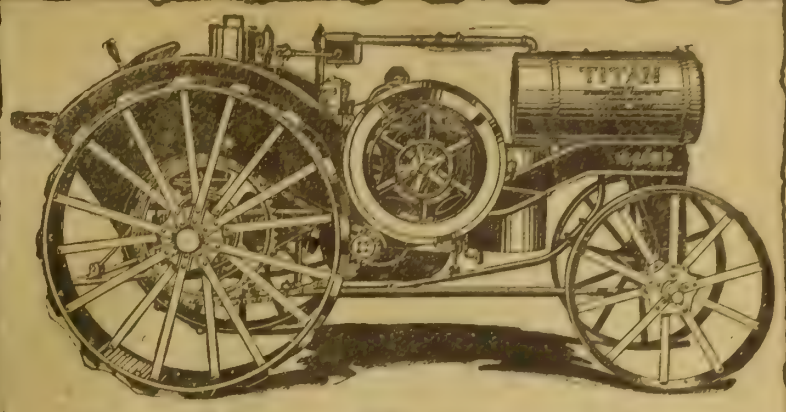
In order to determine the feeding value of sugar-beet molasses the Colorado Experiment Station placed 200 lambs in their lots on experiment October 20, 1917. One lot was fed whole barley in reversible troughs, and whole alfalfa in self feeder. The other lot was fed sugar-beet molasses in reversible troughs, and whole barley was placed on top of the molasses, while alfalfa was fed in the self feeder.

Barley was bought for $2.65 per hundred; alfalfa, $17.50 per ton; and sugar beet mloasses at $25.00 per ton. The lambs were on feed 102 days.

The barley fed lot made an average gain per head of 25.92 pounds. It took 374 pounds of barley and 779 pounds of alfalfa to make 100 pounds gain at a cost of $16.65. The lambs were sold in Denver at $15.75 per hundred.

The barley-molasses fed lot made an average gain per head of 26.71 pounds. It took 289 pounds of barley, 112 pounds of sugar-beet molasses, and 754 pounds of alfalfa to make 100 pounds gain at a cost of $15.59. This lot was sold the same way and at the same prices as the barley fed lot.

These observations indicate that sugar-beet molasses possesses about 75 per cent the feeding value of barley; i.e., 100 pounds of sugar beet molasses will give the same gain as 75 pounds of barley. Further work will be needed to detemine average results. In this particular experiment, molasses effected a saving of 25 cents per head on cost of feed.



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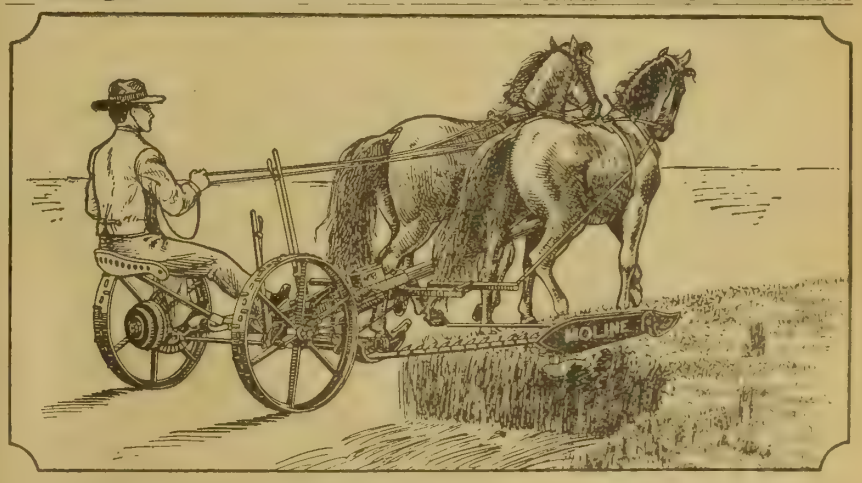

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On the rear of the Moline Mower you will notice a bell shaped gear. When this gear gets into motion it has the same effect on the sickle as a fly wheel on any machine and carries the mower through heavy and difficult cutting where other mowers fail. You can always depend on the Moline.

This is the same principle that was used on the old Adriance Buckeye Mower 60 years ago, and you won't find it on any other mower on the market. In fact, this mower is the old original Buckeye, now called the Moline Mower, and is greatly improved. Every user of a Moline Mower profits by these years of service and knows his Moline Mower will not fail him in a "pinch."

Other features such as, one-piece main frame; cold rolled steel axle and shaft; pawls and ratchets in plain view; coupling frame hinges which will not bind; five-inch driving wheels, extra heavy cutting parts; removable wearing plates; alignment device for the cutter bar; spring draft; forward acting foot lever and many other distinctive features, carry the Moline Mower through tough cutting year after year.

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It will be worth a whole lot to you to have a Moline Mower at work on your farm. Remember when you get a Moline Mower you get the product of one of the oldest and most reliable concerns in the business. This means that you can always get repairs for a Moline Mower.

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MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

HOME

EGG BREADS FOR SPRING BREAKFASTS

Eggs and milk are plentiful and now is the time to make egg breads. The milk and eggs that go into muffins and cakes are not lost; you get it all back in the bread. There is more food in cornmeal muffins than in wheat biscuit and less meat can be served with such breads.

Below are suggestions for seven breakfasts and recipes for seven egg breads.

Sunday

Cornmeal Waffles—Honey—Rice and Milk.

½ cup corn meal, ½ cup flour, 1 tablespoon melted butter, ½ teaspoon soda, 1 cup boiled rice, 2 eggs well beaten, 1 teaspoon salt, 1 cup sour milk

Sift together the flour, soda and salt; add the other ingredients and beat thoroughly; have irons hot and well greased.

Monday.

Corn-rice Muffins—Baked Potatoes—Chicken Hash.

1 cup cornmeal, 1 cup boiled rice, 1 cup milk, 1 tablespoon fat, 1 teaspoon salt, 2 teaspoons baking powder, 2 eggs.

Mix cornmeal, rice, milk and shortening together; beat five minutes, then add well-beaten eggs, beat two minutes, then add the baking powder. Bake in hot greased muffin tins or in shallow pan. Boiled hominy may be used in the above recipe instead of rice.

Tuesday.

Buckwheat Muffins—Boiled Hominy—Bacon.

1 cup milk, 1 tablespoon fat, 1 tablespoon syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder, 1 cup wheat flour, 7-8 cup buckwheat flour.

Sift dry materials together. Add to the cup of milk the melted fat, syrup and beaten egg. Combine these two mixtures stirring lightly without beating. Bake about 50 minutes in a moderately hot oven.

Wednesday

Spoon Bread—Baked Potatoes— Salt Fish.

1 cup white corn meal, 1½ cups boiling water, 1 cup sweet milk, 1 teaspoon salt, 2 teaspons baking powder, 2 eggs.

Sift meal into a bowl See that the water is boiling vigorously. Pour over the meal, stirring at the same time. When lukewarm, add the sweet milk, the well beaten egg yolk and beat thoroughly. Add the baking powder and last fold in the stiffly beaten whites. Pour into a hot well-greased baking dish and bake in a moderately hot oven thirty minutes. Serve from the baking dish, with a spoon.

Thursday

Rice Crumpets—Syrup—Oatmeal

1½ cups milk, 1 tablespoon fat, 3 eggs, 1 teaspoon salt, 2 teaspoons baking powder, 1 cup boiled rice, 1 cup cornmeal, ½ cup flour.

Combine as for muffins. Cook on hot greased griddle.

Friday.

Barley Muffins—Hash-Brown Potatoes—Bacon.

1 cup milk, 1 tablespoon fat, 1 tablespoon syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder, 1 cup wheat flour, 1½ cups barley flour.

Follow directions for making buckwheat muffins.

Saturday.

Oatmeal Muffins—Creamed Potatoes—Scrambled Eggs.

1 cup milk, 1 tablespon fat, 2 tablespoons syrup, 1 egg, 1 teaspoon salt, 4 teaspoons baking powder ½ cup wheat flour, 1¼ cup oatmeal.

Sift the salt baking powder and the flour together, mix in the oatmeal Add to the cup of milk, the melted fat, syrup and beaten egg. Combine these two mixtures stirring lightly without beating. Bake about 30 minutes in a moderately hot oven. Use granulated oatmeal or put rolled oats through food chopper.

FOOD VALUES OF FRUITS

Granville Lowther.

Since the war began so much has been written upon food conservation that it seems the whole subject has been pretty thoroughly convassed. However, the tables as generally published contain so many things, such as the chemical compositions, the water, protein, nitrogen, fiber, ash, refuse and so on, that it is difficult to hold in mind the comparative values. In presenting these figures I confine myself to the calories of energy which certain foods will produce, and while I know that this comparison is not satisfactory from the scientific viewpoint I believe that the results will be more easily remembered than if pub lished in the ordinary way.

It should be borne in mind that the principal value of most fruits is not so much in the amount of energy they will produce as in the fact that they furnish a balanced ration, thus making the ordinary foods more digestible and healthful. For instance the acids add to the food value of fats and starches. It is the experience of every one who has lived mostly on fat and starch foods that they have inordinate appetites for acids. It is not on

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60 ACRES, all planted to alfalfa and has been for a good many years, all in first-class condition; water from Bear River canal; right on the railroad, right on the county road; some of the best land in the Bear River valley. This property can be had for $150.00 per acre; small payment down and terms on the balance.

60 ACRES IN CACHE VALLEY. This property lies immediately under the canal and we are offering it for $115 per acre. It is one of the oldest farms in Cache valley and has been farmed very successfully to oats, alfalfa and sugar beets. We can accept 10 per cent down and ten years on the balance. This property is located near a good town, schools and two grades in high school. Good water for domestic purposes and first-class irrigation water. There is still some due on the water.

40 ACRES IN CACHE VALLEY, right near the railroad station, right near a good town, schools churches, and other social conditions are first-class; good water right, water for domestic purposes; on the country road. This farm has been planted to alfalfa, sugar beets, potatoes and grain. $120.00 per acre, ten years to pay, 7 per cent. There is still some due on the water.

We have two or three small pieces of land for sale in the Bear River valley, one piece of 12 acres right by the station at Tremonton. This property has a full water right and is accessible to the city water, electric light and other modern conveniences. This property can be had for $175 per acre, small payment down and easy terms on the balance.

160 ACRES OF FIRST-CLASS WHEAT LAND situated in the center of the Bear River valley, one mile from the railroad station, all under a high state of cultivation, to exchange for Salt Lake property.

72 ACRES AT EAST GARLAND for $7500.00, easy terms; water from the Bear River canal for part of this land, situated on the main county road, within a half mile of school; house, barn and other improvements on the place, electric lights and telephone. This is some of the best land in the state of Utah. Twenty tons of sugar beets per acre have been grown on this land for a number of years. There is a small orchard, some alfalfa and grain land. This property is within 1½ miles of the Garland sugar factory. If you are in doubt as to the quality of this particular farm, wire or write any bank in Boxelder county and ask for information on east Garland land.

184 ACRES, located at Thatcher, in the Bear River valley. We will sell all or divide this into smaller tracts. The farm is considered one of the best in the Bear River valley and we can recommend it very highly. It is near good schools, church and is located on the main county road. It adjoins the canal and is easily irrigated. The soil is mountain loam soil and very productive. This property is in a very high state of cultivation and is adapted for any agricultural crops, especially sugar beets, potatoes, hay and grain. The land, together with the improvements and water right, can be had at $185 per acre, on easy terms. It is seldom that a farm of this kind is ever offered for sale.

35 ACRES AT CENTERVILLE, with a nice orchard, good water right, on the main road; 7 acres in nice orchard, the balance is garden land. Six-room house, water piped to the house, every modern convenience. In fact, this is one of the nicest farms in Davis county. Price $10,500; one-half down, terms on the balance.

4 ACRES IN HOLLIDAY, 4-room modern house, water piped into the house. This property is one of the nicest little farms in this district. Price $4000; one-half down, terms on the balance.

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account of these facts that I have given this estimate, but to show the food value of certain fruit when taken alone. As before stated, these values are given in caories.

Apples 290, apricots 270, avocado 512, bananas 460, blackberries 270, cactus fruit 375, cherries 365, cranberries 215, currants 265, figs 280, gooseberries 255, grapes 450, guava 315, huckleberries 345, lemons 205, loquats 395, mulberries 280, mushmelons 185, nectarines 305, olives 407, oranges 240, peaches 190, pears 163, persimmons 630, pineapples 200, plums 395, pamegranites 460, prunes 370, raspberries (red) 255, raspberries (black) 310, rhubarb stalks 105, strawberries 180, water melons 140.

Dried Fruits.

Apples 1350, apricots 1290, bananas 1240, banana flour 1610, citrons 1520, dates 1615, figs 1475, pears 1635, prunes 1400, raisins 1605, raspberries 1705

Most fruits, like other classes of food, contain more or less material such as pits, skin, etc., which is inedible. When such portions are removed a larger or smaller part of the edible material is almost always of necessity removed also, and is spoken of as "waste." Thus, of pears it constitutes on an average 10 per cent of the total fruit, peaches, 18 per cent apples and grapes 25 per cent, and bananas, 35 per cent, while in the case of raspberries and blackberries there is no refuse and the whole fruit can be eaten.

The analytical data quoted above show that fresh fruits are in general dilute foods—that is, the proportion of water which they contain is large, compared with the total amount of nutritive material. It has been suggested that fruits containing 80 per cent or more of water be classed as flavor fruits and those with less than 80 per cent as food fruits. Such fruits as strawberries blackberries and raspberries would be included in the first class and fresh figs, banana, grapes, etc., in the second. In dried fruits which have been concentrated by evaporation the percentage of nutrients is very much higher than in fresh fruits. Some preserved fruits also possess a comparatively high nutritive value, owing to the evaporation fo water by the heat of cooking or to the addition of sugar, or to both factors. Candied fruits, such as cherries and apricots, may be looked upon as typical examples of this class of fruit products. As regards composition, the water content is low and the carbohydrates and consequently the energy value is very high, owing to the added sugar.

Olives and the avocado are remarkable for the large percentage of fat which they contain, but in general it may be said that this constitutent is present in very small proportion in fresh fruits. In the case of the apple, pear, etc., it seems probable that the small amount of fat obtained in chemical analysis consists of the coloring matter contained in the fruit or of wax found in the skin. That the amount of wax may be considerable is evident when we recall the fact that fruit wax is collected from bay berries and other fruits in quantities sufficient for candle making and other purposes. That common fruits actually contain fat, though it is not generally associated with them is shown by a recently published study of the fat of woods strawberries. The dried berries when extracted yielded a small amount of oil, cloudy at ordinary temperatures, but clear when heated, and much like linseed oil in its properties

In the majority of fruit and fruit products the carbohydrates are the food constituents most abundantly represented. The proportion of nitrogen free extract varies greatly being lowest in the fresh and highest in the dried and preserved fruits. In seeds which are commonly eaten, such as the cereal grains and beans, peas and other legumes, the nitrogen-free extract is quite largely made up of starches. In fruits, however, sugars and the so-called pectin bodies, with very often more or less starch, make up the group. The principal sugars in fruit are cane sugar, grape sugar (glucose), and fruit sugar (levulose), the last two being usually present together in equal quantity and designated invert sugar or reducing sugar. The stage of growth and the degree of ripeness have a very marked effect on the kind and amount of sugar, and it is therefore difficult to give average figures for the quantities present which will be fairly representative. An idea of the range in the sugar content of ripe fruits may be gathered from figures quoted from a summary published several years ago. According to these data, invert sugar ranged from 2 per cent in round numbers in large early apricots to 15 per cent in grapes and a variety of sweet cherries. A number of fruits (strawberries, gooseberries, raspberries, and apples) contained about half the latter quantity. The cane sugar ranged from less than 1 per cent in lemons to 14 per cent in a variety of plums. Bananas also contained a fairly high percentage, namely, 11 per cent.

Fruit sugar rarely occurs unaccompanied by grape sugar, but has been thus reported in the mango and in amounts large in proportion to the grape sugar in sweet apples and sweet pears and a number of varieties of grapes. In the case of grape sugar large amounts—18 to 30 per cent—have been reported in juice of different sorts of grapes, while in dried fruits the values are even higher, 32 per cent having been found in prunes, 54 per cent in Zante or "English" currants, which are, of course, a small seedless grape, 61 per cent in raisins, 49 per cent in figs and 66 per cent in dates.

The acid in fruits, which in proximate analysis is not usually determined separately, varies within rather wide limits, 1 to 2 per cent being reported on an average in such fruits as apples, pear, plums, strawberries, etc., and as high as 7 per cent or more in lemon juice. It often happens that of two fruits with the same acid content one has a much sourer taste than the other because the acid is not so much masked by sugar.

Fruits contain a comparatively small amount of mineral matter—less than 1 per cent on an average—consisting quite largely of potassium salts, with a little phosphoric acid, iron, lime, etc.

As a class it is apparent that fresh fruits are directly comparable with green vegetables and root crops rather than with more concentrated foods, such as flour or meal. The dried and some of the preserved fruits, which are more concentrated than the fresh, compare favorably with bread, dried beans and similar foods on the basis of total material present. There is this difference, however, that the cereals and dried legums contain fairly large proportions of protein, while the quantity present in fruits is always small. In other words, fruits—fresh, dried and preserved—are sources of energy rather than of tissue-forming material.

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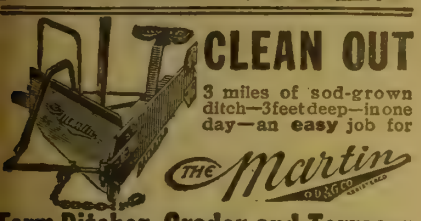

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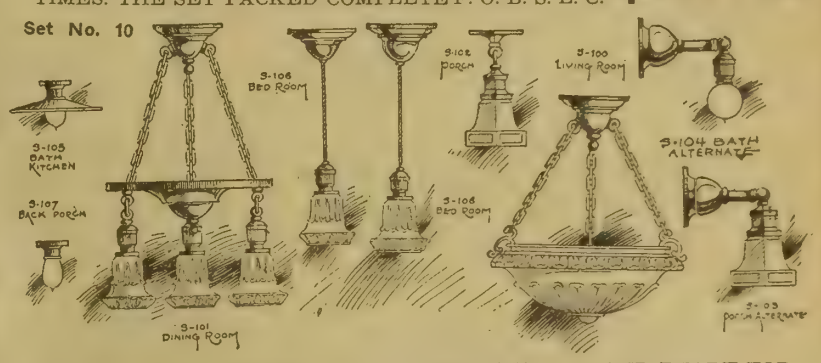

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LIVE STOCK

PREVENT "SORE MOUTH," A DEADLY PIG DISEASE

With the crop of spring pigs comes the danger of losing them from disease. One of the most prevalent and deadly diseases to which they are subject is "sore mouth" or, as it is technically known, necrotic stomatitis.

This trouble is commonly overlooked because the mouth is the last part of the pig's body that is suspected of being the seat of disease. From the fact that pigs take all sorts of things into their mouths, it is not strange that the germs which cause sore mouth are frequently introduced, as they thrive in the litter of pens and yards, and also in the soil.

The germs enter the soft tissues of the mouth through wounds caused to the lips, gums, tongue and cheeks by tooth cutting or other injuries. Here they set up an inflammation that produces these symptoms:

Inability to nurse and eat as usual; soreness; swelling of the affected parts, ulcers or cankers, from the size of a pea to that of a dime, with dark red borders and cheese-like centers; a very bad odor from the mouth; blood-tinged saliva; blood poisoning or death after a few days or weeks in many cases not given proper attention.

Treatment should be begun just as soon as the disease is discovered. It consists in carefully removing the cheesy material from the mouth cankers and applying tincture of iodine. Then the mouth is to be syringed out with a solution of potassium permanganate made by dissolving one ounce of these crystals in two quarts of freshly boiled, clean, warm water. Bad cases should be treated twice a day, all cases daily until healing has taken place. Every pig in the herd should be caught and its mouth examined for sores, even if apparently well, for the disease is directly contagious from one animal to another and indirectly through the teats of the cow and soiled litter.

As a precaution to guard against the development of this disease, the mouths of all the young pigs should be flushed out with the antiseptic solution mentioned above. The pens should be cleaned up and disinfected with a reliable disinfectant prepared and applied according to the directions of the manufacturer.

After all the pens have been cleansed and disinfected in the manner just described, the entire interior of the hog house, including the ceiling, should be whitewashed. Besides giving the pens a clean appearance, whitewash aids in removing bad odors.—Dr. F. B. Hadley.

HOW TO MOTHER THE ORPHAN COLT

Few mares give enough milk to divide with two colts, so when a mare dies at foaling time and the colt survives, the orphan foal must be reared by hand on cow's milk. This is not a hard job if the operation is conducted intelligently, but it is one requiring great patience.

At first the cow's milk, which is richer in fat but containing less sugar than mare's milk, must be modified by adding an equal amount of boiling water to each feed; a tablespoonful of sugar should also be added to each quart of milk, and a little lime water will act as an aid to digestion. Freshly drawn milk from a cow that has recently freshened is preferable, and the poorer the milk is in butter fat, the better. For the first few days feed about half a teacupful of the prepared milk, at the blood temperature, every hour. The colt can usually be taught to take the milk from a bottle that has a nipple.

As the foal grows gradually increase the amount of milk and lengthen the intervals between meals. After the first week, if all goes well, the time of feeding can be extended to once in three hours for a couple of weeks, then feed three times daily until the colt takes readily to eating grain. It is not well to make any hard and fast rule as to quantity of milk to feed. The main thing is to watch the colt carefully and to see that its hunger is kept satisfied, and to do this by frequent feeding, so that its stomach may be kept full, but not unnaturally distended. If nature's methods are followed as nearly as possible, there is rarely much trouble in raising a motherless colt.

The water may be eliminated gradually as the colt becomes accustomed to the cow's milk, and in about six weeks fresh skim milk may be substituted for the whole milk, as with calves. By this time the orphan foal will have learned to drink from a pail. It is of the utmost importance that the pail from which the young animal feeds be scrupulously clean, otherwise bowel trouble is likely to result. After each meal the vessel should be thoroughly scalded. The colt should be fed grain, oats and bran, as soon as he will eat it. Only a small feed should be given at first, but it may be gradually increased with profit until the colt is getting all it will eat up clean twice a day. As exercise induces a good appetite and causes the bowels and kidneys to act freely, every fair day let the colt run in a lot or pasture field. During its infancy an orphan colt seldom looks as smooth as a foal that runs with its dam, but after the former learns to eat grain and grass freely it will usually do as well as other colts.—W. F. P.

FARM SANITATION

Each year there is bound to be accumulations about the farmyard that will need cleaning up and ridding out in order to keep it in the very best and most sanitary condition. The time for making a thorough clean-up; as I have found it, is during the winter months before preparation for spring work begins. Then it is possible to destroy all germ-laden filth that may have accumulated and fill up the low places with good clean soil so there will not be a cesspool at the stable door. For my part I prefer the use of a wheelbarrow in cleaning my stable and have the manure heap a little distance from the stable door.

Decayed manure, cesspools and slop are breeding places for flies and these are the worst germ-carrying agents the farmer has to contend with. Stagnant water is the breeding place of mosquitoes, so I have found it best to fill in all such unnecessary low places about the farmyard with a two-wheel scraper. I use a covered barrel on wheels for the accumulation of garbage at the back door, so that I can remove it to the pigs at regular feeding periods each day. This helps keep the yard clean and does away with a good many flies that bother when an open garbage can is provided.

During the winter weather the stock are on the inside a good part of the time, so I provide plenty of good clean bedding. This aids in the accumulation of rich manure that I spread on the fields later on. I have found that it is well to give careful attention to the ventilation in my stock barns. A costly experience with hogs a number of years ago taught me the importance of fresh air. Cholera had attacked part of my herd, and a large number of hogs died. The veterinarian who came to look at the hogs advised me that more than half of them died as a direct result of hot sheds and lack of good ventilation rather than from the effects of the cholera.

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Needless to say, I recontsructed my sheds and provided for the best ventilation.

I provide a good supply of fresh clean water at all times for all the stock so none have to go to a pond or other standing water for their drink. They appreciate it as much as a person, and the milk cows express their gratitude by responding with an added flow of milk. In the winter time I use a tank heater so that my cows can turn their energy to the making of milk instead of warming the water that would otherwise be taken into the body when ice cold. The little bit of coal that is required is cheap when the results are considered. As to the well that supplies water for the house, I prefer that it be as far as possible from the barnyard and cesspool, and on higher ground to prevent any drainage of polluted water into the well. The general lay of the land sometimes affects the underground seepage. In my locality the geological survey shows the general slope of the land to be toward the east ward or southeast and for that reason we endeavor, if possible, to locate our wells to the northwest of the barnyard. In the summer time I provide a sanitary wallow for my hogs, but anything that falls under the insanitary class is promptly filled up before next summer arrives.

I have found that cleanliness is an excellent virtue about the dairy barn. It is greatly appreciated by one's milk customers, and will be rewarded by a higher price for the dairy products. Before milking I curry the cows' rumps and clean any chunks of barnyard accumulation from the brush of their tails. I wash the cows' udders with a large sponge and warm water, thoroughly drying them with a clean dry cloth. I use two suits of overalls and jumpers for milking time, so as to have a clean change every week. After milking each cow I pour the milk into a large covered milk can set in a clean room adjoining the milking place. In this room I have my scales also my milk and feeding records.—H. E.

HIDES AND LEATHER PRODUCTS

Many of our readers have been complaining that hide prices have gone down very materially during the past year, whereas the leather products which the farmer has to buy, notably shoes, have advanced very materially. Local shoemen, when questioned about the matter, oftentimes ignorantly give as an excuse with regard to shoe prices the advance in the price of hides, which the farmer knows to be untrue.

To get a little clearer insight into the matter, we have written a number of firms dealing with hides. Without exception all the concerns tell the same story. On the class of hides coming from heavy cattle, and known as heavy packers' hides, there has been almost no decline during the past year, or at most not more than two or three cents. But on the class of hides which the average farmer occasionally sells in the country, and which go under such names as "country hides," or "buffs" and "extremes," there has been a decline of five to ten cents a pound, a very considerable decline taking place during January, 1918.

All light grades of hides and most country hides have declined to a point just about on a level with prices as they prevailed early in 1914, before the war began. The reason why heavy packers' hides should be higher in price is because the government, in its contracts, specifies such hides particularly. Harness leather is made very largely from heavy hides, and so it seems that the farmers and the government are in competition for the most desirable type of hides on the market.

Shoes are quite largely made out of hides which are now averaging about 20 per cent cheaper than a year ago. As to shoe prices, one firm handling hides writes:

"As to the reason for the extremely high prices of shoes, we should like ourselves to hear an explanation from a shoe manufacturer for this, as we do not see that with the advance in shoes has been justified with the advance in hides. But, on the other hand, we would take into consideration that while we have cheaper hides at the present time, the leather which is on the market in shoes was made out of hides bought nearly six months ago, when they were very high, as the process of making leather from hides and getting it into a finished product takes from four to six months' time."

Wilson & Company write:

"Outside of harness leather, there is no excuse whatever for any leather or product made thereform being as high today as it was a year ago, as both hides and leathers, espeically for shoe purposes, are far cheaper today than they were in the corresponding period last year. The present weakness is due to the fact that the domestic business is very poor, and only the heaviest hides are suitable for military purposes. The latter class of stock showed a decided decrease in production in 1917 over 1916. On the other hand, light hides which are suitable for domestic use are in abundance, and have been for the past year."

One reason why hides are a drag on the market at the present time is the fact that we slaughtered about five million more cattle in the United States in 1917 than in 1916, and the bulk of these cattle produced light hides of the type now suitable for military or harness purposes.

Armour & Company give their view as to the cause of the weakness in hide prices as follows:

"In the first instance, we think the English embargo on hides and leather is the fundamental reason for the demoralized condition of the market. In the second instance, we think the 1917 domestic trade was extremely limited; first, on account of the high price of shoes in the retail shops; and, second, on account of the fact that there were so many young men going into the army that they did not renew their shoes, but waited until the government gave them shoes with their army equipment.

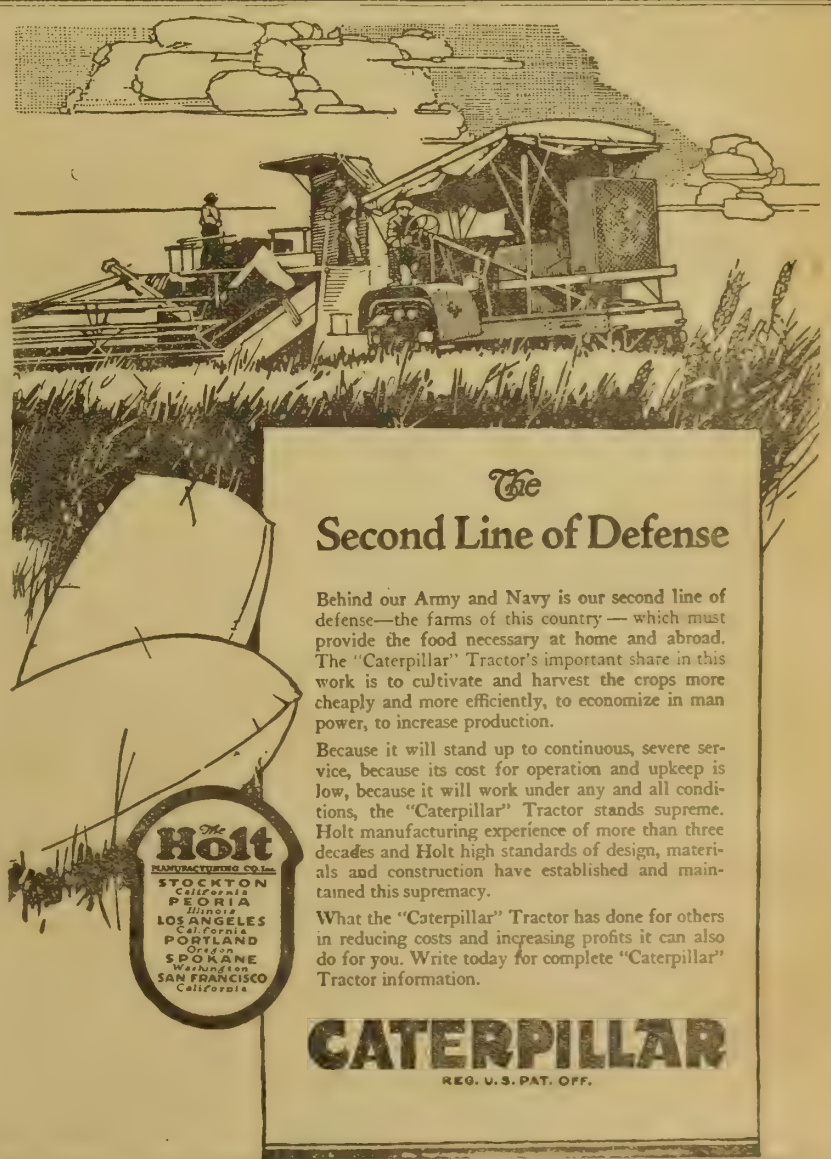
"Another very important reason has been the fact that the hide markets of Europe have been closed to the South American hides. Hides from Chile, Venezuela, Brazil and Argentina have all been coming to the United States. Importations show an increase of over 75 per cent last year, as compared with previous years.

Doubtless the shoe manufacturer has his troubles, but so long as the hide market continues low, the farmer has more right to feel grieved over the increased prices of shoes than over the increase in prices of any other leather product.—Wallace Farmer.

KEEPING UP WITH FATHER

It was a Pike County woman who indited a note to the teacher concerning the punishment of her young hopeful. The note ran thus:

"Dear Miss ————: You rite me about whippin' Sammy. I hereby give you permission to beat him up any time it is necessary to learn his lesson. He is just like his father—you have to learn him with a club. Pound nolege into him. I want him to get it—and don't pay no attention to what his father says—I'll handle him."—Reading Eagle.



UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.
A. J. PLATT, MF'R.
BOX 0 STERLING, ILL.

MILLER-CAHOON COMPANY
General Agents
Idaho Falls, Idaho Murray, Utah

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending April 9th—Cattle—Receipts, 2,960; market, steady; choice steers, $10.25@11.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $8.00@8.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $7.00@7.75.

Hogs—Receipts, 1,265; market, steady; tops, $16.75; bulk of sales, $16.75.

Sheep—Receipts, 2,892; market, steady; lambs, $16.50; ewes, $9.00@10.50.

NORTH SALT LAKE, April 11.—

Cattle—Receipts, 87; market, 25c higher.

Choice steers	$10.25@$11.40
Good steers	9.25@ 10.50
Fair steers	7.75@ 8.75
Choice cows and heavy heifers	7 75@ 8.75
Fair to good cows and Heifers	6.50@ 7.50
Cutters	5.50@ 6.25
Canners	5.00@ 5.50
Fat bulls	6.75@7.50
Bologna bulls	6.00@ 6.50
Veal calves	8.00@ 10.00

Sheep—Receipts, none; market, steady.

Good choice grain fed lambs	15.25@ 15.75
Choice yearling wethers	12.00@ 13.00
Fat wethers	12 00@ 12.50
Fat ewes	10.00@ 11.00

Hogs—Receipts, 91; market, steady.

Choice smooth fat hogs, 175 lbs. to 250 lbs.	16.75
Bulk of sales	16.50@ 16.75

Omaha.

OMAHA, April 11.—Cattle—Receipts, 6100; 15c to 25c higher; native steers, $11.75@17.50; cows and heifers, $8.50@12.50; western steers, $9.10@13.00; Texas steers, $8.75@10 75; cows and heifers, $8.50@11.00; canners, $7.75@8.75; stockers and feeders, $7.15@12.50; calves, $9.00@13.00; bulls, stags, etc., $8.50@11.50.

Hogs—Receipts, 1500; market 10@15c lower, heavy, $16.70@17.10; mixed, $16.75@17 10; light, $16.75@17.30; pigs, $10.00@15.00; bulk, $16.75@17.10.

Sheep—Receipts, 12,500; market steady; yearlings, $15.75@17.50; wethers, $14.00@15.50; ewes, $13.50@16.00; lambs, $18.75@20.75.

WHAT IS WHOLE WHEAT FLOUR

Prof C. T. Hirst, U. A. C.

What do we eat when we eat whole wheat flour? Just what the food administration means by whole wheat flour we don't know, and if we leave the answer up to the millers we find as many answers as mills. When I analyzed five samples of whole wheat flour from as many Utah mills, this is what I found: Mill No. 1 says whole wheat flour should contain no bran; Mill No. 4 says half of the bulk and one third of the weight should be bran. Mill No. 7 says that whole wheat flour should be over half shorts. Mill No. 5 says no shorts should be used.

As a matter of practical interest to the housewife, it appears that certain brands of whole wheat on the market represent about one half the food value of others selling at the same price. Graham samples, analyzed, show the same wide variation. Some millers are letting their patriotism run away with them, at the expense of the stomachs and purses of their customers.

THE VARIOUS SAMPLES ANALYZED AS FOLLOWS:

Company Manufacturing Article	Grade	Weight of Sample Used Grams	% Flour	% Fine Middlings	% Coarse Middlings	Total % Flour & M.	% fine bran	% bran	Total % bran
Mill No. 1	Whole wheat flour	1000	34.00	34.00	32.00	100.00			
Mill No. 2	Graham flour	1000	33.70	28.20		61.90	36.70	1.60	38.30
Mill No. 3	Graham flour	1000	86.00	4.73		90.73	9.00		9.00
Mill No. 4	Whole wheat flour	1000	40.40	21.70		62.10	29.70	8.00	37.70
Mill No. 5	Whole wheat flour	1000	38.40	30.40		68.80	29.30	1.80	31.20
Mill No. 6	Best graham flour	1000	35.05	24.00	17.80	76.85		22.60	22.60
Mill No. 7	Whole wheat flour	1000	38.10	15.35	39.54	92.99		7.12	7.12
Mill No. 8	Graham flour	1000	59.40	16.70		76.10	20.60	2.45	23.05
Mill No. 9	Whole wheat flour	1000	80.00		13.96 shorts	93.95	6.50		6.50

Bran did not pass No. 20 wire screen.
Fine bran did not pass cloth 68XX gauze.
Fine middlings or shorts according to texture did not pass 11XX silk.
Flour passed 11XX silk.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQU'RED BY THE ACT OF AUGUST 24, 1912.

of Utah Farmer, published Saturday, at Lehi, Utah, for October, 1917 Postoffice address, Lehi, Utah, Managing Editor, Business Manager, James M. Kirkham.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total stock.) Deseret Farmer Pub. Co.; James M. Kirkham, Lehi, Utah; John A. Widtsoe, Salt Lake City, Utah; Thos. Judd, Laverkin, Utah; W. S. Hansen, Fielding, Utah; Jesse Knight, Provo, Utah; R. L. Anderson Estate Salt Lake City, Utah; L. N. Stohl, Salt Lake City, John Q. Adams, Logan, Utah; F. S. Harris, Logan, Utah; O A. Kirkham, Salt Lake City, Utah.

Known bondholders, mortgages, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities. (If there are none, so state) None.

JAMES M. KIRKHAM.

Sworn to and subscribed before me this 12th day of April, 1918

(Seal) E. L. CHIPMAN, Notary Public.

Knowing Good Feed

Scientific feeding eliminates the uncertainty of results. Know what your feed contains, and what you may expect from it. If you feed

SUN RIPE

Stock Feed

you know that it contains oats, barley, cotton-seed meal and sugar beet molasses. Now you know what to expect from a combination of materials such as these. If you do not, write for our booklet "Feeding for Results"—it's free.

Utah Cereal Food Co.
Ogden, Utah.

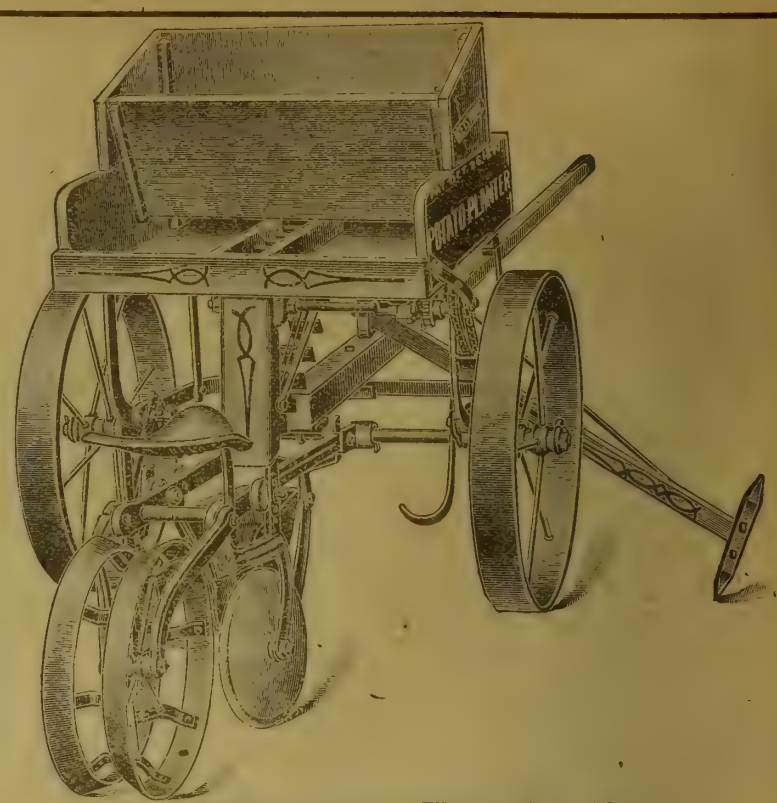
Lubricating Ford Cars

STOP! Mr. Ford Owner—stop long enough to decide definitely whether or not you are using the correct oil for your car.

It's an important matter, when you consider that a little care now will add a few more years to the service of your car.

If you are not using a SPECIAL Ford Oil, clean out your crank case, refill with **Simplex Ford Motor Oil** and note the improved action of your motor.

Utah Oil Refining Co.
Salt Lake City



Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

MILLER-CAHOON COMPANY
GENERAL AGENTS
IDAHO FALLS, IDAHO MURRAY, UTAH

FARMERS
ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

Utah Savings & Trust Co.
255 So. Main, Salt Lake

W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
F. M. Michelsen, Cashier.

FOR SALE

One 2 year old heifer, one 18 months old heifer, one 15 months old heifer. All high grade Jerseys. The Dam of each one made more than 350 lbs. butter fat in nine months.

ROE A. DEAL
Springville Utah

BABY CHICKS

Booking orders for our Quality S. C. White Leghorn chicks. Order quickly. Supply will soon be exhausted.

MOUND VIEW FARM
Brigham, Utah, R. 2 Phone 92-R-1

Bourbon Red Turkey eggs from prize winning stock, $4.00 per 12. Rouen duck eggs, $2.50 and $3.50 per 12. Every bird a winner. Also colored Nuscovy duck eggs, $2.50 per 12. Emma Miller, Farmington, California.

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
Wellsville, Utah

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Ramb ullet Sheep.

W. S. HANSON, Prop.
Collinston Utah

Order From Producer

R. I. RED BABY CHIX

MY SPECIALTY

Vigorous heavy laying stock. Limited number, Barred Rocks, Black Minorca Chix, $15.00 per 100.

DENTON POULTRY YARDS
Cambell California

WANTED

RELIABLE PARTY TO TAKE CARE OF TRACT OF LAND PLOWED AND SEEDED.

BOX 802
SALT LAKE CITY, UTAH

LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Calalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.
LEHI UTAH

When you answer the advertisements always mention the Utah Farmer.

McAdoo Appeals to Farmers

Secretary W. G. McAdoo has sent the following appeal to Chairman Heber J. Grant. He asked the farmers to lend all money they can to the government to aid in fighting for Liberty. Here is the message:

"It is a matter of supreme national importance that the treasury of the United States shall be supplied at all times with the amount of money needed to furnish the food the clothing the guns, the ammunition required by our soldiers to fight successfully for the safety and liberty of America; to pay the allowances made by the government to the dependent wives and children of these soldiers and to pay the life insurance which the government permits every soldier to buy from it. The treasury must also have the necessary money to extend credit to the gallant Britons, French, Belgians and Italians who are fighting alongside American soldiers on the bloody battlefields of France, Belgium and Italy. If the American people fail to lend their money to their government for these noble purposes, how can we gain a victory in the glorious cause?

"Everyone can help by lending their money to the government. They do not make a gift of their money, they merely lend it on impregnable security and are paid interest on the loan. At the same time, the farmers of the nation can render genuinely patriotic service by l nding all the money they can to their government and encourage everybody else to do the same. It makes no difference how small the loan, it will be helpful. Those who can only buy thrift stamps should buy thrift stamps. Those who can buy only war savings stamps should buy war savings stamps. Those who can buy Liberty bonds should buy Liberty bonds always. They should buy as many st mps and as many bonds as they can, instead of as few. The government has now put these loans in such convenient form that there is no citizen in the land who cannot help to some extent if he is patriotic enough to do so.

Relying on Farmers.

"I rely upon the farmers, than whom there are no more vitally interested in protecting America's future and the liberties of the world, to do their utmost to help in this great Liberty work. The farmers are already performing patriotic service of the highest value in raising the foodstuffs needed by our own military forces and citizens at home and by the soldiers and civilian populations of the great nations asociated with us, but they have a further duty to perform. They should invest all of their available money in the obligations of their government. In doing so they will not only benefit themselves by saving this money, but will be helping to defend their liberties, their rights, and their farms against the threatened aggressions of the most powerful autocratic and military government ever created. The farmers of the nation traditionally are freedom-loving people. One hundred and forty-three years ago on the 19th of this month the farmers of Lexington and Concord fired the first shot for liberty and it was heard round the world. I know that the American farmers of today are just as liberty loving as their heroic ancestors. I know that they will join with other Americans of every business and profession in providing the money which will enable their government to fight to a victorious conclusion, this great war for liberty, justice and America's sacred rights."

"DAMPING OFF" CAUSES LOSS

(Continued from page 3)

of the soil. The small plants have not the ability to push through even a thin crust, on some soils. The natural vigor of the plant is reduced and disease so threatens the vitality that many plants will die and many of the remaining will be only stunted, puny specimens.

"Be on the lookout for trouble. Just beneath the surface, the outer portion of the plant turns brown. The tissues are dead. Except in the last stages of the attack, the inner portion of the rootlet shows a slender white thread tissue, which, if relief comes not too late, will start a fresh growth and redeem the plant.

Remedy:

Use a roller or other implement that will break the crust. The irregular surface roller or packers are better than the smooth surface. Even though the plants are through the soil and showing well above the surface, the trouble may bother. Use the roller. It may appear to mash the leaves but the good will outweigh the apparent injury. Then, after rolling, cultivate; then cultivate some more. Warm up the soil. Use care to not stir too deep and thus sacrifice the natural moisture.

HERD BOAR FOR SALE

I have some extra good big growthy boars eight months, ready for service, sired by Richards Defender and Pathfinder.

Priced to sell soon and guraanteed to please or will refund money.

ERIK W. OLSEN
Virginia Idaho

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy, hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY
Ogden, Utah.

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this root crop to supply an essential food for both soldiers and civilians. The world is crying for sugar do your part towards supplying this demand.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service.

Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

WE WANT FARM LANDS

IN EXCH NGE FOR

SALT LAKE CITY PROPERTY

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah

FOR SALE

For splendid laying qualities and beauty, buy either Buff Orpington or Black Minorca eggs for hatching, $1.00 for 15.

MRS. P. MAHER
639 Seventh St. Ogden, Utah

BABY CHICKS—BABY CHICKS

White Leghorns, Brown Leghorns, $12.00 per 100.

R. I. Reds, $15.00 per 100.

ORLAND HATCHERY
Orland, Glenn County, California.

BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS

Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.

J. H. SHAFER
Proprietor Ogden Feed Co.
2246 Wash. Ave. Ogden, Utah

WANTED to hear from owner of good Ranch for sale. State cash price, full description. R. F. Bush, Minneapolis, Minn.

HEREFORD BULLS

C. F. DIXON & SONS
Payson, Utah.

HAVE 11 HEAD

6 to 16 months old

FOR SALE

Special prices to take them all.

You Know Your Duty!

If the peoples of the earth are not to become toiling millions for the Prussian Junkers and the Prussian Krupps, if they are not to be terror-ridden slaves at the mercy of a German Kaiser's will, Prussianism must be driven back within its own borders and kept there.

Not only English freedom, French freedom is at stake. Our own cherished institutions, our free government, all that our fathers fought for, all that free peoples prize, is threatened by an enemy that would impose his own hateful Kultur on every free institution in every liberty-loving land.

That is why the war must be fought on European soil. We are fighting in Europe now that we may not have to fight in America, on the very thresholds of our own homes, later.

We are fighting for the safety and liberty of our children, our homes, our country. No price is too great to pay for Victory.

Americans, you are called upon to back our armies in France, to furnish them the guns and shells and ships and airplanes, the enormous quantities of every sort of supplies that they must have to defeat the Prussian armies and drive them back across the Rhine.

The War Is Being Fought in Europe---
But It Must Be Won Right Here at Home

Will You Strike a Blow for American Freedom? Your Support of the Third Liberty Loan Is Your Answer. Invest Today in Liberty Bonds-----All the Bonds You Can

UTAH LIBERTY LOAN STATE CENTRAL COMMITTEE

—This Advertisement Donated by the Utah Farmer.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 38 LEHI AND SALT LAKE CITY, UTAH. APRIL 20, 1918

Dairying In The War Time

By J. E. Dorman in charge of Western Office Dairy Division.

We are too far from the battle front to hear the roar of the big guns, but we can hear the echo in the call for supplies and support. Among the supplies needed, dairy products come near the top of the list. They are not only needed for our allies, but are absolutely necessary to the welfare of our own country. Patriotic dairymen everywhere have responded splendidly in keeping up the supply.

There never was a time, perhaps when the margin of profit has been smaller or so uncertain and it will probably crowd out the dairymen who do not take advantage of introducing better business methods such as: Keeping records of the production of the individual cows so that low producers may be culled out and providing silage for them during the winter months. These two moves are absolutely necessary to attain the efficiency that is called for at this time. Every effort should be made to cut down the cost of production, which means the same in the end as an advance in prices for the products.

Home grown feeds are always cheapest. Every dairyman can grow sufficient roughage to feed his herd, consisting of silage and clover or alfalfa hay. While one cannot expect to get an exceedingly high production on these feeds alone, an economical production is possible. We cannot expect to have an abundance of low priced mill feeds during the next few years and the dairyman that provides these home grown feeds will have the advantage over those who do not. Even home grown feeds will cost enough to make it unprofitable to feed low-producing cows. The U. S. Department of Agriculture has examined thousands of production records and have tabulated them to determine the relation between the production and profit. They find that cows producing 150 lbs. of butterfat per year return a profit over feed cost of $18.00; cows producing 300 lbs. of butterfat return a profit over feed cost of $56.00, and cows producing 450 lbs. of butterfat return a profit over feed cost of $108.00 per year. The wisdom of culling out low producers is very apparent.

Many dairymen realize the need of better cows, but are unable to buy them, and are asking how they are to get them. The answer is: raise them. There is not a herd of dairy cows that cannot be improved by breeding. But it should be done in a systematic way. You cannot expect to grow better cows unless the bull is of better quality than the best cows in your present herd. Even then the records and culling must be kept up. All great herds have been developed in this way and there is no other way. Production records, feeding and breeding will win out and any delay in starting improvement is that much time lost.

In nearly every section dairymen can join cow testing associations, which will give production records. Get your neighbor to join you in the purchase of a good purebred bull if your herd is small and does not justify you in assuming the full expense of one. Organize a bull association. It will put your community on the dairy map.

Federal dairy field men in co-operation with the Extension Division in your state will help you organize a bull association and assist in the selection of the bulls. They will assist in organizing a cow testing association or give you assistance in any of the dairy problems so far as their time will permit.

Making Cottage Cheese On The Farm

Western Dairy Division Department of Agriculture.

Cottage cheese furnishes a convenient and economical means of using skim milk as human food. It can be easily made on a small scale and requires no special equipment.

Because of its ease in making it is desirable to make the cheese often so that it may be eaten fresh, although if it is kept cool it will keep well for several days.

Setting.

Select as much good skim milk as will be needed for a two or three days' supply. Each gallon of skim milk will make about 1½ pounds of cheese. The skim milk should first be placed in a pail or a "shotgun" can, warmed to 75 degrees F. and allowed to stand at that temperature until curdled. A thermometer should always be used; never guess at the temperature. The temperature can be controlled by keeping the pail or can of milk in a tub, sink, or other vessel filled with water of the same temperature.

The time required for curdling will depend upon the freshness of the milk. When a starter or good sour milk is available a better and more uniform cheese can be made and the time for curdling lessened. About a cupful of starter or good sour milk to the gallon of skim milk is sufficient, although more may be used. With that quantity of starter the skim milk will curdle in from 10 to 15 hours, while without starter, fresh milk may not curdle for 24 hours or even longer. The greater the quantity of starter the sooner curdling will take place. During the setting no special attention is necessary. As soon as a firm, smooth curd has been formed it is ready for cutting.

Cutting, Heating, and Stirring.

The curd is cut into 1-inch or 2-inch squares with a long-bladed knife. The temperature of the curdled milk (or coagulum) is then raised to 100 degrees F., and the mass stirred gently from time to time. When that temperature has been maintained for about half an hour the curd is ready to be drained. The degree of heating largely determines the dryness of the cheese; the higher the temperature the drier the cheese will be.

Draining.

After heating, the curd is poured into a cheesecloth sack or into a piece of draining cloth thrown over a pail. If a pail is used it will be necessary to pour out the whey occasionally so that draining will continue. In 15 or 20 minutes the curd will be-

(Continued on page 13)

The Food Value of Cottage Cheese

Western Dairy Division Department of Agriculture.

Cottage cheese should be eaten in generous quantities, not as a relish, but as a food. It is more than a satisfactory substitute pound for pound for lean meat, and pound for dozen for eggs, if the iron that it lacks is provided elsewhere in the meal in the form of salad or pot greens, fresh or dried vegetables, whole cereal breads or breakfast feeds. This year we have a wonderful opportunity to do war service by using cottage cheese to set free both meat and money needed by the country. In any meal in which cottage cheese is used, therefore, it should take the place of the more expensive meat or eggs.

A pound of cottage cheese measures a bit more than one and a half cups. A cup of cottage cheese weighs from 8 to 10 ounces, and should be regarded as equivalent in muscle building value and minerals to an equal weight of lean meat or to seven good sized eggs.

A pound of cottage cheese made from skim milk furnishes a trifle more protein or muscle building material than does a pound of lean round steak or a dozen large eggs. A pound of cottage cheese furnishes practically the full amount of protein needed each day by a full grown man engaged in light physical work in office or store, an amount which is normally made up from animal feeds and cereals together. Furthemore, the protein of cottage cheese is just as efficient a muscle builder as is the protein of meat or eggs; it is a much more efficient muscle builder than the proteins of beans or of wheat and the other cereal grains.

A pound of cottage cheese furnishes about twenty-five times as much calcium (lime) as does a pound of lean beef, and nearly three times as much calcium as a dozen eggs. Calcium is an indispensable bone building and body regulating food stuff. Like meat and eggs, cottage cheese is rich in phosphorus, and element which builds bones, muscles and nerves. Cottage cheese is poor in iron, in which both meat and eggs are rich. Iron may be easily provided for in a meal, however, by including other foods rich in iron, as indicated above.

Building Meals Around Cottage Cheese Dishes.

To really satisfy the appentite a meal must provide:—Sufficient bulk; contrast in flavor; contrast in color; something fibrous or crisp to chew or to crunch between the teeth; some-

(Continued on page 8)

Livestock and Sugar Beets

J. W. James.

The stockmen of the entire country and particularly here in the west will be interested in some of the information which came out in a recent meeting of the Iowa cattle men at the Iowa Agricultural College In his address, Dean Curtiss called attention to some significant things relating to the cattle industry.

"The indications are that this country will soon be the sole dependence of the world for meat supply."

The full significance of the above statement can be better understood when it is remembered that for some time past, the Argentine has been exporting about four times as much beef as all of the other beef producing nations put together.

"This supply is likely to be cut off in the near future," said Dean Curtiss, "and the entire burden of making up the deficiency will be thrown upon this country. This will create a demand for meat and meat products far greater than most people have been able to comprehend." He predicted that within twelve months, the demand for meat will be comparable to the present demand for wheat. The lack of ships to transport the products from Argentina will limit the output from any country where, even the much wanted products are so remote. Every available boat will be required to transport men and materials from Atlantic seaports to Europe.

After the war, the American breeders must continue to help the European countries. On good authority, it is reported that in France, one half of the horses have been destroyed; more than one half of the cattle and wheat production and sugar production in France have been reduced by two-thirds. Grain crops have a one year cycle and therefor, grain crops will depreciate more quickly following the war than will the live stock industry which has a cycle running two or more years and even longer, in building pure bred herds, which will be so much needed.

For the western feeder, there comes the note of encouragement that the highly finished, and, ordinarily high priced beeves, will not be the popular demand. The animals that must be fed on concentrates is too great a luxury for war times. The well finished animal that has been fed on roughage and only a little grain will yield the safest margin of profit and it will be the most practical method of feeding. "At the present time," as one feeder put it, "the best proportionate price is going to the moderately well finished animal."

This is a good time for the western farmer to take a careful inventory and make plans leading into the future. Is the farm now producing its maximum amount of roughage? Have you planned to get the benefit of the increased value of the crop of beet tops by siloing them? There will be produced in Utah, this season, a little less than a half a million tons of beet tops. In years gone by, the method of utilizing the tops that was commonly practiced, yielded returns amounting to about $1.00 per ton. Those who have been siloing the tops have estimated the value, thus treated, to be not less than $8.00 per ton and many of the feeders put it at not less than $12.00 per ton. The increased cost of developing this increased value in the tops has amounted to an average of less than $1.00 per ton. There is a potential increase in wealth in this one by-product of the beet industry in the state of Utah alone, amounting to probably $4,000,000.

The Colorado Experiment Station found that a pound of beet sugar molasses has a value equivalent to three-quarters of a pound of barley. In many districts, the beet growers have been utilizing the pulp, molasses and also beet tops in a modern, economical way. Many have not done so.

There should be fed in Utah, this winter, an increase of 50,000 head of steers, or the equivalent in lambs, above what has been finished in this part of the country. Improved ways of managing the feed that we are now producing will make such gains entirely possible. A feeder who knows the game and who consistently fills his feed yards every autumn recently stated that he was this year making a clear profit of a little better than $40.00 per head, after making due allowance for the value of his feed. We know of others who have done as well. Some feeders, however, figure that an average of $10 profit per head, for a series of years, is a fair average in feeding steers. Even at $10 profit per head, the total returns from the increased feeding will run into enormous total.

Our nation needs meat; it will be more seriously needed, as the war progresses. Our soil needs the fertility. It is bad economics for us to be shipping our half-finished steers out of the country in such vast numbers each autumn and then also ship our alfalfa hay and the molasses, too, down to the middle west feeder. Of course, we can not feed all of our range stock and we must continue to supply the middle-west feeder in reasonable numbers, but good, sound farm practice indicates very clearly that we must do more feeding here in the west and save much of the freight, relieve transportation problems, make our domestic farm crops more profitable and last, but not least, heed the call that is definitely demanding our attention in restoring wasted soil fertility.

Yes, methods of financing the feeders will have to be worked out. In some communities, that part of the subject is already receiving attention.

$1,000 Beet Prizes Awarded

The prize winners in the West Cache Sugar Company were, T. S. Karren, Lewiston, who won the first prize of $500.00, T. H. Reese, Benson, who won second prize of $300.00 and Spackman Bros., Lewiston the third prize of $2.00.00. The prizes were awarded by a committee from the Agricultural College.

SUGAR STILL CRITICAL.

Temporary Relief in Sight.

Dispatches announce that twenty of the thirty six Dutch ships which were taken over on an order from President Wilson, has been placed in service between Atlantic ports and the cane sugar ports in Cuba, Porto Rico, Java and other districts where sugar is to be had.

Not long since, the shipping board released new boats with a total tonnage of 100,000 tons that were completed in the Pacific ship yards, for use between Pacific ports and Hawaii, the Phillipines and the Orient. These boats will be used in moving sugar.

The domestic sugar situation is still critical. Federal Food Administrator, W. W. Armstrong just recently sent a personal letter to a large number of beet growers, in which he said:

"The compelling voice of National necessity for increased sugar production urges me to appeal again to farmers of the beet growing districts for an increased acreage of sugar beets.

"The United States Food Administration has used its good offices to the end that the price of beets to growers should be as high as possible, and with the increased price which the sugar companies have agreed to pay, the beet growers should put forth an extra effort to meet the National emergency.

"In a telegram recently received from Mr. Hoover, he says:

"'I do trust that the growers will support the nation's sugar supply by enlarged planting. Our shortage of shipping and the necessities of the Allies make large demands upon our domestic sugar next year than ever before ,and the maintenance of our own industry is primary not only to the well being of the growers but the Nation as a whole.'

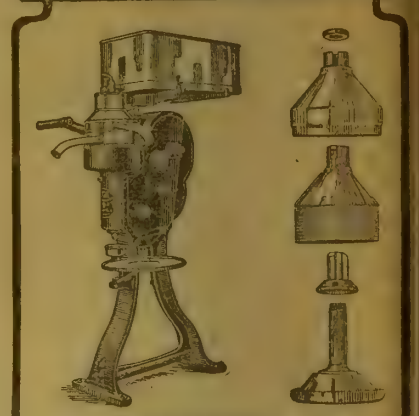
"We have reached the stage in this world crisis where we must make sacrifices. All our energies must go for the necessities which are required for the existence of ourselves and those who are associated with us in the cause. Sugar is an important war food of which the world is short. Men, women and children of war devastated Europe have their eyes turned to America for relief. We cannot refuse them.

"The time for planting is short, and the beet growing area is limited. Our answer must be made without a moment's delay. Don't hesitate but do your part in order that we may demonstrate to the world that we have done our share."

When you answer the advertisements always mention the Utah Farmer.

He read: "To the Poorhouse."

"Yes," he answered, "we're on the right road and we didn't know it."—Exchange.



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Excels in CLOSE SKIMMING
Excels in BIG CAPACITY
Excels in EASY CLEANING
Excels in EASY RUNNING

Try, then buy the great 'U. S.'
And dairy troubles will grow less

LIGHTING PLANTS

"U. S. Light,
Bright—white—
Just Right!"

Daylight all time in home. Will wash, churn, fan, toast, supply electric flat iron, save hundreds of steps, provide water all over the house. Operating cost low. A comfort and a joy.

Greatest thing out for the farm
Ask for full particulars

Vermont Farm Machine Co.
Salt Lake City, Utah. Box 964.
Factory at Bellows Falls, Vt.
Branch Offices—Portland, Oregon, Oakland California; Chicago, Ill.

Deep Plowing

Is a secret not all farmers understand. Those who do plow deep get the biggest crops.

It takes a tractor to do it, but it pays, and pays big.

Yuba 12-20 Ball Tread Tractors are ready for immediate delivery. The price is $2750 cash, f. o. b. Benicia, California. Send the money, get the Yuba, and plow deep.

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Manufacturing Company
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433 California Street
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FIRST bank to be founded between the Missouri River and the Pacific Coast.

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Walker Brothers Bankers

Founded 1859.
Joined Federal Reserve System 1918.
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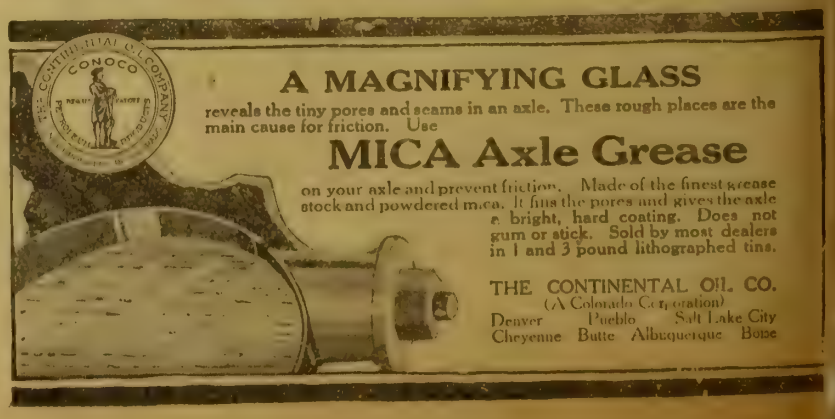

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VOLUME XIV. LEHI, UTAH, SATURDAY, APRIL 20, 1918 No. 38

Caring For The Young Pigs

Prof. L. A. Weaver.

A prominent writer upon hog topics makes the statement that "a hog is half made when past the weaning period without a stunt or kink in its growth." Most men will agree that there is much truth in the above statement. If the pig crop can be saved at farrowing time, properly nourished and grown the first two months of its life, and changed from an animal dependent upon its mother's milk to one able to obtain its nourishment direct from feeding stuffs, much will have been done toward making the swine herd return a miximum profit.

There is, perhaps, no period in the business when proper attention to details will so readily bring about the so-called "good luck" which is attributed to some men in handling young pigs. Most men do the "big things," but the man who is most successful is the one who goes a step farther and takes the time and trouble of seeing that the seemingly little but in the end big things, are properly looked after.

In order to successfully produce a crop of pigs to weaning time, one must begin at the time the sow is bred, or, some would say, even before that time, which is true if the breeding of the pigs is taken into consideration. In other words, the pregnant sow must be properly selected and so fed and managed that she will farrow a good sized, strong, thrifty litter.

For the first four weeks the pigs must be fed through their dam, hence the ration of the sow should be such as to stimulate the milk flow to the highest degree. Such feeding is always the most profitable in dollars and cents and pigs properly developed at this age are half weaned. In addition to supplying the proper feed to the sow an effort should also be made to furnish the little pigs with as much sunshine and exercise as possible—two prime essentials for success.

At this time scours and thumps are to be especially guarded against. Scours in young pigs are usually caused by one or more of the following:

Either by:

1. Changing the feed of the sow.
2. Overfeeding.
3. Dirty pens and troughs.
4. Exposure of either the sow or pigs to cold rain or to cold weather in such a way that they become chilled.

The result on the young pig of the above conditions is to cause indigestion which is shown by the scouring. The thing to watch then especially is the feed. The changing from sweet to sour food or vice versa; the feeding too rich a ration particularly a ration too high in protein; and overfeeding must all be avoided. Pigs should always be in dry, clean quarters and be fed in troughs kept scrupulously clean.

As is usually the case, prevention is better than cure, but if the pigs get to scouring it is recommended that the sow be given a good physic such as epsom salts, and the amount of the ration be reduced somewhat When possible each pig may be given a teaspoonful of castor oil with good results. Some recommend putting a tablespoonful of sulphur in the sow's feed for a couple of days. As a matter of fact, most every breeder has his own particular remedy and, among other things, scalded milk, white of an egg, lime water, charcoal and dried blood are all advocated by different men as good remedies for scours. The important thing is not so much which remedy to use as it is to make an effort, in some way, to minimize the bad effect of scours.

The cause of thumps in small pigs is overfeeding, with lack of sunshine and exercise. The little pig which suckles a sow giving a large flow of milk will become too fat and "thumps" unless he takes exercise. Knowing the cause, the remedy is apparent—cut down feed of sow and force the little pigs to take the needed exercise.

Little pigs will usually begin to eat at three or four weeks of age and one should begin to get ready to wean at this time since the most important factor in weaning pigs successfully is to begin getting ready early. In other words, the pigs should be taught to eat beforehand so that by weaning time they will be getting a

(Continued on page 15)

Dairying In Idaho

Address given before the Idaho State Dairy Association by F. R. Cammack, Field Dairyman.

In order to understand and appreciate the dairy situation in Idaho as it is today and to be of the greatest service in building up the industry from the present foundation, we must first briefly consider its history and the factors which have been instrumental in its formation. The past decade has witnessed the accomplishing of the greater part of its development, the extent of development previous to that being for our present discussion, almost negligible. The factors entering into the increasing interest in dairying during that period have been:

1. That we were able to produce large yields of alfalfa hay a necessary crop to get the new lands in cultivation easily and quickly.

2. This naturally gave a large surplus of a bulky feed, which did not find a ready sale at a satisfactory margin above cost of production and which had to be shipped long distances in its bulky condition to market.

Therefore, farmers were urged to feed the hay to dairy cows and other livestock and several carloads of dairy cows were brought into the state and sold to the farmers. The result was that creameries and cheese factories were built and gradually dairy advancemnt has been made.

Then the ambition of civilization's foe—the Kaiser—caused a change in our tranquil progression. Our economic conditions were disrupted. They are still in a disturbed condition and may be for some time, in an uncertain, ever changing adjustment. The price of feeding stuffs advanced considerably and naturally but unfortunately, the price of dairy products followed more slowly. Now, inasmuch as the dairy cow had been imported to consume the large excess quantities of bulky feeds, the question naturally arose 'Can I afford to feed my higher priced hay to the dairy cows when the price of dairy products have not advanced in like proportion." Another fact which entered into the question was the higher price for beef paid at that time, permitting of the disposal of the surplus and poor cows.

It is difficult to say just how many did sell but I believe that a small percentage of dairy cows actually found their way to the butcher except those which should have been sent there before because they were not paying for their feed and care or those which would in normal times find their way into those channels. However, the price of dairy products fortunately did advance so as to offset this loss, or we do not know what evil effects might have followed. The dairymen themselves, through co-operation were probably the greatest factors in bringing about that change and I am sure it is not necessary for me to go into detail as to the methods of procedure or value of such co-operation.

Now let us consider briefly whether Idaho is well adapted to become a dairy state:

1. In the matter of climate we find that we have a climate ideal for successful dairying.

2. Dairying can be carried on most successfully when we can have large quantities of bulky feeding stuffs, which are relished by the cows. Legume hay and corn silage or substitutes, with a little grain feed has perhaps given the greatest returns. And all parts of Idaho can produce large yields of those feeds which are best adapted to the dairy cows needs.

3. We have a progressive, industrious and energetic class of farmers—a prime essential for good dairying.

In my travels over nearly all parts of the United States I have not found a place that has greater potential possibilities for a great dairy section than we have in Idaho.

Other questions that may be asked are "Why do we need dairying in Idaho" and "What are the advantages of increasing our dairy production." There are many excellent reasons, among which are the following:

1. The sale of dairy products furnishes a steady income throughout the year. The successful dairyman always has money in his pocket and is independent of the need of a bank to furnish long credits—an important factor in good farming development.

2. The sale of dairy products fluctuates very little year by year, as compared to other farm products. This

(Continue on page 7)

The Care of Sitting Hens

Birds Require Special Attention to Insure Maximum Hatch of Thrify Chicks.

The kind of care and attention given a sitting hen during the process of hatching eggs plays an important part on the number and condition of the chicks when hatched. See that the hens are made comfortable on the nest; allow them to come off only once a day to receive feed and water. If there are any that do not desire to come off themselves, they should be taken off. Hens usually return to their nests before there is any danger of the eggs chilling, but if they do not go back in half an hour in ordinary weather, they should be put on the nest. Where a large number of sitters are kept in one room it is advisable to let them on in groups of from 4 to 6 at a time.

Keep Eggs and Nests Clean.

The eggs and nests should be examined and cleaned, removing all broken eggs and washing those that are soiled; in the latter case the soiled nesting material should be removed and clean straw added. Nests containing broken eggs that the hen is allowed to sit on soon become infested with mites and lice, which cause the hens to become uneasy and leave the nest, often causing the loss of valuable settings of eggs. In mite-infested nests, the hen, if fastened in, will often be found standing over rather than sitting on the eggs.

Many eggs that are laid in the late winter and early spring are infertile. For this reason it is advisable to set several hens at the same time. After the eggs have been under the hens from 5 to 7 days, the time depending somewhat on the color and thickness of the shells—white-shelled eggs being easier to test than those having brown shells—they should be tested, the infertile eggs and dead germs removed, and the fertile eggs put back under the hen. In this way it is often possible to put all the eggs that several hens originally started to sit on under fewer hens and reset the others. For example, 30 eggs are set under 3 hens at the same time, 10 under each. At the end of 7 days we find on testing the eggs from all the hens that 10 are infertile, which leaves us 20 eggs to reset, which we do by putting them under 2 hens, and have the remaining hen sit over again after she has sat only 7 days. In this way considerable time can be saved in one's hatching operations.

Protect Sitting Hens from Mites and Lice

In order to secure greatest success and make the hens comfortable when they are sitting, great care should be taken to keep the nests free from mites. To do this effectively is not an easy task. If oil from crude petroleum, which is good for controlling mites, is sprayed freely about the house at that time it may soil the eggs and prevent successful hatching. Infested quarters, therefore, should be treated thoroughly before hens are set, so as to start them in nests which are absolutely clean. Beneath the straw of the nest a layer of lime and sulphur will tend to prevent mite breeding, and the entire nest may be dusted occasionally with pyrethrum. Broken eggs and the straw soiled by them should be removed promptly, as they tend to attract mites.

Medicated nest eggs, said to control poultry lice, are on the market. These consist largely of naphthalene. While this material will destroy lice when applied generally to the fowl, it is injurious to the hen's eggs as well as to the bird. If used in quantity, or if the medicated eggs are allowed to remain for some time beneath a hen, she may die as a result. Sodium fluorid powder, dusted on the fowl, or dissolved in water and used as a dip, is the best remedy for lice.

Production of Comb Honey

William F. Purdue.

The time was when comb honey was stored by bees in large boxes and it had to be broken or cut out for table use. Just as nice honey was produced in that primitive way as in the most approved modern manner. But times have changed, and now it is almost impossible to sell comb honey unless it is put up in neat and attractive pound boxe called sections. They are called pound sections, but as a matter of fact the great bulk of sections do not hold a pound of honey. But sections have become a necessity if the bee keeper wishes to market much honey. Appearances count for much in the market; for home use, however, one need not consider this feature of it unless he wishes to. For the producer's own use empty frames can be utilized, yet even for home use many people use the small sections. The honey looks much nicer on a plate than an irregular chunk.

It is well understood that when sections are used starters are necessary, else it would not be worth while to go to the expense of buying sections. Without starters the bees are quite likely to build comb from one section to another instead of putting each comb in its proper place in the center of the individual sections.

Starters are made of pure beeswax by machinery to imitate the bottom of the cells as made by bees. Commercially it is called foundation. It is made by running very thin sheets of wax through a machine which stamps them as mentioned above. The foundation used by the best beekeepers is so thin that one can almost see through it, and it is about as delicate as is made by the bees.

The size of the starters used in sections differ a good deal. Those who produce comb honey for market generally use starters large enough to nearly fill the sections. This results in a finer looking section of honey, but for home use it is not necessary to use so large a piece. A V-shaped piece two inches long put in the center of the top of the section will guide the bees in starting the comb just as well as a larger piece, and is considerably cheaper. Foundation is rather expensive but the small amount really necessary costs comparatively little when compared with the advantages of its use. Bees never start their combs in the center of a section without a guide or something to compel them to do so. The only reason for using a full-sized sheet of foundation in sections is the finer appearance made by the finished product. Foundation is stamped worker-cell size, while the bees themselves usually make storage comb drone size. If part of the section is built of worker comb and part of drone comb the finished section does not look quite so nice as if made of all workers-cell size. The beekeeper who wishes to produce the finest section honey for exhibition must use nearly full sheets of foundation, for a really fine article is seldom produced without this aid.

There are several ways of fastening the pieces of foundation in the sections. Large honey producers generally use a machine of some kind, either a press or a heated iron which melts the edge of the starter and causes it to adhere to the wood. If one has only a few bees a very simple way to fasten the starters is by having a basin of wax heated slowly over a lamp and with a small brush or quill run enough of the melted wax along the edge of the starter to fasten it to the top. A piece of board on which a block just small enough to slip easily inside of a section used and one-half as thick as the section is wide, nailed to the board, will make a guide to hold the piece of foundation in the center while it is being soldered to the section with the melted wax. Place the section over the block, which is held in the left hand with the top of the section the lowest so that the starter will easily stay where it is. With the right hand draw the brush taken from the melted wax along the angle of the starter and the wood. Enough wax will adhere to hold the piece firmly till the bees complete the job. The wax will harden at once and the section can be put in the super. There are machines that use the melted wax idea automatically, but for a few colonies the simpler method is cheaper and just as efficient.

Will You Invest Your Money With Uncle Sam Now? *or* Let Germany Take it away From You Later?

BE practical. Look squarely at the facts. We will either invest our money with Uncle Sam now, at good interest rates, to help him win this war, or we will give it up later to pay Germany's war cost—and as much more as Germany chooses to collect. Invest in

U. S. GOV'T BONDS

Third Liberty Loan

This space contributed to the Winning of the War by

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HIGHWAY CONSTRUCTION DURING THE WAR

Extracts from New England Roads February, 1918.

Secretary Houston of the department of agriculture, in a communication to the American association of state highway officials, has set forth squarely the policy which he thinks should be followed in highway construction during the war. Secretary Houston says:

"So far as it is practicable to do so, this department will urge the constructed; the construction and completion of those highways which are vitally important because of their bearing upon the war situation or for the movement of commodities; the postponement of all highway construction relatively less essential or not based upon important military or economic needs. The department is preparing to suggest to the state highway departments, the preparation of a schedule of work for the federal aid projects for 1918 in line with this policy."

In carrying out the policy thus announced there has been sent out by the office of public roads, of the department of agriculture, schedule forms on which the states are requested to set forth their proposed federal aid work for the 1918 working season. These schedules call for a description of each road, the character, quantity and rail haul of the materials to be used, the probable cost, the amount of federal funds desired, the specific ing upon the war situation, and what effect a delay of work until 1919 or later would have. With the information thus assembled and classified, an efficient road construction program is assured. While it is impossible to make any definite statement regarding the transportation of road materials, the expectations are that the transportation situation will be improved and that the shipment of such materials for essential projects can be made.

Road construction and maintenance in the United States involve an annual expenditure of some $300,000,000, and there is scarcely a section of the country that is not seriously affected by a marked disturbance in road work.

When a woman winds a towel around her head and calls for a bucket of water, it means the beginning of a big day; but when a man winds a towel around his head and calls for water, it means the end of a big night.—Exchange.

Rhubard Culture

The way we got our start of rubarb —or pieplant—was by sowing the seed. Time and again we had purchased the stools, or plants, only to be disappointed. For some reason we simply could not get a stand; and we were all fond of this early and healthful pie fruit, especially so, after a long winter in which canned stuff filled practically every pie we ate.

After several very unsuccessful attempts we gave up, purchasing the stalks from those more fortunate than ourselves. Then, one day, a seed catalog drifted in with the morning mail and (who can resist the seed catalogs?) we ordered, among other things an ounce of rhubarb seed of the Crmison Giant variety.

In due time the seeds made their appearance, a generous packet, and, according to directions, we made a nice, wide, exceedingly mellow seed bed and drilled in two rows the entire length of the bed.

Perhaps the drought was against the seed. But be that as it may, a few plants came up. These were cared for most tenderly but alas, and alack! by the middle of summer every plant had died, apparently.

As the weather was intensely hot and dry and the planting season over we left the bed undisturbed, counting it as another and signal failure in our endeavor to cultivate rhubarb.

The next spring, however, in going over the ground, planning out the new garden, we came across a healthy looking pieplant. Upon investigation we found approximately, two dozen plants, some scraggy looking little fellows but for the most part well-developed plants, showing roots when lifted, 1½ inches in diameter.

Overjoyed with our find we set about preparing a new place for the plants. This we did upon a gentle northern slope a spot used formerly as a tomato patch, just off the poultry yard and which had been heavily mulched with straw and poultry droppings the previous fall. This was spaded in, raked and put in the best possible condition. Then we dug trenches, probably 12 inches deep, in which we set the plant, spacing them about 2½ feet. As we expected little, if any growth that summer we sowed, broadcast, an ounce of a very rank growing lettuce. This grew luxuriantly, shading the little rhubarb plants and conserving the moisture.

Long before the lettuce was mature the rhubarb plants had grown so tall, and strong that we found it necessary to pull the lettuce away from the immediate vicinity of the plants, in order that the light and air might reach them.

In early summer we began pulling the largest stalks and, despite a second severe drought, had an abundance of fresh stalks the entire season, besides canning enough for a number of pies for winter use. In the fall another heavy mulch was laid over the bed; this was, in early spring, forked in and another crop of lettuce sown and the success of the former year repeated.

We have decided that the best way to secure a stand of rhubarb is to sow the seed; we feel confident that, given a favorable season, the plants will do good the first year. Ours had no chance.

However, we were more than pleased at the outcome and feel that the experiment paid well. We feel that we have learned a few points in rhubarb culture, i. e. that the best location is one partly shaded and somewhat moist; that to do well it must be planted in well-drained, extremely rich soil; that it is a lover of moisture, a rank feeder; and that it will not succeed well on thin or clay soils, especially if subjected to the direct rays of the sun—Edith L. Ragsdale.

The Nation needs the Services of its Women

For years households have been run in much the same way. One after another labor-saving and time-saving improvements have been installed and operated in the office, the factory and on the farm.

But not until now has the stress of necessity been sufficiently acute to impress upon housewives the urgent need of conservation of time, effort, materials and funds in the home.

Today the housewife MUST find time, not only to do most of the housework herself, but to help the nation as well.

Hours must be devoted to the Red Cross and other war relief work—and to food conservation.

Just as Electricity is serving industry, so will it aid the housekeeper. She need no longer labor at her housework, doing with her own hands the many services that Electricity will perform so quickly, so easily and so cheaply.

For almost every household task there is an Electrical shortcut. Electric Washing Machines, Electric Vacuum Cleaners, Electric Irons and Electric Cooking appliances are among the more important labor and time savers.

These and all other electrical appliances may be purchased at our store on convenient monthly payments.

Utah Power & Light Co.

Efficient Public Service

A FARMER'S LOG BOOK

By Edgar L. Vincent

Robert Louis Stevenson was not a farmer, but he was good enough to have made a first rate man on the farm, and he had all the grit that was necessary, too. I was thinking this morning of one thing he said: "I know what pleasure is, for I have done good work." We can all understand that. When we have done the best possible job of plowing, have harrowed our land till it is as mellow as an ash heap, and when we have sowed the best possible seed, thus insuring a fine crop, so far as that can be done by any man, we have a right to lean back and say, "That's the best I could do it," and be happy in the fact. Good work does bring happiness.

It is not always possible to satisfy one's self in this way, however. At least, it seems so to us. We are an impatient folk, the most of us farmers. We want to see things move right along. If we can keep up with the season it makes us feel a lot better than if we are dragging along a week or two behind everybody else. But when it comes to working land that is not fit to work by reason of wet weather or some other unfavorable condition, we cannot make money faster than just to let the fields rest and do something else. Before now I have almost spoiled pieces of land by working them when the soil was full of water. The sun comes out and bakes the earth so hard that it does not get over it for years, and maybe it is never quite as good as it was before. This past spring we have been tempted that same way, but we have simply sat on the blow-off valve and waited for sun and wind to dry the earth and make it fit for the sowing. Let other folks puddle in the mud if they want to; we will work at other jobs rather than spoil our land and invite a poor crop.

There is never a lack of plenty to do, and we have chinked in righting up the fences while waiting for the land to dry off. It sometimes surprises us to see how busy old Jack Frost keeps through the winter season; and the funny part of it is that he is always doing something that will add to the men folks' jobs. Lifting fence posts out by the roots seems to be one of his favorite pastimes. It is no unusual thing to see rods and rods of fence lopping away over to the leeward, if not actually on the ground when the frost goes out in the spring.

But there is this good thing about it: Posts drive easily when the earth is soft, and we have made good progress, getting comfort out of the fact that the time is well spent and that we are doing good work. It never worried me much that farm work is the same thing, right over and over again, year after year. That is just as true of everything else as it is of farming. But the great outdoors has so much about it that is beautiful all along that on the whole the farmer has the advantage of most of folks that must do routine work all their lives. No two springs are just alike. Always something new to see, in earth or tree or living creatures. Something about the perfume of the open fields, too, puts the very elixir of life into a man. Folks downtown know little of this—always the same old suffocating smell; how tired they do get of it! And yet, there ought to come in Old Man Stevenson's beautiful words: "I know what pleasure is, for I have done good work." That is what counts always and everywhere. And we can do good hard, honest work anywhere under the blue sky, if we only will.

Two British soldiers went into restaurant at Saloniki and asked for Turkey with Greece. The waiter said: "I'm sorry, gentlemen, but I can't Servia." Whereupon the Tommies cried: "Fetch the Bosphorus!"

When that gentleman arrived and heard the complaint, the manager said:

"Well, gentlemen, I don't want to Russia, but you cannot Roumania."

And so the poor Tommies had to go away Hungary.—Scotch American.

THE AMATEUR FARMER

"I hear you are thinking of buying a farm."

"That's my intention," said the city man with a complacent air.

"Well, don't forget the importance of silos."

"Trust me for that, sir. By the way —er—do these things consume much gasoline?"—Birmingham Age-Herald.

Two men were hotly discussing the merits of a book. Finally one of them, himself and author, said to the other: "No, John, you can't appreciate it. You never wrote a book yourself."

"No," retorted John, "and I never laid an egg, but I'm a better judge of an omelet than any hen."—Philadelphia Star.

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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

Now is the time to plan for your fall hogs. The need of hogs and fats will be just as urgent next fall as it is right now.

If for any reason you have not been able to order extras or repair parts for your machinery do it at once. Do not wait until the time you are ready to need them but go over your machinery now and be prepared to use your implements and tools when they are needed.

SELL CHICKENS GRADUALLY

Don't try and sell your chickens all at once now that the government has again given permission to market hens. Poultry stock should be sold gradually. Farmers will have better markets if they avoid glutting them. Green food is becoming more plentiful and you will be able to feed your hen at a lower cost and the demand for eggs will continue. Increase the number of chickens on the farm, keep the laying hens and produce as many chicks as possible.

WANT TO HEAR FROM OUR READERS

We are anxious to serve our readers in the very best way. In order that we can make the Utah Farmer helpful we want you to write us a letter, offering helpful suggestions you have. Tell us of your needs and about your farms. Our real aim is to be of service to all our readers. The more we know about your conditions, the better we will be able to serve you. We want to hear from our readers. Tell us of your success and of your failures in order to help us. Our readers can help very much to make the Utah Farmer a better paper. We would like to hear from you.

SAVE EVERY BAG

Producers of wheat and other products that use jute bags for shipping it, will do well to look ahead and secure the needed supply. We are asked to save every bag. Only a few years ago a jute bag could be bought for a few cents, now they cost about 25 cents or more. The sugar manufacturers have felt this increase. They bought at one time the bags for 9 cents, then they jumped to 16 cents and now they cost about 30 cents.

There is an unusual demand for jute bags. One order of 150 million bags was given by England. The war has brought many new ways of using the jute bags. The cost and difficulty of bringing jute from India has greatly increased. Every bag must do a maximum duty. The reuse of bags is advised. Save every bag in order to help the present situation.

IMPORTANCE OF A SEED BED

A good seed bed is the foundation of the coming crop. If you do not get a good "stand" you can not have a good crop. Back of the crop is the seed bed—the start. You put the seed in the seed bed, if it is properly prepared the seeds germinate and grow.

Good plowing, to be followed with harrows and land packers, putting the soil in condition so that every seed will grow and produce a maximum crop, is the way to prepare a seed bed.

This year we should aim to make every acre produce just a little more than usual. A little extra time spent preparing the seed bed will be time well spent.

COTTAGE CHEESE

The Western Dairy Division of the Department of Agriculture have been working for some time to help increase the sale and manufacture of Cottage Cheese. Now an aggressive campaign will be carried out in the western states for its increased use.

Experts will help the manufacturers to see that only a good product is put on the market and demonstrators will help to popularize the use of Cottage Cheese by suggestions and demonstrating a great number of ways that it can be used as a food. In this issue we give a number of recipes telling how it can be used, we also give directions how Cottage Chees can be made on the farm.

PRODUCE MORE POULTRY

Can you think of a better substitute for pork and meat than poutlry products. Just as long as there is such a demand for food products there is going to be a good market for poultry. The high price paid for poultry and the high cost of feed, depleted many flocks during the fall months. Now it looks as if some one made a mistake by selling all their stock. Unless special effort is put forth our supply of poultry is going to be smaller and the demand will be increaesd. The answer to the problem is to produce more poultry. Set a hen, start an incubator, buy some baby chicks anything to see that your number of poultry is increaesd. With the present demand the prices are bound to be good and you can be assured of a profit if you will raise more poultry.

PUTTING THE THIRD LOAN OVER.

"Let us save and lend our money for this war in the same spirit with which our boys go to risk their lives. Let us subscribe this third Liberty Loan so fully and quickly that it will be the nation's clarion cry of confidence, shouting to them across the seas that we are with them and that our strength is theirs in every step they take, every blow they strike."

This is the spirit of the people today and the farmers of the United States are doing their part. Oregon and Iowa both farming states have gone over the top. We will do our part as we have done in the past. Today, right now, however, is the time to act.

FURLOUGHS FOR URGENT FARM HELP.

A government order has been issued that will permit of a furlough for enlisted men to return home and engage in agricultural work during the seeding and harvesting seasons. Some relative must make application on blanks that will be furnished by the local draft boards and they will forward same to camp where soldier will be given an opportunity to sign it. Then the commanding officer will furnish a certificate granting furlough or will give reasons why it is not granted.

It will take some time for the application to be considered by the different officials required by law so if you are going to need help for spring planting you should act at once. Apply to your local draft board for necessary blanks.

SAVE THE YOUNG PIGS

Many young pigs have been saved by a little careful attention given them at farrowing time. If the weather is cold some means of keeping the young pigs warm should be provided. Provide dry, sanitary quarters for them. Direct sunshine in the bed is one of the greatest benefits that can be given. We have published a number of articles offering suggestions how to help at this important time. We can increase the number of hogs if a little more care is given the sow and young pigs at farrowing time. It means work, possibly some loss of sleep but it will pay and will pay well to do it.

ARE WE DOING OUR BEST?

"As long as men go to the front at the risk of being shot it is clearly my duty to risk all I possess. It is my duty to take a full risk in planting as many extra acres as my means will permit. This I am doing in 1918."

This is how one farmer feels about helping to increase the food supply.

Every acre of land that will produce should be put to work this year. As this farmer says, it is our duty to do it. What an opportunity the farmers have this year to serve their country and help humanity.

Prices are assured for wheat, sugar beets and livestock that will show a profit but this should not be the consideration. Our duty is to farm to the limit, to do our best.

WAR'S DEMAND ON DAIRYING

There is a great demand for food and one of the best ways to produce it is by the dairy cow. She will produce more food with less feed than any other of our domestic animals. For years we have been importing dairy products from many foreign countries, now war's demand has made us exporters of large quantities.

This demand for dairy product should mean and increased number of cows. The cost of feed and labor will eliminate the poor producing cow and bring a greater demand for the better kind.

We must reduce the cost of feed by building silos and making better use of our alfalfa and other feeds. Raise better calves. There is a big demand for dairy products. We must answer the call with an increased supply.

GOOD SEED—GOOD CROPS

There are so many reasons why we should plant only the best seed obtainable.

Good crops are absolutely dependent on good seed. One may have the best soil in the world, he may prepare his seedbed with the utmost care, the weather conditions may all be in his favor, yet if he plants seed lacking in vitality he will not obtain yields that will pay for his time, let alone return a profit.

Careful selection should be made. Then it should be recleaned. We want to produce big crops of all kind and one way to help is to plant only good seed. It costs very little more to produce a poor crop than a large one, for your own profit and the help of the nation plant only the best seed.

EVER TRACTOR MUST DO ITS DUTY

Every owner of a tractor should let his neighbors know when he will finish his own work and be able to help them. A listing of all tractors should be made through farm bureaus or local labor committees and in this way keep them busy.

One man reports having waited for 6 weeks to get some plowing done with teams at the same time several tractors within a distance of a few miles could have done the work for him. If we want to get maximum results there must be a closer co-operation.

The tractor should be kept busy to pay the owner a profit on his investment. Work could be done for his neighbors at a price which would be fair to both.

Tractors can play an important part in the work of increased production and every one of them should be kept busy.

Utah's Experimenters In Agriculture

Byron Alder.

Byron Alder is Professor of Poultry Husbandry and Station Poultryman. The growing poultry industry of Utah has in Professor Alder a man of experience. He was raised on a farm, has always been interested in poultry work, and has had good training.

Young Byron did his grade school work at Manti, where he was born in November 1883. He attended the B. Y. U. for three years from which he was graduated as a special student in manual training in 1906. The next two winters he taught carpentry and mechanical drawing at the Beaver Branch of the B. Y. U. in Beaver. He entered the Utah Agricultural college in 1908, from which he was graduated in 1912 as class valedictorian. During his college course he won a scholarship "A", six of which are awarded each year. He was class president in his Junior year and president of the famous "Ag" Club in his senior year. During his last two years he assisted Professor Turpin in poultry work.

Upon graduation he began teaching in Manti High School, but when Professor Turpin took a position at Iowa State College, Mr. Alder was appointed station poultry man and assistant professor of Poultry at the Agricultural College.

Professor Alder took up the work on poultry breeding in connection with Dr. E. D. Ball, then Director of the Station. This work is particularly important for several reasons. In the first case, it did not agree with some common opinions. This of course did not make the Utah work less valuable, but it did make it necessary to check up the data so closely as to make sure that no errors had crept in. For example, it had been commonly thought that hens did not lay well after the first year. Dr. Ball and Mr. Alder showed that it was profitable to keep hens at least three years. One famous hen, Queen Utahna, was kept eight years. Accurate data showed her to have laid more eggs than any other hen alive, on which similar accurate records was kept. It was also shown that the winter record could be taken as an index for the whole year.

The Utah work also showed that the principles of heredity in other animals could be applied to chickens. There had been a great deal of work on poultry breeding, but it was not really conclusive because the data was not accurate. Dr. Ball and Mr. Alder published a mass of incontrovertible data.

There was just one known method of getting accurate individual egg records. That method was by means of the trap nest which was laborious and expensive, besides holding the hens prisoner for two or three hours every time an egg was laid. This was naturally undesirable treatment for laying hens. Professor Alder perfected a quick, inexpensive method of getting the same results without imprisoning the hens. Although just published, this work (Utah Station bulletin 162) is already attracting attention. Equally interesting is the lighting experiment in which electric light was turned on in some colony houses from five o'clock in the morning till daylight and from dusk till eight at night. This experiment confirms the "hunch" that one reason for low egg production in winter is darkness. The hens in the lighted coops laid twice as many eggs during January and February when eggs are high in price as those in the dark coops or as did these same hens when left in darkness.

Mr. Alder has published three bulletins as joint author with Dr. Ball and one bulletin alone. He is also author of two station circulars and one extension circular. Station Circular 14 on "Housing Farm Poultry" attracted attention in the state of Washington where an extra 5000 was published. Professor Alder has judged poultry shows and has done Extension work over much of the State. He has also written considerable in the Utah Farmer and in poultry journals. Right now he is saving Utah many times his salary by showing how to make hens lay when fed on war rations.

Professor Alder is a member of the American Poultry Association, of the American Association of Instructors and Investigators in Poultry, of the Utah Academy of Sciences, and of several local poultry associations. He is also president of the local chapter of Gamma Sigma Delta, the honorary agricultural Fraternity of America.

Incidently, he is Utah's best authority on poultry.

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DAIRYING IN IDAHO

(Continued from page 3)

tends to stablize farming and discourages gambling in crop raising.

3. Through returns of manure to the land the fertility and physical condition of the soil may be maintained at a higher level and crops increased. The dairy farmers do not rob the soil but build for the future development more than do most other farming systems.

4. In the matter of labor—so vital today—we find that it is utilized more uniformly throughout the year than in nearly any other farm business. The harvest season is not a few days but during the entire year except the busy harvest season. There are no slackers in dairy work.

5. Unsalable roughage may often be transformed into dairy products from which cash can be readily realized. Land unsuited to cultivation may be utilized, which is important in some sections of the State.

6. Dairy products are concentrates, easily shipped and thus the expense of shipping bulky feeds is reduced—especially important during our present congestion of transportation facilities.

7. By-products—skim milk and whey (when butter and cheese are made)—permits use of these for calf and pig feeding if impossible to save as human food directly in the form of cottage cheese and other food products.

Therefore we can see that we are well qualified to do successful dairy work, that we need the dairy cow in order to become the most successful in our farming business, and that we will be well repaid for our dairy work in present and future returns and development. The United States Government is very much interested in the development of dairying in Idaho, because of the wonderful possibilities for dairying, due to the reasons given above, and the growing inability of the centers of population to take care of their needs of dairy products.

I have found in the state many examples of successful dairying. One in particular is that of a farmer buying, on borrowed capital, sixteen good cows, costing $1,600 and borrowing money to buy part of the feed needed. After three years he had paid back all the money and interest from the milk and cream receipts and has all the cows and their offspring free from debt. We always find that the dairyman is as high a type of farmer as we have, because it takes more ability, thought and careful management to be successful in dairying than nearly any other business.

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WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, April 16th—Cattle—Receipts, 3,431; market, steady to strong; choice steers, $12.00; good, $8.00@$9.00; feeders, $7.00@9.00;; choice cows and heifers, $9.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, 9.00@10.00; choice bulls, $7.00@7.75.

Hogs—Receipts, 5,117; market, slightly higher; tops, $17.00; bulk of sales, $17.00.

Sheep—Receipts, 2,463; market, steady; lambs, $16.50; ewes, $9.00@10.50.

North Salt Lake, April 18th.—Cattle—Receipts, 582. Market, steady. Choice steers, $11.60@12.50; good steers, $10.00@11.00; feeder steers, $7.75@8.75; choice cows and heavy heifers, $8.75@9.75; fair to good cows and heifers, $7.50@8.50; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $7.50@8.25; bologna bulls, $6.00@7.00; veal calves, $8.00@10.00.

Sheep—Receipts, 670; Market, steady. Good ,choice, grain-fed lambs, $16.00@17.50; choice yearling wethers, $13.00@15.00; fat wethers, $12.50@14.00; fat ewes, $10.00@12.00.

Hogs—Receipts, 84. Market, steady. Choice, smooth, fat hogs, 175 to 250 pounds, $17.00; bulk of sales, $16.00@17.00.

Omaha, April 18th.—Hogs—Receipts, 20,500 market 25c to 40c lower; heavy, $16.70@17.10; mixed, $16.75@17.00; light, $16.75@17.30; pigs, $10.00@15.00; bulk of sales, $16.75@17.00.

Cattle—Receipts, 8,900; market steady; native steers, $12.50@17.00; cows and heifers, $9.00@14.00; western steers, $9.50@13.50; Texas steers, $9.00@11.50; cows and heifers, $8.50@11.00; canners, $7.50@8.50; stockers and feeders, $8.00@13.00; calves, $9.00@13.00; bulls, stags, etc., $8.50@12.50.

Sheep—Receipts, 11,500; market steady to stronger; yearlings, $16.50@18.50; wethers, $14.50@16.50; ewes, $14.25@16.50; lambs, $16.50@21.25.

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When you answer the advertisements always mention the Utah Farmer.

OUR SERVICE

And What It Means to You

WE BASE OUR BUSINESS ON DEPENDABILITY

KEEPING OUR BUSINESS SO THAT YOU MAY ALWAYS FULLY RELY UPON IT IS OUR CHIEF AIM

Men who sold "gold bricks" relied on an article that looked good at a price that seemed small in comparison. They made big profits quickly and easily. But they had to keep moving from one locality to another. New orders meant everything to them—repeat orders—nothing.

We couldn't afford to make "gold brick" deals even if we wanted to do so. For we expect to continue doing business in this community. Repeat orders mean everything to us. We have to look farther than the mere sale of an implement to you. We have to look to the performance of that implement in your fields—to your satisfaction in regard to your transaction with us.

That is why we make dependability the basis of our business.

And we will readily leave it to your judgment to say whether a deal with known dependability behind it is better than a deal that doesn't look mainly to repeat orders from you.

Naturally, we handle implements that earn repeat orders—the kind that make it easiest for us to maintain our reputation for dependability.

Come in and see us about your implement needs.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

Dependable Seeds

What is the product of your garden worth? That depends on several things, the soil, the season, care during growth, but most of all on the seeds used.

The cost of the seed is very small compared with the value of the crop you raise. That's why Quality is more important than price when you buy seeds.

Our catalogue tells all about Vogeler's Purity Seeds, the best that money can buy. Your copy is ready, better send for it today.

Vogeler Seed Co.

SALT LAKE CITY, UTAH.

FOOD VALUE OF COTTAGE CHEESE

(Continued from page 1)

thing sweet; and a little fat. The simplest meal of well cooked food that meets these requirements will satisfy the appetite.

Cottage cheese is mild in flavor, therefore combine with it one or two highly flavored foods. It is colorless, hence use with it one or more foods that provides a pleasing color contrast. It is soft, therefore include somewhere in the meal at least two of the following crisp or succulent foods; salad, greens, crisp or succulent vegetables or fruits; nuts, toast, zwieback, crisp crusty yeast bread, or crusty quick breads, crisp crackers, wafers, or cookies. Fruits, vegetables and beverages all add bulk to the meal. The sweet that satisfies the appetite may be supplied in the form either of a sweetened beverage served hot or cold, or in the form of fruits, jelly or marmalades, candy or a made dessert.

Each of the recipes that follow is supplemented by a suggestive menu intended to illustrate the kind of dishes which should be combined with it to satisfy the needs both of the body and of the appetite.

Plain Cottage Cheese.

Cottage cheese may be served plain, as the main dish of a luncheon in place of cold meat.

Variations: Mix broken nut meats, chopped pimiento, finely cut or green peppers, diced cucumbers or other crisp vegetables with the cheese. Horseradish, onion juice and parsley make a good combination.

Season rather dry cheese well, pack into a buttered earthern or enamel dish, chill it ,turn it out on a platter, and serve it in slices like cold veal loaf.

Mix with the cheese a small quantity of leftover ham or corned beef, finely ground, and season the whole with made custard. Serve this in slices, or turn the mold out on a border of lettuce leaves.

Suggested menu: Molded cottage cheese: baked potatoes, lettuce, sliced tomatoes or cucumbers, crisp corn pone or oatmeal muffins, tea, coffee or whey lemonade; fruit and dessert.

Cottage Cheese With Cream and Sugar

Use in Place of: Meat or eggs for breakfast or supper.

Variations: Add berries, peaches or other fresh fruits; canned fruits, raisins, cut dates or other dried fruits; brown sugar; honey, jam or marmalade chopped nuts.

Suggested menu for a summer breakfast: Cottage cheese with cream and fruit (cornflakes if desired); toasted Victory bread; coffee. For a heartier meal, include baked or fried potatoes, or a cereal.

Cottage Cheese Roll (Uncooked).

Various loaves or rolls can be made by combining cottage cheese with cold cooked rice or with fresh bread crumbs, and seasoning with horseradish, chives, onion juice, parsley, chopped celery, sage, pimientos, green peppers, grated dairy cheese, or other desired seasoning. Chopped nuts, finely cut celery or cubed cucumbers are pleasing additions. Leftovers of boiled ham, fried bacon, cold meats, salmon, tuna fish, or other fish, may be used to add variety. If desired the loaf may be rolled, just before serving, in sifted bread crumbs that have been slightly browed in the oven.

These rolls are especially attractive if served on a bed of lettuce leaves, shredded with lettuce, or grape leaves and ganished with fresh or cooked vegetables that have been tossed in French dressing. Salad dressing is frequently served with these rolls.

Sweetened rolls may be made for a hearty dessert. These may contain fresh, dried or candied fruits and nuts, or they may be served with canned or preserved fruits as a garnish. Preserved ginger is particularly delicious served with such a cheese roll. This roll might be sprinkled with almond or macaroon dust, or with dry crumbs made from stale cake.

Suggested hot weather supper: Cottage cheese roll made with rice and leftover salmon, on a bed of lettuce leaves, with mayonnoise dressing; sliced tomatoes, oatmeal bread with nuts; whey lemonade, crisp fifty-fifty raisin cookies.

Scrambled Eggs With Cottage Cheese.

Proportions: For each egg, use 1 tablespoon milk , 1-3 teaspoon salt plenty of pepper, 1 rounding tablespoon cottage cheese, pinch of baking soda, fat to grease pan.

Method: Mix eggs, seasonings and 1 tablespoon of milk for each egg. Scramble eggs as usual in greased pan till entirely cooked. Neutralize acid in cheese with soda , and stir lightly into egg.

Variations: Parsley and pimiento or chives, added to egg.

Suggested supper or luncheon menu: Scrambled eggs with cottage cheese; baked potatoes; dandelion or lettuce salad, or sliced tomatoes; barley muffins; tea or coffee; fruit sauce.

Creamy Eggs With Cottage Cheese.

1 tablespoon butter, ⅛ teaspoon pepper, ½ teaspoon salt, paprika, parsley or pimiento, 1 cup milk, 1 tablespoon flour, 4 eggs, 1 cup cottage cheese, ¼ teaspoon soda.

Make thick sauce with the milk, flour, butter and seasonings. Cook 5 minutes and pour gradually on the cheese which has been neutralized with soda dissolved in a little of the milk. When the cheese and sauce are well balanced, return them to the top of the double boiler and reheat over hot water. Beat the eggs slightly, pour them into the warm sauce and mix well. As the mixture sets in a soft custard on the bottom and sides of the boiler, scrape it up carefully, forming large soft curds. The mixture is cooked when it is of a creamy consistency throughout. This quantity will serve eight or more people.

Cottage Cheese Omelet.

2 eggs, ¼ teaspoon salt, 3 rounded tablespoons cottage cheese, 1 tablespoon chopped pimientos, 2 tablespoons milk, 1-3 teaspoon soda.

Beat the yolks and whites of the eggs separately. Add to the yolks the salt, the milk and the cheese with which has been blended the piminento. Finally fold in the stiffly beaten whites; pour into a hot frying pan in which has been melted about ½ tablespoon fat. Cook the omelet slowly until the egg has set, place in the oven for a few moments to finish cooking, then fold over in the center. Garnish with parsley. Other seasonings may be used, such as chopped parsley, green pepper or minced ham.

Escalloped Eggs With Cottage Cheese

6 hardcooked eggs, ½ cup cottage cheese, 1 cup white sauce, 1 sweet red pepper cut in strips.

Cut the eggs into quarters and place about ¼ of the amount in a buttered baking dish. Cover this layer with sauce into which the cottage cheese has been folded, and sprinkle over it a layer of sliced green or red pepper, dot with butter and brown in a hot oven.

Egg in Nest.

Carefully separate the white from the yolk of an egg. Beat the white until stiff, add 2 tablespoons cottage cheese which has been neutralized with ⅛ teaspoon of soda and pile lightly on a nicely trimmed slice of toast. With a spoon make a depression in the top of the white and slip the egg yolk into it. Place on a baking dish in a moderate oven and when the white has become a golden brown remove and serve. It may be seasoned to taste.

Eggs Goldenrod.

1 cup milk, 2 tablespoons butter, ¼ teaspoon white pepper, 1½ tablespoons flour, 6 slices toast, 4 hard cooked eggs, 1 teaspoon chopped parsley, ½ teaspoon salt, 6 tablespoons cottage cheese, ¼ teaspoon soda.

Melt the butter, add the dry ingredients and stir until smooth. Add the heated milk slowly, stirring constantly, and allow to come to the boiling point. Separate the yolks from the whites of the hard cooked egg. Chop the whites finely and add them with the neutralized cheese to the white sauce. Cut the slices of toast in half and after arranging on the platter, heat the sauce and pour over the toast. Put the yolks through a potato dicer or press them while hot through a strainer, sprinkling them over the sauce. Garnish with parsley.

Cottage Cheese Sausage.

1 cup cottage cheese, 1 cup dry bread crumbs, or ½ cup cold cooked rice, ½ cup bread crumbs, ¼ cup peanut butter or 2 tablespoons savory fat, ¼ cup coarsely chopped peanut meats, ½ teaspoon powdered sage, ½ teaspoon thyme, 1 tablespoon milk, 1 teaspoon salt, ¼ teaspoon pepper, 1-3 teaspoon soda, 1 tablespoon finely chopped onion.

The bread crumbs may be made from leftover corn, barley and other quick breads. Cook the onion in the fat until tender but not brown. Dissolve the soda in the milk and work into the cheese. Mix all other dry ingredients thoroughly with bread crumbs. Blend peanut butter and onion with the cheese, and mix them with the bread crumbs. Form into flat cakes, dust with bread crumbs or

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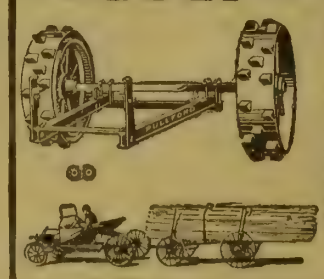

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It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device; that made a most successful demonstration at Fremont, Nebraska.

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cornmeal, and fry a delicate brown in a lttle fat in a hot frying pan.

Variations: To utilize leftover cereals, use one cup of cooked rice, oatmeal or cornmeal mush with ¾ cup of bread crumbs, dry corn meal or finely ground oatmeal may be used for stiffening the above mixture, but in such case it is better to form into a loaf and bake it in the oven about 25 minutes.

Other seasonings may be used in place of the above.

The amount of liquid will vary in every case. The mixture could be very stiff since the cheese tends to soften it during the cooking.

Suggested breakfast menu: Orange or grapefruit; cottage cheese susage; corn bread or toasted Victory bread; coffee. For a heartier meal include creamed potatoes.

Note:—Where bread crumbs are called for, they may be made from leftover quick breads or rice may be substituted by somewhat reducing the amount of liquid used.

Cottage Cheese Loaf—I.

1 cup cooked rice (dry and flaky), 1 cup cottage cheese, ½ cup ground peanuts 1 tablespoon chopped onion, 1 tablespoon savory fat or drippings, ¼ teaspoon soda, 1 cup strained tomato, 1 cup bread crumbs (or more).

Mix well and form into a roll. Brush over with melted butter and bake in a moderate oven 25 minutes or until hot. Serve with a medium white sauce to which may be added 2 tablespoons minced pimiento.

Cottage Cheese Loaf.—II.

2 cups cottage cheese, 1 cup leftover cereal, 1 cup bread crumbs (dried in oven), 4 tablespoons peanut butter, liquid, if necessary, to mix, ½ cup chopped peanuts, 1 teaspoon onion juice, pinch of sage, salt, cayenne and paprika.

Form into a loaf and bake in a hot oven 20 to 25 minutes or until brown. Or bake in a greased bread tin and turn out on a platter.

Pimiento and Cottage Cheese Roast.

2 cups cooked cereal (rice, etc.), 1 cup cottage cheese, 1 cup dry bread crumbs, 3 canned pimientos (chopped fine), 1½ teaspoons salt, ¼ teaspoon soda, ¼ teaspoon pepper, liquid, if necessary.

Blend all together very thoroughly making the mixture very stiff. Form into a roll and bake about 25 minutes, basting from time to time with savory fat or meat drippings if necessary.

Creamed Potatoes With Cottage Cheese.

Reheat cold diced or sliced potatoes in medium white sauce with cottage cheese. For the rule see preceding pages. The best seasoning for this sauce is a slice of onion added to the milk while heating and chopped parsley and pimientos. ½ cup of potatoes and 1-3 cup of the sauce make a generous serving.

Boiled new potatoes may be served whole with this sauce.

Cheese and Potato Croquettes.

16 croquettes.

1 cup cottage cheese, 2 tablespoons chopped parsley, 1 rounding teaspoon chopped green pepper, ½ teaspoon salt, dash of cayenne, dash of paprika, ¼ teaspoon soda.

Mix these ingredients very thoroughly and form into small rolls. Then imbed these rolls in the mashed potatoes which have been seasoned with salt and pepper, forming a larger roll of each. Roll the finished croquette in egg and bread crumbs and fry in a pan containing about 1 tablespoonful of hot fat, or brush with melted fat and brown in a hot oven.

Hashed Brown Potatoes With Cottage Cheese.

Chop cold boiled potatoes fine and season them well with salt pepper and onion juice. Mix with them enough milk to help them brown when turned upon a hot frying pan lightly greased with savory fat and cook the potatoes slowly without stirring till they are well browned next to the pan.

Meanwhile, soften a generous amount of cottage cheese with cream or milk till it will spread easily. Mix with it any desired seasonings such as chopped parsley or pimiento a little leftover ham or bacon, chili sauce or picalilli, and spread it over the potato. Let the mixture stand long enough to warm up the cheese and soften it; then fold over the potato like an omelet, turn it upon a hot platter, and serve at once.

Many persons enjoy the slight acid flavor of the cheese with this dish. If desired, however, the acid of the cheese may be neutralized by adding ¼ teaspoon or more of soda for each cup of cheese.

MEATLESS SOUPS

By Maude Lawrence Westcott.

Cream of Celery Soup.—Cut two large bunches of celery into one-inch pieces and boil in a quart of salted water to which a slice of onion and a few sprigs of parsley have been added. When tender drain and mash through a colander, rejecting all stringy parts. Put one quart of milk in a saucepan with the celery and let it cook gently for ten minutes. Thicken with two tablespoons of flour and two tablespoons of butter that have been well blended and allow to cook for fifteen minutes more. Season with pepper and more salt if necessary and serve hot.

Cheese Soup.—Scald one quart of milk with a blade of mace, a pepper pod and a tablespoonful of onion. Melt two tablespoons of butter and blend with two tablespoons of flour. Strain milk and seasoning and add gradually to flour mixture stirring all the time. Return to double boiler to cook. When creamy add one-half cup grated cheese, salt and pepper, stirring until cheese is melted Then pour over two well-beaten egg whites, stirring all the time. Whip until frothy and serve.

Cream of Asparagus Soup.—Canned asparagus may be used for this. Reserve tip ends of asparagus. Cut stalks into small pieces, add three cups of water, boil fifteen minutes, strain into a bowl and rub stalks through a sieve. Now add three cups milk, salt, pepper and onion salt or juice. Melt two tablespoons of butter, add four tablespoons flour and add the soup. Cook slowly stirring constantly until smooth and creamy, add asparagus tips and serve at once. Do not boil hard or it may separate.

Rice Soup.—One cup of rice, six cups of cold water, one small onion, one green pepper, one teaspoon of chopped parsley, two cups of cream, four tablespoons of butter, two tablespoons of flour, one teaspoon of Worchestershire sauce and salt nutmeg and cayenne to taste. Cook the rice, onion and pepper in cold water until the rice is tender; press through a sieve. Melt the butter, add the flour, cream and seasonings and boil for five minutes, then combine the mixtures.

CONCENTRATION OF ENERGY

To concentrate energy is the tendency of the present day in all lines of business. We see it demonstrated in the building of ships locomotives, in the manufacture of farm machinery. It is done for the one purpose, that of getting the most work done at the least cost and greater profit.

When a railroad can haul 80 cars of freight with one train crew, due to the power of the engine instead of making up too light trains, the pay of one train crew has been saved. That means profit. When a farmer put a tractor to use on his farm to supplant a half dozen work horses and thereby saves man and horse labor and does the work more efficiently and at a less cost, he is accomplishing something worth while through the concentration of energy.

Let us view this thing from another angle. Many there are who fail to see that energy can be concentrated to the profit of the farm animals. What is the use of keeping two cows when one can easily produce just as much milk and butter fat as the two put together? What is the use of giving labor feed and stable room to that extra cow? You don't think for a moment of getting two milking machines if one can do the same work.

How about the horses? There are a few big draft horses and countless numbers of small horses kept on the farms. One big drafter has as much muscle as two little horses and will not only do better work, and a good draft mare will raise a better and more valuable colt.

There are breeds of hogs that will make 250 or 300 pounds of growth in eight months from birth. Why? because they are built on the concentrated plan and soon put money in their owner's pocket. Yet many you will find who prefer to feed the nondescript hog that eats lots and fattens slowly.

The same is true of sheep chickens and beef cattle. There are types suited to special purposes. These types produce results at less cost than the scrub or the types unsuited to the particular end sought. Just as the manure spreader is more efficient in every way than the hand method of spreading, so is the true dairy type more economical than the beef type for milk production.

Did you ever stop to think that there is enough power in the wind that blows over every farm to run all the machinery, but it is not concentrated energy? It is not postive nor can it all be made available. There is sufficient nutriment in the feeds you use to produce good profits in milk, wool, beef, pork or eggs, if fed to animals of the right kind capable of making good use of the feed given them.

Concentration of energy with concentration of thought on everyday duties are the things that will count in bringing maximum results this year on our American farms—Western Farmer.

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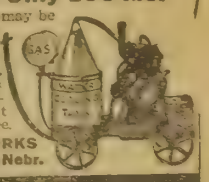

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Seed Bed Preparation

Soils either fertilized or unfertilized never produce those large crops which are now a military necessity unless the seed bed is properly prepared. Proper seed bed preparation means the right kind of distribution of the fertilizer, the right kind of plowing, the right kind of harrowing or discing, and the right kind of pulverizing and packing. All these must be done in the right way in order that the seed may germinate and the plant come up quickly and then be able to obtain the food and water which are in the soil. The food in lumps and clods is largely unusable and represents a waste of land.

Plants must have their food in the liquid form, and most of the food is taken from the plowed layer. This means that water must continually rise from the subsoil into the plowed layer to dissolve more food and supply the plant. While water may be obtained from the subsoil by deeper roots, yet if the plowed layer becomes too dry the plant's main food supply is cut off. When the seed bed is properly prepared, water rises to the plowed layer by capillarity like oil in a lamp wick, from depths as great as four or five feet. When bunches of manure or straw are plowed under or the plowed layer is not packed sufficiently, there result numerous breaks in the capillary ladder which prevent the rise of the water from the subsoil to the plowed layer where it is needed. Not only do plants need water to dissolve plant food but they also require enormous quantities for other purposes. In the production of a bushel of corn 150 barrels of water pass up through the plants that produce this corn. In the case of oats 175 barrels are required per bushel. It is only after proper seed bed preparation that the soil is capable of storing and then delivering these large quantities of water needed by all plants.

The Primary Essentials.

The essentials of a good seed bed are a thoroughly pulverized and compacted plowed layer provided with a fine loose surface or mulch about two inches deep. Many farmers make the grave mistake in thinking that the whole plowed layer should be loose and mellow. Only the surface mulch should be in this condition in order to prevent evaporation, baking, and cracking. The soil below the mulch where seed is planted should be a firm, uniform mass in order that the seed may be in close contact with the soil and thus get the water needed for germination. The plant roots must also come in close contact with the soil in order to get the water and food needed for growth.

In general to prepare a good seed bed proceed as follows: If manure has been applied this should be thoroughly scattered before plowing. Discing before plowing is often very beneficial when farm manure or green manuring crops are plowed under since it greatly helps to mix the manure with the soil. This mixing prevents the formation of a loose layer between the surface soil and subsoil which would act as a break in the capillary ladder. The plowing should be so done that all the soil is cut and turned. As soon as possible after plowing the soil should be pulverized and then compacted preferably with a corrugated roller. A mulch should then be provided for by harrowing. The earlier the plowing can be done the better, since this gives the soil a chance to settle and also gives time for killing weeds which is espceially important in seed bed preparation for corn. The general principles which have been given apply to all soils. The different kinds of soils, however, have certain peculiarities which make it necessary to handle them somewhat differently as will now be indicated.

Treatment for Different Soils.

Farmers generally know that clay soils should not be plowed or worked when they are too wet, since that causes a breaking down of the much desired crumb structure which results in a puddled condition and later in a lumpy and very hard condition. When a soil has once gotten into this condition it takes several years to bring it back to a good physical state. Incorporation of organic matter and lime when needed greatly help the physical condition of these soils. Aside from danger of puddling, proper seed bed preparation with clay and silt loam soils is easily accomplished by following the general principles which have already been outlined.

Proper plowing, thorough discing and dragging, and compacting with a heavy corrugated roller or cutli-packer are the important factors in the preparation of the seed bed for both marsh and sandy soils. Many farmers realize the importance of these factors, but others plant their crops, especially on the lighter soils, with as little labor as is necessary to cover the seed with a little soil. It is sometimes said "that if the average farmer's wife prepared her husband's bed as poorly as the farmer prepares his seed bed he would sue her for divorce," yet the farmer expects Mother Nature to produce bountifully without any assistance on his part.

Discing and Dragging

Many farmers say that sandy soil does not require discing but experiments indicate that plant food must be made available by thoroughly cultivation even on sandy soil. Discing not only places the soil in better tilth but also firms the soil which is very essential. All fields plowed should be double disced.

On peat and muck lands a cutaway disc harrow which goes into the soil more thoroughly is recommended. Two or three discings are very necessary to break up the fibrous tissues, aerate the soil, and promote bacterial action. In other words, these soils cannot be worked too much. A mulch obtained with the aid of a harrow should always be maintained on the surface on all soils to conserve moisture as well as to kill weeds. This can best be done by cultivating every week until the field is planted.

Compacting.

Both sand and peat soils must be packed firmly to succeed in growing crops successfully. All food which the plant secures must be dissolved in water, so large supplies of moisture must be present in the soil at all times. Loose soils dry out quickly. Both sand and peat soils are naturally very loose, and therefore compacting proves very beneficial.

The most efficient machine on the market today for firming the soil is a culti-packer or corrugated roller.

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60 ACRES, all planted to alfalfa and has been for a good many years, all in first-class condition; water from Bear River canal; right on the railroad, right on the county road; some of the best land in the Bear River valley. This property can be had for $150.00 per acre; small payment down and terms on the balance.

60 ACRES IN CACHE VALLEY. This property lies immediately under the canal and we are offering it for $115 per acre. It is one of the oldest farms in Cache valley and has been farmed very successfully to oats, alfalfa and sugar beets. We can accept 10 per cent down and ten years on the balance. This property is located near a good town, schools and two grades in high school. Good water for domestic purposes and first-class irrigation water. There is still some due on the water.

40 ACRES IN CACHE VALLEY, right near the railroad station, right near a good town, schools churches, and other social conditions are first-class; good water right, water for domestic purposes; on the country road. This farm has been planted to alfalfa, sugar beets, potatoes and grain. $120.00 per acre, ten years to pay, 7 per cent. There is still some due on the water.

160 ACRES OF FIRST-CLASS WHEAT LAND situated in the center of the Bear River valley, one mile from the railroad station, all under a high state of cultivation, to exchange for Salt Lake property.

We have two or three small pieces of land for sale in the Bear River valley, one piece of 12 acres right by the station at Tremonton. This property has a full water right and is accessible to the city water, electric light and other modern conveniences. This property can be had for $175 per acre, small payment down and easy terms on the balance.

72 ACRES AT EAST GARLAND for $7500.00, easy terms; water from the Bear River canal for part of this land, situated on the main county road, within a half mile of school; house, barn and other improvements on the place, electric lights and telephone. This is some of the best land in the state of Utah. Twenty tons of sugar beets per acre have been grown on this land for a number of years. There is a small orchard, some alfalfa and grain land. This property is within 1½ miles of the Garland sugar factory. If you are in doubt as to the quality of this particular farm, wire or write any bank in Boxelder county and ask for information on east Garland land.

184 ACRES, located at Thatcher, in the Bear River valley. We will sell all or divide this into smaller tracts. The farm is considered one of the best in the Bear River valley and we can recommend it very highly. It is near good schools, church and is located on the main county road. It adjoins the canal and is easily irrigated. The soil is mountain loam soil and very productive. This property is in a very high state of cultivation and is adapted for any agricultural crops, especially sugar beets, potatoes, hay and grain. The land, together with the improvements and water right, can be had at $185 per acre, on easy terms. It is seldom that a farm of this kind is ever offered for sale.

35 ACRES AT CENTERVILLE, with a nice orchard, good water right, on the main road; 7 acres in nice orchard, the balance is garden land. Six-room house, water piped to the house, every modern convenience. In fact, this is one of the nicest farms in Davis county. Price $10,500; one-half down, terms on the balance.

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The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring. I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25 to $50 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

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The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

Send your orders for Butter Wrappers today to the Utah Farmer.

This machine packs the lower soil and leaves a somewhat more loose layer of soil on the surface to serve as a mulch, which breaks up capillary action and conserves moisture. On light sandy soils it also leaves the field rough, thus preventing the blowing of sand by wind. On marsh or peaty soils, rolling both before and after seeding is preferable! on sandy soils the field may be packed either before or after seeding.—Journal of Soil Improvement.

PLANT HOG FEEDS

State Food Administration.

The last year's experience has shown that the hog raisers in this state must care for themselves in the matter of feeds.

At present most breeders can care for their hogs with what pasture is available, supplemented by whatever grains are on hand or the comparatively small amounts of feed that might have to be bought.

Now is the time to plan on raising the feeds for next season's operations. Indications are that hulless barley will be scarce and as barley is one of our main feeding grains we should plant as much of it as is possible under existing conditions. Blue feed barley, however, can be had in sufficient amount and no doubt will be planted extensively by many feeders.

The farm on which alfalfa is grown should also have field peas for feeding later in the season. Seeds of the Canada and the San Luis Valley varieties are good and can be obtained without difficulty. Provided such a farm has plenty of water about three pounds of Dwarf Essex Rape to the acre should be planted with the peas, and the combination fed after using alfalfa.

Spring rye is somewhat scarce so it will be a good plan to arrange to have some rye planted this fall.

At elevations varying from 5500 feet for northern Utah to 7000 feet for Southern Utah, white flint corn may be grown very successfully. The Australian white flint corn is a good variety, but there are also other varieties that will do as well. There is no need of mentioning the value of this grain which is the best of all for feeding purposes.

Mangels are good and should be planted if the farmer is not in a sugar section, but where sugar beets grow well there is no need to plant the mangels.

On some of the newer irrigated lands where alfalfa may not be available a very good substitute will be found in rape which makes excellent pasture and should be sown about eight to ten pounds to the acre.

If rape is planted on this newer irrigated land and a crop of field peas is also planted on a separate field (to prevent hogs trampling the young peas while pasturing rape) the two crops will afford an abundance of good feed.

This kind of a farm can also supply barley, fall rye, mangels, and corn where climatic conditions are favorable.

Dry land farms can grow fall rye, some varieties of flint corn which are adapted to dry land conditions, and sorghums as forage. Sudan grass is another source of forage on dry land and when planted in rows will require from five to eight pounds of seed per acre.

By communicating with your County Agent you can get in touch with persons having any of the above named seeds or varieties provided the local supply is not large or complete enough for your use.

The important thing for us is to raise feeds for our future livestock activities and not risk having to buy high priced feed from outside the state.

PREPAREDNESS IS ECONOMY.

DIP SEED POTATOES

Disease Introduced Into the Field on the Seed are Responsible for Many Heavy Losses.

It is the duty of everyone who grows any potatoes whether in the home garden or on a larger scale to use every reasonable means available to produce as large yields as possible on the land allotted to potato culture. By employing means to increase the yields per acre one can devote less land to potato growing and still produce as large a total crop as was formerly grown on the larger acreage.

Various disease of potatoes have a large share in the responsibility for reductions in yields and quality of the crop. To entirely or largely control all of these diseases it is necessary to (1) **rotate the soil** so that potatoes are not grown on the same land oftener than once in four or five years as a number of disease remain alive in the soil from year to year; (2) **select the seed** to avoid the tuber-borne diseases such as wilt, blackleg, late blight, inherited weaknessess, etc., which are not controlled by seed treatment; (3) **disinfect the seed** preferabley with mercuric chloride (corrosive sublimate) to avoid the introduction of Rhizoctonia (Black scurf), scab, etc., into the field; (4) **spray the vines** with Bordeaux mixture to hold in check the late blight and early blight diseases which are not successfully prevented by any other way and; (5) **store the crop well** in a cool, dry, well-ventilated storage bin to hold in check the serious storage rots.

Because of the almost universal presnce of Rhizoctonia (Black scurf) and the very frequent occurrence of scab and silver scurf on the potatoes it is impossible to grow crops without serious reductions in yields and quality unless seed treatment is used. There are two materials in common use in the State for treating potatoes, namely—Formaldehyde and Mercuric Chloride. Because of the fact that Formaldehyde does not control Rhizoctonia but that Mercuric Chloride does control Rhizoctonia in addition to controlling scab, only Mercuric Chloride should be used for treating potatoes. This material may be prepared and used as follows:

1. Prepare the solution by dissolving 4 ounces of Mercuric Chloride, which can be secured from a local drug store, in 30 gallons of water. Powdered or crystalline Mercuric Chloride is preferred and should first be mixed with about 1 quart of hot water, since this causes it to dissolve more rapidly. When completely dissolved add enough water to make 30 gallons.

2. Do not use metal vessls or containers for this solution, since it corrodes metals and rapidly loses strength. Barrels, wooden tubs or concrete vats may be used. It is a deadly poison and must be kept away from children and animals. It will not injure the hands. Treated seed also is poisonous and must not be eaten or fed to stock.

3. After sorting and cleaning, place the uncut tubers in sacks or crates and submerge in the solution or merely pour them into the solution for about 1½ hours. Remove and drain the sacks, or spread the seed to dry, after which it may be cut. Use a fresh solution after every fourth batch of seed treated, since it loses its strength rapidly through use. If the potatoes are to be "greened" before planting, this shoud be done after treatment, otherwise the sprouts would all be killed or greatly injured.—Bulletin of Oregon Agricultural College.

Don't sit down and think about what you would do if you could live your life over. Get busy and improve what is left of it.—The Hartford Agent.

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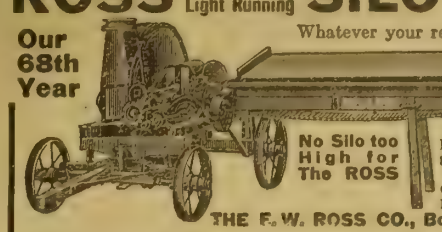

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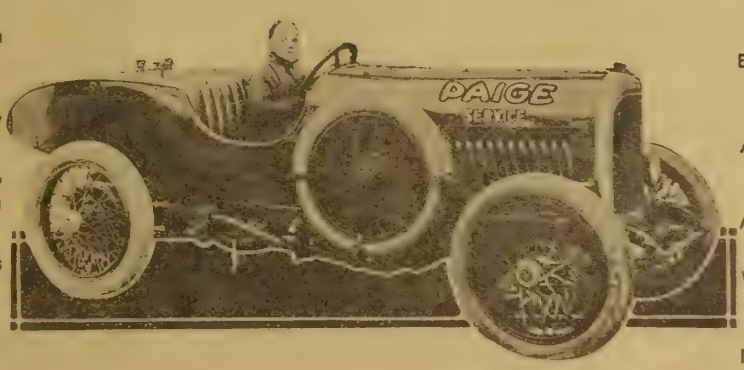

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LIVE STOCK

CARE OF SOW AND PIGS

How to Manage the Sow at Farrowing Time—What to Do When the Pigs Arrive.

As the time for farrowing approaches, the sow should be watched carefully, in order that assistance may be given if necessary. The sow generally becomes nervous and restless as parturition approaches; she makes a nest for her young; a swollen vagina and milk down in the teats are other visible signs. One can be quite certain that a sow will farrow late in the afternoon or the following night when milk is found in the teats in the morning.

The feed at this time should be sloppy and limited in amount. Nothing but lukewarm water should be given the sow during 24 hours previous to farrowing. If she has already farrowed a litter and has been properly fed and cared for during pregnancy, little difficulty may be expected. With young sows, particularly those bred at an immature age, there is considerable risk at this time, not only to the pigs but to the sow herself.

There is a difference of opinion as to the amount of bedding which should be given to the sow at this time. An active sow in comparatively thin condition can be trusted with a liberal amount of bedding, but sows which are in high condition or which are at all clumsy, had better be given only a moderate amount of bedding. Leaves or short straw are preferred.

The farrowing pen should be dry and well ventilated, but free from drafts. Provide the pen with a guardrail made of 2 by 4 planks with their edges against the sides of the pen about 10 inches above the bed. These prevent the sow from lying against the partition, and lessen the danger of injury to the pigs. The little fellows will soon learn to creep under the guardrail when the sow lies down.

The management of the sow during farrowing depends largely on the animal and on the weather conditions. Assistance should be at hand if needed, but the sow need not be helped if she is getting along nicely.

What to Do When the Pigs Arrive

When the pigs are born during warm weather, they are less liable to become chilled and will generally find their way to the teats unaided. In extremely cold weather the pigs will be in danger of being chilled, unless the hog house is heated. To remedy this, place a few heated bricks in the bottom of a basket or small box, covering them with chaff or straw, and put a cloth over the top to keep in the heat; unless the sow objects too seriously, the pigs may be rubbed dry with a soft cloth and placed in the receptacles as fast as they arrive. If any of the little pigs appear to be lifeless when they are born, first see that all mucus is removed from the nose, then give the pig a few gentle slaps on the side with the hand. This will start the pig breathing if there is any life in the body. Give it a suck of the sow's milk and place it in the receptacle, as described previously. The pigs will not suffer if they do not suck for a few minutes after farrowing.

Cut Out the Black Teeth

Before placing the pigs with the sow, cut out the eight small tusk-like teeth. There are four of these on each jaw in the rear of the mouth. These teeth are very sharp, and if left in the pig's mouth they will likely cause tearing of the sow's udder, and the little pigs cut one another's mouths while fighting for a teat. These teeth can be removed with bone forceps, wire nippers, or with a knife. Never pull out the teeth. Always cut or break them off. After this operation is over, place the pigs with the sow, care being taken that each one gets to a teat. When the afterbirth is passed, it should be removed from the pen at once and buried or burned. There is good reason to believe that eating the afterbirths is often the beginning of the habit of eating pigs.

As a rule the sow should have no food the first 24 hours after farrowing, but should be given a liberal drink of warm water. If, however, she shows signs of hunger, a thin slop of bran and middlings may be given. The feeding for the first 3 o 4 days should be light, and the time consumed in getting the sow on full feed should be from a week to 10 days, depending on the size and thrift of the litter.

The Sow's Feed.

Great care must be taken to feed the sow properly. If she is not being properly fed, the little pigs will show it. If the pigs follow the sow around very much and pull at her teats, it is a good sign that she is not giving enough milk, and more feed should be given to stimulate the milk flow. When a sow is overfed, causing a heavy flow of milk, scouring is generally produced in the pigs. If this happens, cut down the sow's feed immediately. Give the sow 15 ot 20 grains of sulphate of iron (copperas) in her slop morning and evening, and if necessary increase the dose until results have been obtained.

Exercise Is Necessary.

After the sow has farrowed, it is best for her to be in the open air. Of course, if the pigs are farrowed during the winter months, care will be needed, and it may be necessary to let the pigs reach the age of two weeks before turning them out. They can, however, get considerable exercise in the piggery or in the lot with the sow, and there is often a lot adjoining a barn that is sunny and sheltered from the cold winds, where the sow and pigs may be turned for exercise. Do not allow the pigs to run out during a cold rain.

If they do not get exercise, they will get fat and lazy and the usual result is the "thumps." This is caused by the fat getting so thick around the heart and lungs that the pigs find it difficult to breathe. The best way to prevent this is to avoid overfeeding and make the young pigs take plenty of exercise.

THE FARM GASOLINE ENGINE

There is a great demand for the gasoline engine on the farm at the present time. There is a reason for this. There are so many things that can be so profitably done with it that it has become a necessity on many farms. The farmer who is about to buy a gasoline engine does not always know exactly what he wants. He necessarily needs a little education along the lines of the kind of an engine to buy—its size and the use to which it is to be put. It may be that the farmer has a number of catalogues from reliable gasoline enigne manufacturers. He has probably looked them over carefully, but yet it is not just clear to him how to select his engine.

The buyer should have some ideas of his own and should select his engine according to requirements and conditions. He should not correspond with unreliable firms or with those companies that put out cheap engines without a guarantee.

The gasoline engine should not be a complicated machine, but one of simple design, so constructed as to be easily adjusted, and kept in repair. Our advice would be to select the engine for simplicity, size needed, reliability, durability, and last but not least, for economy of fuel consumed.

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(LIMITED)

MAKING COTTAGE CHEESE ON THE FARM

(Continued from page 1)

come mushy and will drain more slowly. The sides of the cloth may then be rised and lowered every few minutes to hasten draining. When the curd is rather firm and the whey has nearly ceased to flow it is ready for salting ,although tastes differ somewhat, some preferring a dry while others a soft, moist cheese.

Salting.

The cheese should be salted to suit the taste. Usually, however, from one to two teaspoonfuls to the gallon of milk is about the quantity desired. The salt may be sprinkled over the curd and worked in with a spoon or a paddle. The cheese is then ready to eat.

Making Cheese With Rennet or Pepsin.

Cottage cheese made with rennet, a junket tablet, or pepsin has a finer and more uniform texture and requires less time and attention in making. Any one of these will cause the milk to curdle sooner. The process of making is the same as already described except that the milk is warmed to 80 degrees F. and allowed to remain at that temperature for 5or 6 hours, at which time 2 or 3 drops of liquid rennet per gallon of milk are diluted in a tablespoonful of cold water and stirred into the milk. When rennet is not available, one-eighth of a junket tablet to a gallon of milk may be dissolved in a tablespoonful of cold water and stirred into the milk. Powdered pepsin may be used for the same purpose, a quantity that will remain upon the point of a penknife being dissolved in a tablespoonful of cold water and then mixed with the milk.

When rennet, a junket tablet, or pepsin is used the coagulum is placed in a drain cloth without cutting or beating. A finer and heavier draining cloth is necessary because of the fineness of the curd. The cheese is salted as already described.

Pasteurization of the Milk.

While for small-scale operation the pasteurization of skim milk may not always be practicable, it permits a better control of the fermentation, increases the yield of cheese, and renders the product safe from disease-producing organisms. With pasteurized milk it is absolutely necessary to use a starter.

Quality.

Cottage cheese is judged by its flavor and texture. A high-quality cheese should have a clean mild, acid flavor and a texture smooth, free from lumps, and uniform or homogenous throughout. Flavor can be controlled by the use of clean, sweet skim milk and a good starter, but texture largely depends upon careful manipulation during the making process.

Sweet or sour cream added to cottage cheese makes a richer and more palatable product.

If the cheese is to be kept for several days it should be stored in an earthenware or glass vessel rather than in one of tin or wood. It should be stored in a cold place, thereby it will keep longer without becomnig sour or moldy.

Neglect of Farm Implements

A. P. Young.

Your paper reaches so many farmers, and they have learned so many valuable things from it, and with the hope that they will read this article and also put it to some practical use is my only object in writing it.

The neglect of farm machinery and tools by so many farmers is appalling. Any one traveling the roads can see on every hand valuable farm implements left standing in the open fields, where they were last used, without covering of any kind to protect them from the winds, rain and sun, going to decay and ruin as fast as these elements can destroy them. This is not only so with reference to the cheaper implements such as plows, hoes and small implements, but is true with the more costly ones, such as reapers, hay presses, seed drills, and wagons. Any farmer knows that to leave his implements to take the weather as it comes means an early destruction of them, and also he knows that by caring for them by putting them under a good shelter, painting them when they need paint, and keeping them from the rains, wind and sun, means that they will last him many years longer than if neglected; and yet there are hundreds and thousands of these implements left in the fields, near the houses, in the open where they are daily, and yearly in some instances, exposed to ruin and waste.

On a recent trip of about 15 miles and return we kept a list of the articles we saw standing in the fields and near the farm houses, all of them exposed to the weather, some left where they were used the past season, and some of the reapers with the canvas still left on them, and practically ruined:

3 new reapers, canvas ruined and machine badly rusted.

1 old reaper, practically worthless now.

3 hay presses, rusted and paint practically all off.

17 plows, some in reasonably good conditions, others rusted and badly injured.

8 wagons, some recently used, but all of them standing in the open.

2 grain drills, not yet badly injured, but showing signs of weather.

4 cultivators, most of them in reasonably good condition, but some rust.

We had no way of finding all of them near us, but these we saw from the road. There is no telling how many more were in the immediate vicinity just as badly neglected.

I know too well that many farmers are not able to have everything they would like to have about them; at the same time they could save these farm implements, even if they had to take them to pieces and store them in small shelters.

If it were possible for every farmer to take his implements apart, to paint them as they were put away, and then store them in some secure and dry place it would mean a saving of thousands of dollars per year to the people of our country. A few dollars' worth of paint means many dollars in saving if used judiciously.

Will not some of the farmers who read this profit by it and go and get their farm implements out of the fields, paint them, and put them away until they are needed again? If so, they will have spent the time to a good advantage.

THE TRACTOR WAY IS THE EASY WAY

If you have ever tried to work four or five horses during a season you know what it means to get up in the morning, go out to the stable, and feed, curry and harness four or five horses before breakfast. Then after breakfast get these four or five horses watered and properly hitched to whatever machine you are going to use. On the average you will put in an hour both night and morning at this work and at least ¾ of an hour at noon, if you give your horses the proper care. If the flies are bad or the day is hot and the horsese are restless, your patience is taxed to the utmost and at night the likelihood is that you would be almost too tired to sleep.

It is true that from constant practice the natural horseman becomes proficient and really does not think much about the amount of time, care and attention he devotes to the animal power of the farm. He does not stop to think how many times during the day, turning corners, the trace is unhooked or the horse gets out of the traces, necessitating a trip of the driver up to the team and back. He does not think of the time wasted allowing the team to rest when they become too warm. There isn't any question but that half the time put in caring for a tractor of the same horse power that is necessary to care for horses will keep it not only in perfect condition, but the effort necessary to operate the machine during the day is practically nothing compared to the effort necessary to handle four, five or six lively horses.

The reason we do not give this question much consideration is because it comes natural to us to handle animal power. We have been raised to it, but if you have ever lived in a neighborhood where a man who has lived in the city came to the farm and tried to operate the farm with horse power you have had a practical illustration of what hard work he will make doing what to you appears a most simple and easy task.

When we all become as accustomed to handling tractors as we are now accustomed to the handling of horses, we will look back to the days of the use of horse power and wonder how we ever did as well as we do.

ENGINES ON THE FARM

W. W. Carlson, Kansas A. C.

Gas engines should be used more generally for daily work by the women, especially in war times when there is a shortage of labor.

Many kinds of work ordinarily accomplished by women on the farm through physical exertion should be done with the aid of a gas engine. Running the washing machine, wringer, grindstone, cream separator, churn, dishwasher, bread mixer, and pump are some of the uses to which an engine may be put. If the engine is connected with an electric generator it will run a sewing machine and other electric appliances.

Garden tools which may be driven by a gas engine and which are more efficient than the hoe may be purchased. The automobile run by a gas engine enables the farm wife to deliver promptly and hence profitably butter, cream, eggs, chickens and other products to the merchants. Not only is this profitable financially but it is a means of furnishing a diversion from the steady grind of farm work.

Since women are less muscular than men they should have machinery to do more of the work in which they are engaged. The stationary engine and gas engine must be equipped with self-starters and other devices to reduce the required labor in starting. More trained engineers are needed to perfect machines which will be of maximum efficiency in lightening farm work.

Women as power machines are less effective than men. The farm labor problem is one that women will be called on to help solve, and every aid must be given to help make this work easier and more productive.

It has been proven by tests that a man as a power machine when turning crank for eight hours a day can develop only one-eleventh of a horse power. A wage of 25 cents an hour means a cost of $2.75 a horse power hour. A gas engine will develop one horse power hour for one cent at the present cost of coal oil."

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POULTRY

HINTS ON INCUBATION

Byron Alder, Poultryman, U. A. C.

Where broody hens can be obtained, this is the best method of incubation for the farm or back-yard if only a few chicks are to be hatched. The out-door hatching box, usually gives good results. It can be made in sections with four to six nests in a section. Each nest should be covered with a rain-proof lid and provided with a small runway. Keep fresh water, feed, and good sharp grit in the runway.

Move the broody hen to this nest at night. Set her on infertile eggs or artificial nest eggs and let her stay over night. If she sits alright, the next day place under her the eggs for incubation. Use hens from one of the general purpose breeds. Leghorns and their type are not reliable. Use only good sized, well shaped eggs from vigorous pure-bred stock, Eggs should be gathered often and kept in a clean cool place. Don't wash hatching eggs nor hold them longer than necessary, 12 to 15 days should be the limit. In cold weather 11 to 13 eggs and in warm weather 13 to 15 eggs may be put under each hen.

Dust the hen thoroughly with a good lice powder or cover a place about as large as a quarter on the abdomen about 1 inch below the vent with blue ointment. Put the blue ointment on the skin not out on the feathers. This is a poisonous salve and should be handled carefully. It can be obtained at most drug stores. A bit of the salve about as large as a small pea is sufficient for each hen.

Test eggs about the 7th day. Take out infertile eggs and if 3 or more hens are set at the same time the eggs can often be doubled up and one hen re-set. When chicks hatch give all chicks from two hens to one and re-set the other hen or break her up so she will start laying.

Where an incubator is used a well ventilated cellar is the best place to run it. If a good cellar is not available a room with good ventilation and free from drafts may be used. Do not put the incubator in a damp mouldy celler where vegetables and fruits are stored nor near anything giving off odors or gasses. Follow instructions sent with the machine. Be sure to supply plenty of moisture. The moisture problem is quite important in this section. The egg should lose from 12 to 15 per cent of its weight during the first 18 days of incubation. By marking and weighing 10 to 12 eggs at the beginning and then weighing these same eggs on the 6th 12th, and 18th days you can easily calculate whether evaporation is too rapid or not enough.

Do not add more eggs during the incubation period. Turn the eggs night and morning, beginning the morning of the 3rd day and continuing up to the 18th day. Be sure your hands are free from grease or oil when turning the eggs. Attend to the machine and lamp at regular periods. The temperature at the top of the eggs should be 101 degrees F. first week, 102 degrees second week, and 103 degrees the third week.

When the chicks begin to hatch don't open the door of the incubator, unless absolutely necessary until the hatch is complete. During the hatching the temperature may go up to 105 degrees or 106 degrees without serious results. It will nearly always run up a little at this time. After the hatch is completed the door should be opened a little and the temperature allowed to cool down.

Your broder should be warmed and ready for the chicks before they are taken from the incubator. After each hatch the incubator should be thoroughly aired and cleaned. The egg tray should be scrubbed with warm water and soap or soda. Light the lamp and dry the tray and egg chamber before re-setting. It is a good plan to use a new wick for each hatch.

HINTS ON BROODING

Byron Alder, Poultryman U. A. C.

A great many different types of brooders are used each year in raising chicks. Whatever type is used it should be ready at the time the chicks are expected to arrive. It is too late to start the brooder after the chicks are dead or even injured so they will not develop into good vigorous stock.

A few incubator chicks can be brooded successfully with hens. There should be little trouble in getting the hen to take the chicks if she has been broody for a few days. The chicks should be placed under her only after dark at night. Capons can also be used by confining them in small brood coops a week or ten days before the chicks are received. Put the chicks under him at night; if he doesn't cuddle and mother them the next morning take them out and keep them in a warm box during the day, put them back under the capon the next night. The second morning he will seldom refuse the care for the chicks. They are usually more quiet and careful than the old mother hen.

When hens are used for brooding they should be confined to small brood coops with small runs in front and the chicks allowed to run at will. The coop should be in a clean dry place and should have a rain-proof cover. Watch closely for mites and lice. Treat the hens with blue ointment before chicks hatch but do not use this on chicks. A mixture of equal parts of lard and olive oil is best to free chicks of lice. Dip your finger in the mixture and run the oil on the back of the head and neck or on other parts of the chicks body where lice are found. Move the brood coop often and spray it with kerosene for mites. Don't put kerosene on the chick or hen.

A good brooder provides a warm place for the chicks to hover with a cooler place to feed and exercise, good ventilation without drafts, sunlight, shade, protection against enemies including mites and lice, and is simple in construction, easy to clean and disinfect, economical, and safe from fire.

When brooding chicks in large numbers, 300 or more, the coal burning colony brooders are more economical and will give good results if propely handled. The brooder house should be well made and where possible divided into two rooms. The stove should be placed in one room and the chicks kept near the stove the first 3 or 4 days. After about 5 or 6 days the chicks should be allowed to run back and forth from the heated room into the cool room, and all feeding done in the cool room. A clean dry litter free from mould should be scattered on the floor, especially around the stove, where the chicks hover. Alfalfa leaves, chopped alfalfa or clover, or dried lawn clippings would be best. Whatever is used the chicks will eat some of it, therefore, fine shavings, sand, etc., should not be used especially the first few days. As soon as the chicks are past the brooder state the stove may be removed, perches and other equipment added, and the brooder house used practically the whole year.

Where only a few chicks, 250 or less, are to be brooded the natural method, or the small fireless or lamp brooders are more economical and usually give good results if properly handled. Plans for a small home-made fireless brooder that has given good results can be furnished on request.

Thousands of chicks are lost each year because of damp unsanitary brooders and surroundings. Other brooder evils are over-crowding, poor ventilation, over-heating, chilling, bad methods of feeding, and carelessness or neglect. A good brooder, good feed, and good common sense are necessary for success.

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Harmless and Inexpensive Fly Poison is Described by Authority.

H. R.Hagan, U. A. C.

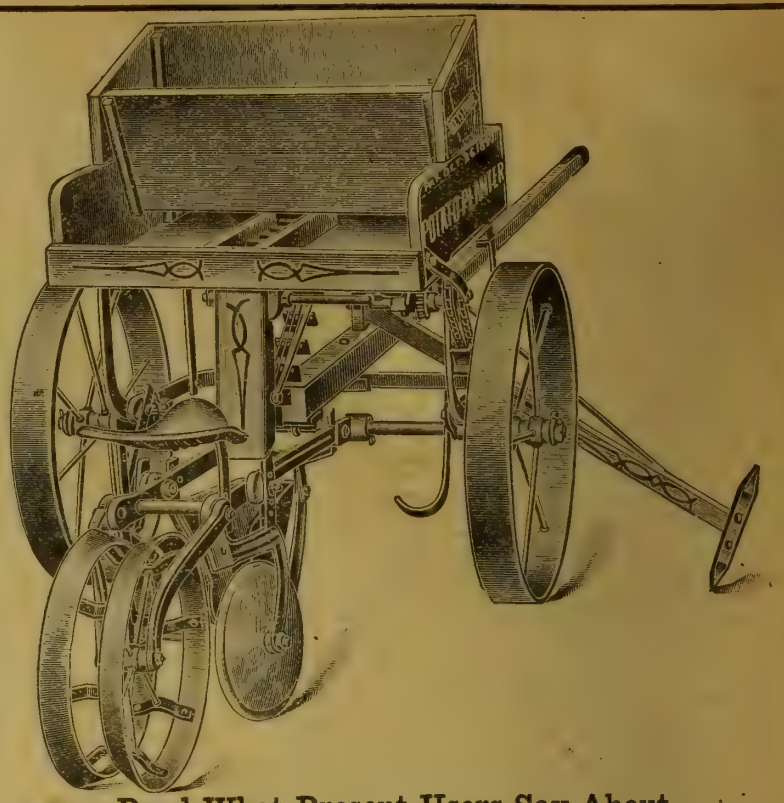
Spring time is the beginning of fly time and flies bring disease. The following simple control measure for flies in the house, has been proved efficacious:

Soak a piece of bread about one and one-half inches square and one-quarter inch thick in a little milk; then place the bread in a saucer and add a teaspoonful of ordinary formalin. Add sufficient water to raise the level of the liquid in the saucer until it almost reaches the upper surface of the bread. Sprinkle over the bread and liquid a spoonful of sugar.

This saucer should be placed on a window sill in the evening and the blinds drawn before all the windows except the one before which the saucer is placed; this shade should be drawn two-thirds the way down. Early the following morning the houseflies will go to the window that is partially lighted and partake of the liquid in the liquid in the saucer. Within ten minutes after a fly has taken the least sip of the liquid he will be killed. This method cannot be considered in the least dangerous to the children in the house as the taste is very repulsive to human beings. If taken into the mouth of the child vomiting occurs but no serious illness.

Poisoned fly papers and poisoned liquids commonly sold upon the market should be avoided, as many cases are reported each year of children being dangerously ill, or even losing their lives, through gaining access to some of these articles.

If sticky fly papers are used, they should not be placed where clothing, curtains, etc., can possibly come in contact with their surfaces. It is far better to pin the fly paper on the outside of the screens and catch the flies as they seek entrance to the house, than to limit one's self to destroying only those that have already gained admission.



Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

MILLER-CAHOON COMPANY
GENERAL AGENTS
IDAHO FALLS, IDAHO MURRAY, UTAH

It's the Oil That Counts

It doesn't make a bit of difference how much you pay for an automobile, if the crankcase is not filled regularly with oil which is perfectly adapted to its lubrication, your car will sooner or later give trouble.

VICO Motor Oil

The advice of experienced motorists is to use the correct consistency of VICO MOTOR OIL, if you would maintain your car at a low cost. Light, medium, heavy.

"Every Drop Counts."

Utah Oil Refining Co.

Salt Lake City, Utah.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

FOR SALE

One 2 year old heifer, one 18 months old heifer, one 15 months old heifer. All high grade Jerseys. The Dam of each one made more than 350 lbs. butter fat in nine months.

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Springville Utah

BABY CHICKS—BABY CHICKS

White Leghorns, Brown Leghorns, $12.00 per 100.

R. I. Reds, $15.00 per 100.

ORLAND HATCHERY

Orland, Glenn County, California.

Bourbon Red Turkey eggs from prize winning stock, $4.00 per 12. Rouen duck eggs, $2.50 and $3.50 per 12. Every bird a winner. Also colored Nuscovy duck eggs, $2.50 per 12. Emma Miller, Farmington, California.

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE

Wellsville, Utah

10 Two and Three Year Old

Registered Percheron Stallions For Sale

Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

ACME STOCK FARMS

Breeders of Percheron Horses and Ramb ullet Sheep.

W. S. HANSON, Prop.

Collinston Utah

Order From Producer

R. I. RED BABY CHIX

MY SPECIALTY

Vigorous heavy laying stock. Limited number, Barred Rocks, Black Minorca Chix, $15.00 per 100.

DENTON POULTRY YARDS

Cambell California

WANTED

RELIABLE PARTY TO TAKE CARE OF TRACT OF LAND PLOWED AND SEEDED.

BOX 802

SALT LAKE CITY, UTAH

LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Calalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

Lumber, shingles, mill work, lowest mill prices. Prompt shipments. Inspect before paying. Send carpenter's list for free freight prepaid figure. Keystone Lumber Company, Tacoma, Washington.

Mexican Pinto Seed Beans

WRITE FOR PRICES

The Kirkham Co.

LEHI UTAH

CARING FOR THE YOUNG PIGS

(Continued from page 3)

large part of their feed direct and hence will not miss their mother's milk so much if the proper ration is supplied them. In order to teach the pigs to eat, a pen or creep should be provided where they may eat and not be molested by the sow. Pigs of this age should be led what they will readily clean up at least three times a day if it is desired to push them as rapidly as possible. Some recommend placing dry feed in the pen or creep and allowing the little pigs to run to it at will. This method has the advantage of supplying sweet feed at all times and does away with sour feed and sour troughs.

There are several different systems practiced in weaning pigs, depending somewhat upon the system of managment. Some prefer to let the pigs suckle the sow as long as they will and let the sow wean them. This is, of course, not possible where two litters are raised per year. The disadvantages claimed for this method are that the pigs rely too much on the mother for their food and hence do not obtain all the feed they have capacity to utilize. The large ones also get so they steal from the smaller making very uneven litters. By such methods it is not so easy to get all the sows in the herd bred near the same time, which is an objection.

Another system advocated by a few is to remove the largest pigs at first and let the small ones continue to nurse their dam. By so doing they plan to give the runts the advantage and they also think that there is less chance of udder trouble with the sow. It often happens, however, that instead of accomplishing the desired results, one of the two things happen: either the few pigs left with the sow get too much milk, which causes indigestion, or, since the milk flow of the sow is still stimulated, more trouble is had with the udder than if all pigs had been removed and the feed of the sow cut down, thus stopping the milk flow to a considerable degree.

Perhaps the most popular way to wean pigs accustomed to eating grain, is to cut down the feed of the sow a few days before weaning time, which is usually when the pigs are eight to ten weeks of age. This will tend to decrease the milk flow so rapidly that the sows may be removed without much danger of udder troubles and the pigs will hardly miss her. As soon as the sow is dry the feed may be increased so that the sow will usually come in heat and may be bred on the third day after the pigs are weaned.

The important thing then for successful weaning is to have the pigs accustomed to eating a good growing ration including some milk if possible. A good forage crop for the young pigs at this time will help materially to supply a cheap feed which will keep the pigs healthy and growing nicely.

WHAT DID SOLOMON SAY?

London children certainly get some quaint views of life. An instance of this recently occurred in an East End Sunday School, where the teacher was talking to her class about Solomon and his wisdom.

"When the Queen of Sheba came and laid jewels and fine raiment before Solomon, what did he say?" she asked presently.

One small girl, who had evidently had experience in such matters, promptly replied:

"'Ow much d'yer want for the lot?"

—London Opinion.

THE IRISH, AGAIN

Pat bought the last ton of coal at the yard for $3.80 and the teamster charged him $4.00 to haul it home.

"Did you pay it?" inquired Tom.

"Oi did not," said Pat, "Oi gave him twinty cints and told him to kape the coal."—Exchange.

Mention Utah Farmer when writing to advertisers.

HERD BOAR FOR SALE

I have some extra good big growthy boars eight months, ready for service, sired by Richards Defender and Pathfinder.

Priced to sell soon and guraanteed to please or will refund money.

ERIK W. OLSEN

Virginia Idaho

FOR SALE

4 pure bred gilts, and 4 pure bred males. Nearly 10 months old.

S. A. ROBINSON

Mosida Utah

GOOD HOLSTEINS.

I have three or four registered and grade heifers to spare of good breeding.

Priced from $60 to $175.

G. A. DIXON

Smithfield, Utah.

PERCHERON STALLION

One pure-bred registered imported Percheron Stallion for sale.

J. T. PETERSON,

R. F. D. 3, Box 30

Blackfoot, Idaho.

BEES WANTED

Address

E. LEHNHERR,

Murray, R. D. No. 7, Utah

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy, hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY

Ogden, Utah.

Help America By Growing Beets

Farmers of Utah and Idaho will be doing their patriotic duty if they plant an increased acreage to sugar beets this spring. With high prices being paid for this crop and the assurance of splendid yields there can be no more profitable farm investment than the cultivation of this root crop to supply an essential food for both soldiers and civilians. The world is crying for sugar do your part towards supplying this demand.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service.

Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

WE WANT FARM LANDS

IN EXCHANGE FOR

SALT LAKE CITY PROPERTY

BRUNEAU-HILL INVESTMENT CO.

343 Main Street Salt Lake City

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

Wellington Utah

FOR SALE

For splendid laying qualities and beauty, buy either Buff Orpington or Black Minorca eggs for hatching, $1.00 for 15.

MRS. P. MAHER

639 Seventh St. Ogden, Utah

FOR SALE

125 Ewes with March Lambs from Cotswold Bucks.

ROE A DEAL

Springville Utah

BABY chicks; eggs for hatching; all varieties. I make delievries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS

Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.

J. H. SHAFER

Proprietor Ogden Feed Co.

2246 Wash. Ave. Ogden, Utah

WANTED to hear from owner of good Ranch for sale. State cash price, full description. R. F. Bush, Minneapolis, Minn.

HEREFORD BULLS

C. F. DIXON & SONS

Payson, Utah.

HAVE 11 HEAD

6 to 16 months old

FOR SALE

Special prices to take them all.

Complete Dispersion Sale of Imported and Island Blood Jerseys of C. E. Long, Buhl, Idaho

WITH

CONSIGNMENTS FROM HERD OF S. A. KAYLER OF TWIN FALLS, IDAHO, AND IRWIN BROS., KIMBERLY, IDAHO.

AT

BUHL, IDAHO, THURSDAY, MAY 2nd, 1918

Production -:- Quality -:- Type

ISLAND BRED HERD BULLS, BRIGHT LIGHTS KNIGHT, (103741); BELLES VICTORIA DUKE.
Neither have yet sired a heifer that has made under 300 pounds fat as Jr. two year old.

SUCH COWS AS

Imported Castilian Lady, 594 lbs. fat 11½ months.
Imported Lads Bright Light, 484 lbs. fat 11 months.
Imported Faustina Masurier, 472 lbs. fat 11 months.
Imported Kathie Peer, 410 lbs. fat 10½ months.
Castilian Lady 2nd, 64½ lbs fat (in March as a 2 year old, first calf.)

MANY MORE OF EQUAL MERIT.

These herds have contained leading cows and been high herd for last two years in Buhl Pioneer Testing Association. Sold on these records sale day. Records made without silage or pasture. Arrange to attend sale, arriving at Buhl evening before sale as trains arrives to late on sale day.

AUCTIONEERS { COL. J. W. HUGHES, Forest Grove Oregon.
COL. E. O. WALTERS, Filer, Idaho.

CLERK, S. J. HAMMEL, Buhl, Idaho.

Send for Catalogue to C. E. Long, Buhl, Idaho. All Tuberculin tested over 6 months old.

Fight Rats and Mice

Kill the rats, they destroy food.

Imprison the crafty alien enemy who fires elevators, mills, warehouses and stockyards.

Hold up to scorn the man, whose wanton carelessness makes possible a like destruction of food.

Are you doing your "bit" to save and protect food?

Food is second only to man power in winning this war for world democracy, and wasting of food at this time, by whatever means, is criminal.

Months ago this warning was sounded throughout the land; still the destruction of food by fire has gone on at the rate of over $2,000,000 a month. This has been the known food loss in grain elevators, mills, packing plants, wholesale groceries and warehouses.

A thorough inspection of all such places in this state, during the early summer months, and a correction of the fire hazards found, has greatly reduced the fire loss in such repositories of food; but the destruction of food, by fire, in stores, bakeries, meat markets, hotels, restaurants, apartments and residence is still going on.

The individual losses are small, but the combined loss is enormous.

Today, more than ever, fire is a national enemy in our midst, and must be fought with the same vigor our enemy on foreign soil is fought.

If you cannot farm or fight, you can at least render a patriotic service, to your country by helping to conserve the nation's scanty food supply.

Three out of five fires can be prevented by ordinary care.

What are you doing to prevent fires?

The merchant, the hotel man and the housekeeper can protect both life and property by doing a few common sense things to eliminate fire dangers in stores and homes.

He can carefully inspect his heating plant, flues and chimneys, and correct all defects; he can be careful in the use of oils, matches, and in smoking; he can keep his premises and basement clean, and remove all rubbish and ashes; he can guard against rubbish fires; he can destroy the paint rag, and oily waste; he can protect against the dangerous gas jet.

Some matters of building construction and proper installation of electric wiring, making for greater safety, may be more or less technical; the common sense methods of fire prevention, above indicated, are not.

Carefulness and good housekeeping include them all.

Further, all can provide some simple means of extinguishing incipent fires, such as fire buckets, water barrels and pails and approved chemical fire extinguishers.

A bucket of water or a fire extinguisher used the first few minutes of a fire may be as good as the whole fire department equipment later on.

Where large values are at stake the automatic sprinkler should be installed.

Remember, that insurance moneys cannot restore food destroyed. Any destruction of food diminishes the already scant supply, and continues to raise the price of the remaining food.—Industrial Commission of Wisconsin.

FAMILIAR

A country boy of three accompanied his parents to his first ball game. After watching the game awhile his gaze fell upon the catcher and he cried:

"Oh, mamma look at the man with a calf weaner on."—Exchange.

Making The Most of Paint

The majority of farmers believe that a good job of painting can be done only by an expert, consequently painting that should be done is left undone because an experienced painter cannot be secured at the proper time, or because of the high charges real experts in this line charge—the cost of the paint usually being about one-third and the labor two-thirds of the finished work.

It is true that much of the painting done by inexperienced workmen proves to be unsatisfactory, but this is because the amateur failed to inform himself concerning a few necessary details and does not give the work the care which every piece of painting requires to make it a success.

As a matter of fact, notwithstanding popular opinion to the contrary, there is no mystery about the painting business. Any farmer who will take the trouble to master the fundamental requirements of good painting and will apply them with painstaking care can paint his own building with entire satisfaction.

The first thing which an experienced painter considers when sizing up a job is the kind of surface to be painted. If the building is new, all is well, but if the surface is old care must be taken to have it in proper condition before the work of painting is begun. Every bit of old paint, dirt, grease—in fact, everything which is apt to work loose and thus loosen the paint, or anything which will prevent a perfect union of the paint and wood must be removed. Then, too, the wood to be painted must be perfectly dry. Perhaps there is no more prolific cause of unsatisfactory jobs of painting than the ignoring of this simple precaution. Even experienced painters, rather than lose time, often apply paint to surface which tho apparently dry they know contain moisture. Consequently when the hot sun draws the moisture toward the surface it cannot find an outlet except through the paint; and a badly "blistered" piece of painting results. Usually the paint is blamed for this and both painter and owner unite in declaring that "that was a sorry lot of paint," and that particular brand gets a black eye which it in no way deserves.

Having secured a perfectly clean, dry surface, the job is now ready for the priming. This should consist of linseed oil with enough paint in it to "check" the oil—that is, prevent it from sinking too deeply into the wood. Manufacturers differ as to the exact percentage of paint required in the priming coat, and as they know their paint their instructions should be followed on this point.

The priming and each subsequent coat must be thoroughly "brushed out" and "brushed in." It would be hard to over-estimate the importance of this. The reason for this is that paint must be well "brushed out" or a thick coat, which is most likely to peel off, will result. It must be "brushed in" to form a perfect union with the underlying coat of paint or wood.

This "brushing out" and "brushing in" calls for lots of hard work, but it is work well spent, for well put on paint will stick for years if the foundation has been properly attended to. —Maurice Floyd.

IF EACH HOME SAVES

One ounce of meat daily, it means 465,000,000 pounds annually.

And one slice of bread, 365,000,000 loaves annually.

And one piece of butter, 114,000,000 pounds annually.

And one cup of milk, 912,000,000 quarts, or the product of 400,000 cows annually.

Send in your subscription TODAY.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 39 LEHI AND SALT LAKE CITY, UTAH. APRIL 27, 1918

Some Good Pasture Grasses for Utah

By F. S. Harris, Director Utah Agricultural Experiment Station.

Since the earliest records of man his domestic animals have secured a large proportion of their forage from pastures. Before crops were planted and harvested by man the wild grasses furnished the chief food for numerous kinds of animals, and the cutting and curing of hay came as a later development to supplement natural pasturage in seasons of scarcity.

At the present time there is a great difference in the prominence given to making and keeping pastures in various regions. In some places the land is naturally covered with a heavy growth of grass. Under such conditions it is easy to maintain good permanent pastures. Under other conditions first class pastures are obtained only as a result of much effort and their proper maintenance requires constant attention.

Arid regions do not usually have the best pastures without the aid of irrigation. The native grasses on the range grow well during only a small part of the year, and none of the cultivated grasses have been found that can be depended on to make satisfactory growth on the range during the dry season.

It is doubtful if the farmers of Utah have given sufficient attention in the past to making good pastures. There are probably a number of reasons for this: First, that alfalfa hay has been so easily produced in the state, and second, there has been so much public land on which the farm animals could be turned to graze during the summer. As the state grows in population hay will become more expensive, and as the public land is taken up the farmer will be confined more and more to his own premises. These conditions will make almost necessary the development of good pastures to furnish summer feed that was previously obtained from public land and the plentiful supply of alfalfa.

A certain amount of pasturage is desirable under most any condition. It makes a cheap way of feeding stock during the summer season when farm work is rushing. Good pasturage also helps to keep the animals in good health as well as greatly adding to the profit of milch cows. There is no hay that can compete in cheapness with pasturage for summer feed.

Grasses

The list of tame and wild grasses that are used for pasturage is very long, but only a few leading varieties are of sufficient importance to discuss in any detail. Those considered are suited to the conditions of the average irrigated farm in Utah. A grass to be good for pasturage should have a leafy growth and should form a compact sod that is not easily destroyed by the tramping of animals.

Kentucky blue-grass (**Poa pratensis**) is by far the most important pasture grass in America, although it is not as good for hay production as a number of others. It is strongly stoloniferous and will usually run out other plants on good soil. It is slow in developing, so is rarely sown alone. It begins growth very early in the spring, but does not produce much during the hottest part of the summer. Its seed is rather expensive and is often low in germination. From 1 to 10 pounds of seed are sown to the acre depending on the other grasses in the mixture. Canada blue-grass seed (**Poa compressa**) is often used to adulterate the seed of Kentucky blue-grass, as it is very difficult to distinguish between the two. The Canada blue-grass does not produce as well as the other, but is better adapted to poor land. It is probable that most pasture grass mixtures for Utah should contain Kentucky blue-grass.

Timothy (**Phleum pratense**) is one of the most important pasture grasses as well as hay grasses. One advantage in using it is the cheapness of seed. It also produces good feed soon after being sown. It needs a good soil and a fair amount of water. In permanent pastures it is usually later displaced by other grasses but it furnishes much feed while the others are getting established. It is one of the best grasses for temporary pastures that go into the regular rotation. For hay it is usually grown with red clover. Timothy seed weighs 45 pounds to the bushel. Where it is sown alone or is the chief grass, from 10 to 15 pounds of seed are sown to the acre, and the amount reduced according to the other grasses used.

Redtop (**Agrostis alba**) is particularly well suited to wet poor land. As a grass for hay it ranks second to timothy in the country although its hay is not as good as timothy. The seed is not expensive and if well cleaned weighs about 35 pounds to the bushel. When sown alone from 12 to 18 pounds to the acre are used.

Rhode Island bent (**Agrostis canina**) is closely related to redtop and is adapted to the same conditions of soil and climate. It has been used with success in Utah in pasture mixtures, especially on low wet lands.

Smoth Brome grass (**Bromus inermis**) is particularly well suited to arid conditions. It was introduced from the plains of Russia a few years ago, and has been extensively used in the drier climates for both hay and pasture. After it has been grown on the same land for a number of years it becomes root bound and unfitted for hay production, although it may continue to produce good pasturage. When sown alone about 15 pounds of seed are used to the acre.

Orchard grass (**Dactylis glomerata**) is a tall tufted grass, growing best in a deep rich soil, although it may produce fairly well on a poor soil. It is a good grass to go in pasture mixture and is sometimes sown with alfalfa. The seed is rather high priced and often adulterated. Good seed weighs about 20 pounds to the bushel, and rarely more than 15 pounds of seed are planted to the acre.

Tall Meadow Fescue (**Festuca elatior**) is a bunch grass which is about as stoleniferous as timothy. It takes practically three years for it to form a good sod. The seed is rather expensive and it is subject to rust. It is a good grass to go into a pasture mixture. It is one of the most important of the grasses grown in Europe.

The Rye grasses (**Lolium perenne and Lolium italicum**) are the most important grasses of Europe, but are not so much used in America. They have been found, however, to give fair-

(Continued on page 13)

GET A GOOD STAND OF BEETS

The importance of a good stand of beets can not be over estimated to the successful beet grower. Your beet tonnage depends on the stand of beets you secure. Last year there were a number of poor stands and the results was a poor tonnage. The land was not fall plowed and season late and beets did not make a good start. Once the tender beet plants make a start they should be kept a growing. Do not allow the land to crust and prevent beet seed from coming up. The tiny plants do not form much of a root system until the plants have started with their second leaves.

If a crust forms the beets can not force themselves through the hard surface and result is a poor stand.

The very best way that has yet been found to combat the crust is the prompt use of a scarifying attachment for the cutlivator. Most manufacturers offer what is known as the "spider," which is a revolving wheel with pointed prongs, somewhat curved. The "spider" attaches to the cultivator and revolves immediately over the row of beets. A great deal of care must be used in driving, as there is only an occasional plant showing through or the drill mark yet to guide. In one district where the soil was heavy, two farmers devised a home-made attachment for their cultivators, which, in their estimate, gave them a 75 per cent of stand where a bad crust threatened to give them not more than 25 per cent of stand. Not all of the implement dealers or growers know about the "spider" attachments. They are not expensive and their use in a single day will often much more than repay their cost. Even if they are needed only once in three or four years, they are a kind of insurance policy against a bad stand.

CUTLERY BRANDED

Veribest

Veribest TRADE MARK

Shows quality under every test.

STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.

S. P. 3

FIRST bank to be founded between the Missouri River and the Pacific Coast.

FIRST state bank in Utah to be admitted to the Federal Reserve System.

Walker Brothers Bankers

Founded 1859.
Joined Federal Reserve System 1918.
SALT LAKE CITY

SUGAR SUPPLY SOURCES.

Data Relative to Production and Consumption of Beet and Cane Sugars in the United States.

War's restrictions on the transportation of sugar and war's changes of the sources of supply to importing countries are better understood in their effects on the United States when the relative magnitudes of this country's sources of supply are remembered. During the five years ending June 30, 1911 to 1915, a little more than one-half of the sugar consumed in continental United States was brought from foreign countries, mostly from Cuba; about one-quarter came from our insular possessions, and one-quarter from the plantations and farms of this country.

From foreign countries, mostly from Cuba, the average annual net imports were 4,147,000,000 pounds of cane suyar, mostly raw; from the insular possessions 2, 130,000,000 pounds of raw cane sugar were received; and the domestic production averaged 1,873,000,000 pounds of raw cane and refined beet sugar. The total sugar consumption for these five years averaged 8,150,000,000 pounds.

Hawaii was the chief source of sugar among our possessions, and the average annual shipments were somewhat less than 1,200,000,000 pounds; from Porto Rico over 680,000,000 pounds were received, and from the Philippine Islands about 280,000,000 pounds.

Average Five-Year Beet-Sugar Production.

Beet-sugar production in this country has exceeded the production of cane sugar since 1905, and during the five years mentioned averaged 1,303,000,000 pounds, while the cane-sugar crop averaged 570,000,000 pounds.

The forthcoming Yearbook of the United States Department of Agriculture for 1917 will contain an article in which the sugar supply of this country is examined, and this article strikingly reduces the sugar consumption to the number of weeks for which the supply from each source was sufficient in the average of the five years ending with the sugar season of 1915-16. The sugar from foreign sources, mainly Cuba, sufficed for 27 weeks, from our insular possessions for 13 weeks, and the sugar produced in continental United States for 12 weeks. The beet sugar of this country sustained the consumption for 9 weeks and the cane sugar for 3 weeks.

Principal Producing Regions.

Louisiana produces nearly the entire cane sugar crop of this country, and the beet sugar is produced in a belt extending from southern Michigan and northwestern Ohio westward nearly in the same latitude to southern Idaho and northern Utah, and in western Nevada; on the Pacific coast beet-sugar production is in southern Washington, southwestern Oregon, in California in the Sacramento and San Joaquin Valleys, and in a large strip of country extending south of San Francisco nearly to San Diego.

The war has reduced the beet-sugar production of France and has cut off the supply of beet sugar to western Europe from Germany, Austria-Hungray, and Russia, and has made recourse to the large cane-sugar crop of Java practically impossible because ships are not available for the long voyage. In this situation in 1917-18, the United States has recognized the needs of the allies in western Europe and the common dependence on Cuba for sugar, and has an understanding with those allies and with the Cuban planters covering the distribution and price of the Cuban crop of the current season.

Spotlessly White

and in half the time Electrically

This is one of the many ways that women are simplifying their houeshold tasks by employing "Electrical Servants."

An Electric Washing Machine saves time, labor, money and clothes. The hours and effort it saves each wash-day can be devoted to those things which you want to do so much, but which your household duties have prevented you from doing.

By doing away with wash-board rubbing, the Electric Washer saves your clothes, and it washes the finest and most delicate fabrics without danger of injury. The cost of current to do a large week's washing is only a few cents.

The only SURE way for you to know about this wonderful labor-saving device is to see for yourself how it washes clothes and how simply it operates. If you will call at our store, we shall be glad to explain all this to you in detail.

The Electric Washer is but one of a whole train of "Electrical Servants" who will take all the drudgery out of housework and save you many hours each week—at trifling expense.

You can purchase all Electrical Appliances from us on small monthly payments.

Utah Power & Light Co.

Efficient Public Service

ORDER YOUR BEET TOPPERS NOW

The attention of our sugar beet growers is hereby called to the necessity of placing their orders for the Devey sugar beet harvesting machinery before May 15th of this year, so that it will be possible for us to get an additional number manufactured in time for the 1918 harvest, if necessary. To date 500 each of the puller attachments and toppers have been ordered from the manufacturers, which will be ready for the 1918 harvest. Any farmer having fifteen acres of beets or more, should purchase a topper at least, as he can save the price of the machine in one year on that acreage, and it will top about 100 acres in one season. The farmer has four years in which to pay for the machines, if he so desires, with 6 per cent interest on deferred payments. The harvesting machinery can be handled satisfactorily by a group of farmers if desired.

We are glad to be able to advise you that the puller attachment can be used on the Baby Beet puller as well as the John Deere, and possibly on other makes; this will be determined later. The topper can be used and if desired the beets can be pulled with the old style puller. Mr. Francon of Payson, Utah, did this for five years with a saving of 40c to 50c per ton.

Our fieldmen will call on you in the near future and you should be ready to place your order when they call.

Utah-Idaho Sugar Co.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

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FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, APRIL 27, 1918 No. 39

Prevention of Hog Diseases

Dr. H. J. Frederick, U. A. C.

Briefly summing up preventive measures which are valuable in checking outbreaks of disease among hogs the following important facts are worthy of serious consideration.

1. **Breed**—It is a false idea that certain breeds of hogs have any definite immunity to disease. Avoid too close in-breeding as this lowers the strength of animals.

2. **Feed lots or pens**—Must be kept in a sanitary condition if hogs are to be kept free from disease. Provide a clean, dry place for feeding, and do not make it necessary for the animals to swallow a large amount of their own manure or other filth in order to get a square meal of any kind of feed. Have your feed lots so located that they drain easily. Avoid placing hogs in a feed lot or pasture that lies close to a public road. Have your feed lot so fenced that it will not be possible for your animals to get out and wander over into some one's else feed lot or for some strange animal to enter your lot. Avoid filthy hog wallows, but supply a good cement wallow; it lessens skin diseases and parasites.

3. **Sleeping Quarters**—Provide light, dry, airy and well ventilated sleeping quarters for your hogs. Have them roomy enough that over-crowding will be unnecessary, and provide sufficient window space to allow of the free entrance of sunshine and air. Always remember that pure air and sunshine are the two best germ killers. Do not, under any conditions, allow your hogs to burrow under straw stacks or manure piles, nor have sheds covered with straw piles or manure. This usually leads to overheating, suffocation and diseases of the throat and lungs.

4. **Water and Food Supply**—Be just as particular about the purity of the water supply for your animals as you would be for your homes. Impure water is just as capable of producing disease in animals as it is in man. Provide sanitary drinking trough for your hogs and do not require them to secure their water out of old, dirty, filthy troughs; which are filled with dirt and germs. In the same degree cleanliness should be exercised in reference to the food-supply. Hogs must not be made the scavengers of the farm. Do not make a practice of feeding hogs on decomposed and souring food which no other animal will eat. Make an attempt to keep your swill barrels, slop buckets etc., reasonably clean. To do this means a great advance in the prevention of stomach and bowel trouble which so often leads to disease. Never feed dead animal carcasses to your hogs; this is doubly important if the animal died of some infectious disease. Feeding of swill and garbage from city homes, restaurants or hotels, is also to be avoided. Feed only clean healthy food, and you will be repaid many times for the slightly greater cost. Hogs as well as man and other animals, require a certain amount of variety in their food supply. This is necessary if their digestive apparatus is to be kept working properly.

5. **Sunlight, Air and Exercise**—Do not crowd hogs into close, dark quarters where they do not have sufficient sunlight and fresh air and where they cannot get exercise. Good, pure fresh air and sunlight with some exercise are the best and cheapest tonics in the world. Young pigs especially need exercise to prevent thumps.

Plant Your Corn Early

Dr. R. J. Evans, U. A. C.

Failures in corn crops due to freezing are frequent. The present high price of this product should spur every corn grower to avoid all possible losses. Many dairymen will be growing corn silage this year and many other farmers will be growing corn for grain to be used either as stock feed or for the making of corn meal.

There is evidently plenty of good seed corn in Utah which will cost about 10c per pound. Seeding at 8 to 12 pounds per acre would cost only about $ .80 to $1.20 per acre. Why not take our chances in the spring on this light investment rather than in the fall after it is too late to re-seed and an investment of exeperienced labor has been made in growing the crop? If the corn is not frozen back too badly in the spring it will come through alright. If killed entirely we can still re-seed immediately after frost and get as good results as with the old method of late seeding.

This warning is given to the dry-farmer as well. Early planted corn will, if properly cultivated from the first deevlop more drouth resistance than will late planted corn.

In all cases it is necessary to do a lot of early cultivation to keep the soil warmed up and the plants growing.

In the lower valleys of Utah corn should be planted about May 1st. The higher valleys will vary from May 10th to June 1st. If we are wise we will not take all of our chances after the crop has been grown to near maturity but will plant as soon as conditions will warrant.

PLANT WHITE FLINT CORN

The following circular has been issued by the State Food Administration:

One of the serious difficulties encountered in carrying out the Food Administration program has been the problem of supplying substitutes for wheat flour. The price of our wheat is based on the Chicago price, less the freight from Utah to Chicago. Substitutes are produced and manufactured in Utah only to a very limited extent. This necessitates their importation with freight added, making the ratio of value between wheat products and substitutes equal to the freight both ways from eastern territory.

This project is designed for the purpose of supplying substitutes for wheat flour. White Flint corn can be successfully raised in Utah and lends itself readily to small acreages and garden plots.

It is estimated that there are approximately 61,000,000 pounds of white flour consumed in this state. To produce substitutes for 25 per cent of this, we must produce 15,250,000 pounds. It is very conservatively estimated, all kinds of land and conditions included, that we should produce 40 bushels of White Flint corn to an acre, which in turn will make 40 pounds of cornmeal to the bushel, or 1,600 pounds per acre. Therefore, 9,500 acres will produce substitutes for 25 per cent of our wheat consumption.

(Continued on page 14)

Treatment of Seed Grain

George Stewart, U. A. C.

The selection and the treatment of seed grain are of the utmost importance. In beginning, a grower should examine all readily available sources of seed, but from whatever source he obtains the grain, only that from high-yielding fields is worthy of consideration.

Only three sources are likely to be available: (1) seed saved particularly for planting on the farm or for selling as seed, (2) seed held by a neighbor or merchant for sale, and (3) quantities kept on the farm but not primarily as seed. The relative choice from these sources is in the order named. Let the present selection be made accordingly, but only after a rigorous examination of the sources.

Care should be taken to get seed wheat, oats, or barley all of one variety and unmixed with other grain. To clean seed, it should be run through a fanning mill. This will remove not only all small seed and pieces of straw, but also light or shrunken kernels. Beyond this point it is probably unwise to grade grain, because extremely large kernels are not necessarily better than medium-sized ones. In fact, the largest kernels are likely to have come from heads that bore but a few kernels. In this case the yield of the head would be smaller than that of a large head of middlesized kernels. Only the smallest of the plump kernels therefore need be cast out.

The seed, however, is not ready for planting. It should be analyzed by hand to make sure that it does not still contain undesirable impurities. The test sample should be separated into (1) good plump seed, (2) broken and shrunken kernels, (3) grain of other varieties, (4) weed seed, and (5) inert matter such as dirt, chaff, straw and other substances that will not grow. If there are many weed seeds, the grain should be either re-screened or rejected. If, on the other hand, the sample passes this muster it may be weighed and the percentage of each part computed. No more impurities should be tolerated than is absolutely necessary, and if the good seed does not represent 98 per cent or more of the whole, either a new lot of seed should be secured or this sample should be re-cleand rigorously.

Finally, all selected seed ought to be tested for its power to grow, that is, for its viability. This is done by putting it to germinate or sprout. A tin plate or pan should be half filled with sand or sandy soil, this wetted thoroughly, and then all free water drained off. Cloth or blotting paper should now be placed over the sand and pressed against it until thoroughly dampened. A hundred kernels should be put on the wet cloth and a plate or pan the same size as the first one inverted on top to prevent drying. Let the pans be placed in a warm, but not in a hot place, and care be taken to keep the sand moist and the plants from freezing. In a few days as the kernels begin to germinate, these may be counted, thrown out, and the number recorded. A good sample will show 98 or 99 per cent germination in a week. Two tests should be made and an average taken. This test completes the gauntlet, and when seed has successfully run it, that seed is ready for planting—save only the

(Continued from page 3)

Potato Seed Treatment

Dr. George R. Hill, Jr., U. A. C.

Potato diseases which are carried to the soil on the outside of the potatoes can be controlled by seed treatments if, in addition, the potatoes are planted on clean ground and the crop is well cared for. The principal diseases of this type found in Utah are Common Scab and Rhizoctonia. Practically all seed potatoes have enough of these disease to make seed treatment profitable.

Method of Procedure.

First: Use dormant potatoes if possible. Potatoes which have been sprouted will grow after the treatment, but dormant potatoes give stronger vines. Sometimes sprouted potatoes are slightly injured by the treatment.

Second: Cut a slice from the stem end of each potato and discard all tubers showing a brown ring or brown spots in the potato flesh. Disease on the inside cannot be killed by seed treatment.

Third: Sprinkle the potatoes with water or soak in water for twenty-four hours before treating. If the surface of the potatoes is kept moist, the diseases begin to grow and are much more completely killed by the treatment.

Fourth: Soak the potatoes for two hours in a solution of corrosive sublimate in a wooden barrel or trough. To make this solution dissolve four ounces of corrosive sublimate in thirty gallons of water.

Fifth: Spread the potatoes out and dry them as quickly as possible after the treatment. If they are sacked up and left wet, some of them may be injured. If the potatoes are thin-skinned, it might pay to rinse them in water before spreading them out to dry. The earlier in the season the treatment is given, the better.

CAUTION: Treated potatoes are poisonous. Do not eat them.

Note—In case a great many potatoes are to be treated, if clean potatoes are used and the sacks are kept out of the solution, corrosive sublimate may be saved by adding one ounce for each six bushels treated. Water should also be added to bring the solution up to the original volume. A solution kept up in this may be used fifteen or twenty times. Otherwise, it should be thrown away after the fourth batch of potatoes has been treated as it then will be too weak to kill the disease.

Sixth: Plant the potatoes (cut or uncut as preferred) after the soil gets warm, in land that has not been in potatoes for four or five years. Keep the potatoes well cultivated.

A SILVER MINE

Herbert Hoover tells a story of a young man who was busy cultivating a vegetable garden of his own. He had been digging for about an hour when his spade turned up a quarter. Ten minutes later he found another quarter. Then he found a dime. Then he found a quarter.

"By gosh," he said, "I've struck a silver mine," and, straightening up, he felt something cold slide down his leg. Another quarter lay at his feet. He grasped the truth: There was a hole in his pocket.—Exchange.

DAIRYING

THE FUTURE OF DAIRYING IN IDAHO

L. R. Cammack.

The future of dairying in Idaho will depend on the degree to which all interested in dairying will co-operate and to the extent that the following needs can be accomplished and difficulties overcome.

1. Better cows are needed on all our farms. There are two ways of getting better cows. One is by buying them but it is difficult to find good ones without paying too high prices. The safe and sure way is to improve the high grades by means of the scales and babcock tester, this permitting selection and breeding of the cows and heifers selected, to a good pure bred sire of the breed selected. This is the only efficient way to improve dairy production and until farmers and dairymen will co-operate and attempt to do this we cannot make rapid advancement. By this means we can get cows which produce twice as much butter fat from nearly the same feed as has often been done by progressive dairymen in our state.

2. The proper feeding of dairy cows is very important, since a cow uses one half of the feed she would consume for highest production, to keep up her body maintainance. Therefore, liberal feeding of the feeds best adapted for economical production of milk to cows having large feeding capacity for the breed is very essential. Insufficient feeding is the cause of poor financial returns only too often. A study of the proper feeds and quantities of each to feed is very vital. For Idaho alfalfa hay and corn silage with sufficient grain to make a balanced ration is an excellent ration. There are many substitutes and the amounts of each to feed may be varied to suit the local supply and individual conditions.

3. We need a more careful study of the problems and the introduction of more businesslike methods in our dairy industry. There are too many haphazard methods and too much guess work in our operations. This includes better management, better barns and equipment, more light and a system of ventilation in our barns, and also breeding cows to freshen in the fall when prices are highest and more time and attention can be given to dairying. The dairy cow needs a rest of six weeks before calving and the better condition the cow is in at that time the greater the production during the lactation period. The care of the calf and heifer is also important but time will not permit a discussion of that subject at this time. We need more silos and root cellars. I doubt if the average cow in Idaho will pay for the feeding of much high priced grain when we can use legume hay and a succulent feed such as silage or root crops, but that will depend on the individual conditions. The dairy cow is likened to a machine but she is more than that, in fact almost human and responds to care and good treatment, as does no other animal.

4. Quality in our dairy products is an ideal toward which we must always aim, since quality always commands a higher price. There are examples of this everywhere too numerous to mention. This applies to our farm butter, creamery butter, cheese of all kinds and to market milk. Uniformity of the product is another very essential point and the standardization of our dairy products will assist enormously to increase our marketing opportunities and bring higher prices While in Washington, D. C., I heard a prominent cheese buyer state that the most uniform and highest quality carload of cheese he had received on the New York market came from Idaho. This is encouraging but there is an opportunity for much improvement.

5. We must always work for a higher appreciation of the dairy products. Milk is the most nearly perfect food and most people do not appreciate the food value of milk, cheese and butter. For example, one quart of milk is equal to three-fourths of a pound of sirloin steak and other food in like proportion and the price is much lower. There is a substance in milk called vitamines, which is essential to normal growth and substitutes, especially to growing people, cannot be satisfactory.

6. A great opportunity for dairy advancement exists in the teaching to boys and girls, through the calf and butter clubs, a greater appreciation and desire for better dairying. The boys and girls will be better citizens when grown, appreciate farm life and prefer to stay on the farm instead of rushing to the city as soon as old enough, if we get them interested.

7. The utilization of by-products both in feeding the feeding stuffs that otherwise would not be utilized, to the dairy cows such as beet top silage, etc., and the feeding of skim milk, buttermilk and whey to calves, pigs and chickens, (if these products cannot be saved for human consumption), presents possibilities which need attention on nearly every farm. These and the preventing of losses in milk both directly and through spoiling or souring, are little things in themselves but in the course of a year and over the entire country would amount to a very great amount. Another loss is that of the manure, through carelessness and insufficient equipment for conserving it. The loss of time and energy also could be materially decreased by better arrangement and equipment in our dairy work. Time prohibits further discussion of this vital subject but the U. S. Government is particularly interested in the saving of the enormous quantities of skim milk and buttermilk, high in food value, for human consumption in the form of cottage cheese.

8. The prevention and eradication of all animal diseases and the prevention of the carrying of human diseases in milk is worthy of our best efforts. There is need of a law in our state whereby the farmer or dairyman will receive compensation for animals which are condemned because of tuberculosis. There is such a law in nearly all the states and we must try to get it here, because at present the Government is inspecting herds and finding some infected animals and to be efficient and fair to all, a small price must be given or the trouble will not be eradicated and dairying will suffer thereby.

There are other problems which will arise from time to time requiring the attention of dairymen and to accomplish the greatest amount of advancement and become efficient there must be a closer co-operation of all dairy interests. The dairy industry has many enemies but the greatest impediment comes from lack of co-operative efforts among ourselves.

The greatest good can only be brought about by the co-operation of all interested and perhaps the greatest good can be accomplished by the formation of local and sectional dairy associations. A representative of these could then be sent to the State Dairy Association and the larger associations, some of which exist and will be formed, and through these representatives all sections would get the benefit of the greatest dairy experts. It is only by associations and conventions of those interested in dairying that we can hope to make advancement and keep out of the ruts which we naturally get into when we do not keep eternally on the lookout for new ideas and higher ideals. They give us added enthusiasm and more progressive methods by their discussions. At this time of our national crisis we need greater efforts and increased ideas that we may do our part in making the world a safe place in which to live. An army must advance on its stomach, as Napoleon said, and the good dairy cow is doing a wonderful service to humanity. Let's do our best to help her by organization, co-operation and efficiency in our dairy work.

IF COWS COULD TALK

"Good morning, Mrs. Fawncoat. I hear that all the cows in the county are joining the 'Win-the-War' Club."

"Yes, Mrs. Starface; Secretary of Agriculture Houston says we must increase the production of butter-fat, and we cows have all promised to do our 'bit.'"

"There's one thing I want to say right now," spoke up Mrs. Black. "The farmers have got to back us up in this movement. I'm with the rest of you, heart and soul, but what chance have I got?"

"Why, Mrs. Black, what's the matter? You have a fine warm barn and plenty to eat and drink."

"Yes, I know; but what can I do as long as they use that old cream separator on the place? It never was any good, anyway, and now it wastes so much cream I'm just plain discouraged."

"Well you're not so badly off as some cows, where they haven't any cream separator at all."

"I don't know about that. There's a lot of cream separators in this county that are only 'excuses'—not much better than none at all. I tell you, Mrs. Fawncoat, with butter at present prices and the people at Washington begging every one to save fat, it's almost a crime to waste butter-fat the way some of these farmers do."

"That's one thing I'm thankful for," said Mrs. Fawncoat, "there's no cream wasted on this farm. We have a De Laval Cream Separator and everybody knows that the De Laval is the closest skimming machine."

"Well," said Mrs. Starface, "we never used a De Laval on our place until last fall and supposed one separator was about as good as another; but, honest, the De Laval is the first cream separator we've ever had that gave us cows a square deal."

P. S.

Of course your cows can't talk—but if they could you'd never have a moment's peace until you got a De Laval Cream Separator.

Remember that a De Laval may be bought for cash, or on such liberal terms as to save its own cost... See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

THE SAME OLD HOURS

She was a widow who was trying to get in touch with her deceased husband.

The medium, after a good deal of futile work, said to her:

"The conditions this evening seem unfavorable. I can't seem to establish communication with Mr. Smith, ma'am."

"Well, I'm not surprised," said the widow, with a glance at the clock. "It's only half-past eight now, and John never did show up till about three a. m."

SURE! THEY'D RECOGNIZE HIM!

A wild-eyed, disheveled-looking woman burst into the local police station. "My husband has been missing now for two days. I want you to have the canal dragged."

"If we should find the body, is there anything peculiar about him by which he can be recognized?" inquired the inspector.

The woman hesitated, and seemed at a loss for a minute. Then a look of relief slowly overspread her face.

"Why, yes!" she exclaimed, at last. "he's deaf"—Imp. @ Veh. Record.

They had lost their way in their new and expensive car.

"There's a sign, dear," she said to her husband, who got out of the car and flashed his flashlight on the board.

"Are we on the right road?" she asked.

POULTRY

HOW TO GROW TURKIES

D. R. Perkins.

For the reason that, after a few weeks of age, the turkey is self-dependent in the matter of feed, this fowl is likely to find great favor with poultry keepers who have the proper range for them. The turkey needs a larger range as compared with chickens and not every poultry keeper is favorably situated; consequently this matter deserves first attention. Overstocking the range will necesistate the expense of feeding and crowded conditions, unless the flock is given much constant care, and is likely to produce the various ailments peculiar to this fowl.

Small Flocks Thrive Best.

Large flocks, even on good ranges will produce smaller birds than smaller flocks; probably because the birds, feeding together as they do in large numbers, have to travel farther and spend more time in getting the same food they would secure if in smaller droves. Therefore, it is desirable, especially while the birds are growing, to keep the broods separate. Usually the best way to do this is to scatter the coops used for hatching over the range.

How Brood Coops Are Made.

These coops, three feet square and three feet high, are fitted with a removable roof and a 3x3x9-foot runway made of 1x3-inch lumber and 1-inch wire netting; a door is made in the far end of this runway. Another door for the coop is found handy for confining the hen to the nest. Some hens succumb to the lure of society and leave unfinished the work of hatching her eggs. The beginner may encounter difficulty in teaching the hen to recognize a new coop as a permanent home; but a hen that has been raised in one will ever after regard that place as a refuge and will voluntarily lay, hatch, and hover her young there.

Young Hens Best Mothers.

Eggs laid by the older hens will make the stronger poult, but the younger hens make the best mothers; by setting the young hens as soon as they become broody and breaking the older ones to secure a second clutch of eggs, one may get the maximum results.

Overfeeding Dangerous.

Practically all of the advertised commercial chick feeds are convenient and are good for the young; but care should be exercised in the matter of amount; do not overfeed at any time. Hot weather and overfeeding are decidedly a poor combination. As soon as the poults begin ranging, the ration should be reduced. Do not forget that grit should be just as available as food.

The Arch Enemy—Lice.

Lice are the arch enemy of the young; and once the poult becomes weakened by them he stands a poor chance of recuperating. The fact that the average person does not know where to look for the insects results in confusion and unnecessary losses. The first place one may find them is on the outside of the wings in depressions between the feathers. The wings should be examined carefully and by spreading them over the hand all hiding places will be revealed. Next the lice may be found in the longer body feathers. The first month is considered the danger period; after that a good dust bath should enable the poult to wage most of his own battles. Ashes make the most desirable dust.

When the young are able to sleep out of the brood coop, a pen or fold, with roosts three or four feet from the ground, is desirable. The ground in these pens, as well as any frequent ed by the turkeys, should be plowed under to minimize the danger of disease that might result from the presence of such refuse as collects from year to year.

The present prospects for the breeder are bright. Those who have wanted to delve in the secrets of the turkey business will never have a more favorable opportunity to learn.

GOOD EGGS BRINGS BEST RESULTS

It goes without saying that the incubator is the greatest machine the poultryman can have. And yet, some things the incubator cannot do. It cannot, for instance, take a lot of infertile eggs and turn them into bright, lively chicks. Neither is it possible for the best machine ever made to get out of the eggs laid by weak, poorly kept or badly mated hens, chicks that will stand the test of the active, strenuous life of the present time.

Good eggs, then, must be put into the incubator if we are to get good hatches. How shall we make sure beforehand that we have these good eggs? Here are some suggestions along that line: First, hens of known good laying qualities must be selected. I have spent a good many hours watching my hens a few weeks before they were given the job of laying eggs to be hatched. We have trap-nests to do this work and they are all right, if everything goes well; but it is a fact that somebody must trap the trap-nest to be sure of the best results. If we will take the time to find out which of our hens have been doing the work for the year and select eggs of their laying, we shall have taken a long step toward insuring a good hatch.

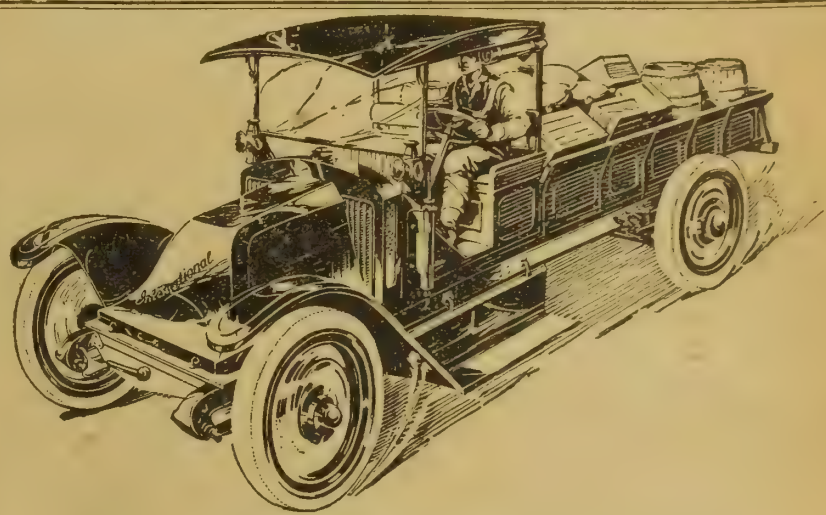
And then ,we want to know that these hens are thrifty now. In other words, past achievements are not conclusive evidence of good quality at the present time. Are the birds bright, active and hearty now, laying eggs right along and seeming to enjoy life? If so, all right. Take their eggs—providing they have been fed right and not kept in crowded houses. A good hen ought to be fed well, with food that is as fresh and healthful as possible, no decayed meat, no moldy grain, only good, sound hearty food. For the feed does have a bearing on the vitality of the egg.

I spoke of not overcrowding hens that are to furnish eggs for the incubator. There is more to this than some of us are in the habit of thinking. You take a hundred hens and shut them up in a house scarcely large enough for fifty and the result will be disastrous, not only to the productive capacity of the hens, but also to the fertility of the eggs laid. It is no economy to crowd too many hens into a given space. Better keep fewer hens and give them a good roomy house, or else build more houses.

What does it do to a hen to hamper her free actions in this way? In the first place, it deprives her of needed exercise. Vigor depends in large measure upon effort. Where by reason of inaction the muscles become weak and lax, the bird soon begins to sag down, sit long on the roost, show a pale comb and in other ways manifest signs of inefficiency. Then, too, the digestive apparatus suffers. We are in these days feeding highly concentrated food. We must to get results. But what use is it to pay out good money and work hard to provide costly food for hens that cannot digest it properly? To be at their best, hens need a chance to run around, to dig ing good clean litter and to be really happy. That means plenty of room and congenial company. Every bird that is always on the scrap should be taken out. Her room is better than her company.

Only a word about the head of the flock. He should be the best we can get—young, handsome, well-bred and on his job. Better go ten miles and pay a golden eagle for a good male than to use a poor one.—E. L. Vincent.

VERMONT FARM MACHINE CO.
Factory at Bellows Falls, Vt.
Salt Lake City, Utah. Box 964.
Branch Offices—Portland, Oregon; Oakland, California; Chicago, Ill.



IF your business keeps two or more horses busy, there's just one reason why you are not using an ***International motor truck:***

You Don't Know What It Will Do for You!

That's true. If you knew how much actual cash it saves, you would buy an ***International motor truck*** because you could hardly make a better paying investment. If it added only fifty cents a day to your net profits—that would be ***better than 10 per cent*** interest on the price of a model H.

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THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

With all our rush for greater production we must not forget to conserve our own health. Keep well, your health should come first.

Weed out the poor cows, but do not sell a good producer. Now is a good time to increase the number of good dairy cows.

Have you bought your share of Liberty Bonds yet? Utah has "gone over the top," but have you done your part? There is yet time. Every farmer should own one or more Liberty Bonds.

There is time yet to plant many kinds of vegetables, a good garden will help to reduce the cost of living. See that every piece of ground, although it may be small, is producing something.

The farm paper is looked upon as one of the greatest helps in the work of production. The farm paper serves as a medium by which the government can reach the farmers of the nation. This is one reason why every farmer should be a reader of a farm paper.

Do not overlook the proposition of increasing the livestock on your farm if conditions will permit. The demand seems sure to increase for all kinds of livestock. Feed your haye and grain to livestock and sell the finished product.

From present out look Utah will beat 1917 in production. It was a very favorable fall and winter for fall plowing. The spring work has been well taken care of and if climatic conditions are favorable we will have a wonderful crop this year.

One of the problems for the hog raiser this year is to provide cheap feeds. Good alfalfa pasturage with a little grain, will be one of the best helps. You may find it profitable for the hogs to harvest some of your crops. Every man must work out his own plans. The use of cheaper feeds will increase your profits.

HAVE A PLACE FOR TOOLS

Recently when visiting a successful farmer I was impressed with the way he took care of his farm tools. The tool house was built of lumber and did not cost but a few dollars but inside every thing was in order. The tools and materials were kept in their proper places. There was a place for nails, bolts and screws and they were not all mixed up together. The farmer could go to the tool house and in a moment find what he wanted. There was no time lost in hunting for anything. There was a place for every tool used on the farm and it was returned when the work was completed. This tool house saved its cost in many ways. Time is worth money, more so today than ever. A place to put your tools and material away is a money and time saver.

SAVE THE LITTLE CHICKS

It is the little chicks that grow to be large ones. Care must be taken of them. One expert says that 40 per cent of the chicks hatched on the farm by hens are lost through neglect to confine the hen. Baby chicks should not be allowed to wander off through grass with the hen hunting food. Keep the old hen confined and feed them properly. Save the little chicks for they will mean meat in the fall. We can not have the increased production of poultry we are asked to grow unless we take better care of the little chicks. Watch them until they get a start. Proper feed and careful attention given to the little chicks will repay you many times over.

USE OF POTATOES TO SAVE WHEAT

Use of potatoes to save wheat is demanded by the present situation, because greater quantities of wheat must be conserved, for the use of the American forces and the Allied armies in Europe, and also because an unusually large supply of potatoes remains in the hands of the growers. Great quantities of these will go to waste unless they are used even more freely and in a greater variety of ways than is customary in American families.

With the basic price of wheat fixed as at present, flour is about $5.50 cwt. If, then, potatoes can be obtained at 1 cent or 1¼ cents a pound, it is an economy as well as a war service to use potatoes as a substitute for flour in bread making. Even at 3 cents a pound the potatoes cost no more than flour.

FARMING FOR OTHERS

We may not be working for others, but, if every farmer could be impressed with the thought that he is not farming for himself alone, there would be better and more productive farms. When a man knows that all his neighbors are watching him and are ready to follow his example when he does something worth while, it puts him on his mettle and encourages him to do his best. In reality every farmer's methods and those who are progressive are not slow to take advantage of the practices found to be profitable. It is only the man, who is set in his ways and hates to get out of the rut for fear he will skid, who does not avail himself of advances made in his community.

CO-OPERATIVE BULL ASSOCIATIONS.

So many farmers with just a few cows say they can not afford to own a good pure bred sire. The answer is to join with his neighbors and form a co-operative bull association. In this way a man with limited means and only a few cows is able to have the benefits of a good sire. Too many are using a cheap scrub bull and there is no longer an excuse for doing it.

Joint ownership of bulls, both for dairy and beef herds have proven a success. The government now have men who are making a specialty of this kind of work—organizing bull associtions —why don't you invite them to come to your town and help organize one of these associations. There is no expense for this help, the government realizes the importance of it and is glad to help any community.

CHEERFUL PEOPLE WIN

"There is very little success where there is little laughter. The workman who rejoices in his work and laughs away his discomfort is the one sure to rise" said Andy Carnegie.

Imagine, if you can, a world without smiles, laughter and sunshine, who would want to live in such a one. The cheerful person is always the favorite it is just as true on the farm, in the office, or in society.

Cheerful people can do more work and will always win over a grumbler or the too sober ones. To be able to laugh away trouble is a wonderful thing for anyone.

The power of cheerfulness nearly anyone can have, it must be cultivated however, to retain it. What a power in this world is cheerfulness. "It is the song you sing and the smile you wear that makes the sunshine everywhere."

MORE ANIMALS ON THE FARM.

More animals are needed on our farms. They are needed now to help produce food and they will increase the profits of any farmer who will raise them economically. Animal husbandry will be more important in the economic plan of feeding our nation and our allies, than it has been in the past. If anyone knew just which crop to specialize on, he might make more for a year or two than to practice a good rotation of crops.

With farm animals you can market your hay grain and other crops with a better profit and at the same time keep up the fertility of your land.

We must look ahead, for this country must thrive and our people prosper after the war. Any farmer who so manages his farm, as to keep plenty of livestock of the better quality will have reasons for congratulating himself. There is need now for more livestock and it looks as if there will be a greater need for a year or two following the war.

INTENSIVE FARMING

We often hear people talking about intensive farming. Some seem to have a wrong idea of what it really means.

The term intensive farming is considered by some farmers to mean the growing of special crops and garden truck. This is not necessarily so. It is true that in the growing of garden crops the ground is made to produce more intensively than is the case with the ordinary farm crops, but intensive farming can be practiced with any crop. It means in reality doubling your crop or cutting your acreage and growing as much as you did before. Instead of spreading out over a large area and producing a certain yield, intensive farming means producing the same yield on a smaller area or practicing such efficient methods as to double the yield from the same area. In other words, raising more on fewer acres really defines the term.

BETTER CARE AND USE OF IMPLEMENTS

Some people have not taken seriously the suggestions of our Government and implement dealers about conserving our machinery. A few weeks ago farmers were asked to order repairs and extras and many acted upon the suggestion. Others did not and now they are up against it, when they want something in a hurry. Already there are some who want to blame the dealer because he can not make quick delivery. Many of the implement factories are called to fill government contracts, wagons by the thousands, tractors by the hundreds and other machinery are being made for war service and factories cannot work for farmers and the government, the natural result will be a shortage of farm machinery and implements.

Raw material is going to be short, there is use for all the iron, wood and steel, of course manufacturers are going to have their share for the sake of increased production of food.

Do not wait until you are ready to use a tool before you buy it, you can look a head and anticipate your needs. Our suggestions is to make better use of all machinery, take better care of it. Make it do just a little more service. Repair any machinery, implement or tool that can be made to work. Be a little more careful, give them a little better attention. Keep them well oiled, allow no bolt to work loose. For your own profit and as a real need at this time take better care of your farm implements and machinery.

POULTRY

FEEDING BABY CHICKS

Byron Alder, Poultryman, U. A. C.

Since there has been a limitation aced on the amount of wheat that ay be fed to chickens the problem feeding seems to be greatly in-eased. We are asked to save the heat and prevent a very serious ndition in our food supply. It is the atriotic duty of every one to use her grains in feeding with not more an 10 per cent of wheat in the feed d to eliminate that where possible his can be done without any serious sults yet it may mean an increase a few cents in the cost of produc-on. Produce more poultry and at e same time save the wheat. We n do both. The following sugges-on may help in the feeding of baby icks.

Chicks should not be given feed of y kind until they are 48 to 60 hours d. Chicks shipped or bought from atcheries are ready for feed when ceived. The first feed should be ven sparingly and often. Feed on clean board with a cleat around the ge to prevent waste or on a piece burlap stretched and pegged to the ound at the corners, so that the icks will get nothing except that hich is fed. Feed 5 or 6 times a y or about every 2 or 2½ hours.

Start with a drink of sour skimmilk buttermilk. Keep this before them each feeding the first week. The st four or five days feed a mixture rolled oats (oat meal) 2 parts, rub-d fine, and wheat bran 1 part, with light sprinkling of fine grit or clean arse sand. Where the milk is not ailable hard boiled eggs rubbed up e, should be added at the rate of out two eggs a day for each 100 icks. A layer of dry alfalfa leaves, opped clover, or dried lawn clip-ngs should be scattered in the ooder and should be cleaned out d a fresh supply added every 2 or days. Sand, shavings, etc., should t be used on the floor the first 2 or weeks or the chicks may eat enough it to cause serious injury.

About the 5th day add a little crack-d feed or screenings and cracked rn, gradually reducing the amount oat meal and bran. After the 7th y leave out the bran in the above ixture and keep a dry mash in a feed pper always available to the chicks. his mash should be made of bran 4 rts, shorts 2 parts, and chopped bar-y or oats 2 parts. When milk is not ailable stop feeding the eggs and d 1¾ parts beef scraps to this dry ash.

Milk or water should be kept before e chicks at all times from the first. here milk is easily obtained use this one the first week and milk and ater after that time. Keep the milk ssels clean, dirty rancid milk may just as injurious as good clean sour lk is beneficial.

After two weeks the oat meal may eliminated and a scratch feed ven twice a day composed of 1 part heat, 5 parts chopped barley, and 4 rts chopped corn. Keep dry alfalfa, rit, and a little fine charcoal always fore them.

When the chicks are 3 to 4 weeks d get them out in the orchard or ve them free range and plenty of rowing food where possible. Chop-ed oats, chopped barley, and the dry ash above should be kept in feed oppers always available. The scratch ed can be left out as the chicks will et plenty of exercise while foraging about.

Avoid sloppy or wet feeds. Keep the brooder, litter, and chicks always dry. Wet litter and feeds or dampness in the brooder are perhaps the worst enemies the chicks could have. Don't put chicks of different ages together in the same brooder. Don't keep the chicks in the same runs as the old or mature stock. Feed regularly all the chicks will clean up but don't over-feed. Keep the brooder clean and free from mites.

FEED HENS WAR RATIONS

Byron Alder, Poultryman, U. A. C.

Chickens as well as people must eat less wheat. The United States Food Administration has passed a ruling that not more than 10 per cent of the feed for chickens can be wheat. In view of the high prices of corn, barley, and other grains this may mean a slight increase in the cost of feeding. With a greater use of bran, shorts, alfalfa, skimmilk, and buttermilk the increase would be but little if any. But this is not all; we are expected at the same time to produce more poultry. If the citizens of Utah will meet this request as they have all others made by the Government we can do both.

Wheat or any other grain is not the most important part of the ration for laying hens as shown by the following: The Purdue Agricultural Experiment Station fed four different lots of pullets a ration made of corn 2 parts, wheat 2 parts, oats 1 part, bran 1 part, and shorts 1 part. Each of the four pens were fed all they would eat of this ration with plenty of grit, water, charcoal and some green food. The hens in Pen 1 were fed only this ration. Those in Pen 2 were given all the skimmilk they would drink in addition to this grain ration. Those in Pen 3 had about ¾ of one part of meat scraps added to the ration given Pen 1. Pen 4 got Fish scraps instead of meat scraps as given Pen 3. All other conditions were kept the same in the four pens. The experiment was run for four years. The average production was as follows:

Each hen in Pen 1 averaged 32.5 eggs a year or 10c less than cost of feed.

Each hen in Pen 2 averaged 135.4 eggs a year or $1.65 more than cost of feed.

Each hen in Pen 3 averaged 135.0 eggs a year or $1.56 more than cost of feed.

Each hen in Pen 4 averaged 128.0 eggs a year or $1.56 more than cost of feed.

Feed Some Meat Food or Milk, It Pays.

The U. S. Department of Agriculture reports the results of feeding a ration containing no wheat. "Thirty Leghorn pullets to which this ration was fed for 1½ years produced an average of 147.3 eggs per hen for the pullet year." This higher production was not because wheat was omitted but in spite of that fact. The ration used was as follows: A scratch mixture made of 2 pounds of cracked corn and 1 pound of oats. A dry mash made of 3 pounds of corn meal and 1 pound of beef scraps.

Under Utah conditions where corn is not readily available, barley could be substituted with perhaps equal results. Especially when bran and shorts, the feeding of which is not limited, are added to the mash. A good ration for Utah is as follows:

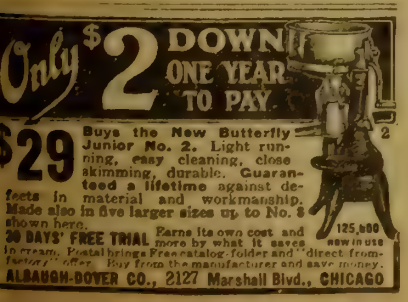
Scratch Feed.

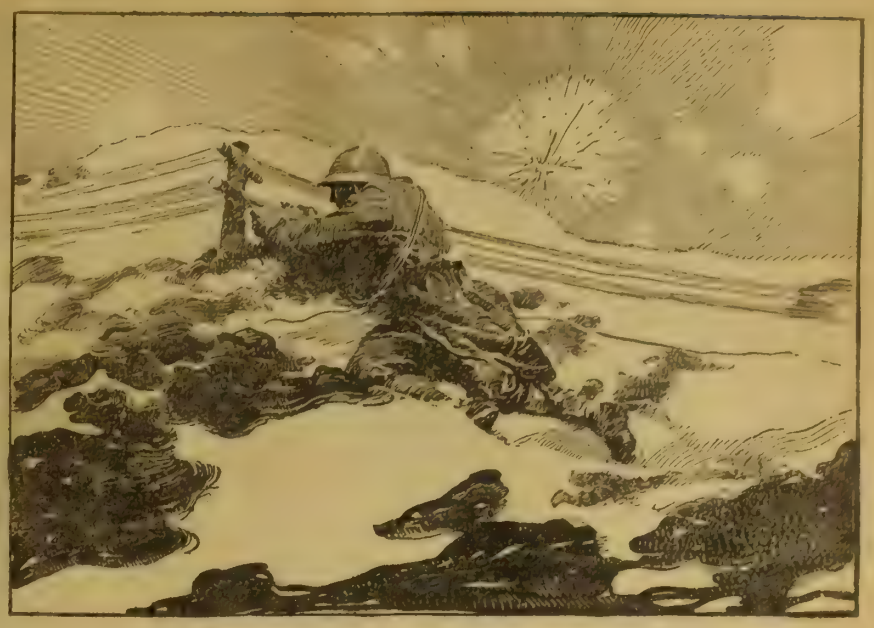
3 pounds corn, 1 pound barley, 1 pound oats (heavy white), 1 pound feed wheat. Feed this in a clean dry litter all the hens will clean up.

Dry Mash.

4 pounds bran, 2 pounds shorts, 2 pounds chopped barley or oats, 2 pounds beef scraps. Keep in a feed hopper always available.

Fresh water, dry alfalfa leaves, grit, preferably oyster shell, and charcoal should always be available to the hens. Where corn is too expensive it can be omitted and the consumption of barley materially increased by cooking a little each day. This should be fed at noon when cold just what the hens will clean up. Where skimmilk or buttermilk is available so that the hens can have all they will drink the meat scraps can be let out of the mash. Milk or meat scraps is very necessary.





The Spirit of War Service

Alone in the midst of war's desolation, the telephone lineman crawls to mend the broken wires.

On all sides the thunder of artillery; in the air bursting shrapnel.

He faces danger with that unconquerable spirit of war service which permits him to think only of maintaining the telephone connections.

The safety of the troops depends on these lines of communication, often used for the sentries' warnings, the carrying of official commands and the summoning of reinforcements.

In a dark hole hidden among sparse brushwood are the telephone operators, some of whom have been for months in their damp cave ceaselessly swept by shells.

And they are admirable, all these heroes of the Signal Corps, whether serving in darkness or in the all too bright light of day.

The spirit of war service, over here as well as over there, furnishes the nerves, the endurance, the morale—the stuff that wins war.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES
One Policy *One System* *Universal Service*

Dependable Seeds

What is the product of your garden worth? That depends on several things, the soil, the season, care during growth, but most of all on the seeds used.

The cost of the seed is very small compared with the value of the crop you raise. That's why Quality is more important than price when you buy seeds.

Our catalogue tells all about Vogeler's Purity Seeds, the best that money can buy. Your copy is ready, better send for it today.

Vogeler Seed Co.

SALT LAKE CITY, UTAH.

HOME

EAT RHUBARB FOR HEALTH

A Variety of Ways Given for the Preparation of This Spring Food.

Hortense White, U. A. C.

Rhubarb time is here. There's nothing better for you in the spring. Rhubarb is rich in acid and mineral and therefore is excellent as a blood purifier. Here's a rhubarb recipe for every day in the week.

Monday

RHUBARB PRESERVE

1 quart rhubarb, cut in small pieces.
3 c. sugar.
1 c. water.

Boil the sugar and water until the syrup becomes brittle when dropped into cold water. Drop the rhubarb into the boiling syrup and cook the mixture until it is thick and clear. Because of its strong concentration of sugar, this preserve does not need to be sealed, but the jars in which it is placed should be covered to prevent dirt from entering.

Tuesday

RHUBARB JUICE

Cut the rhubarb in small pieces, add just enough cold water to cover it, and simmer it until it is very soft. Strain the juice through a jelly bag. To each quart of juice, add one cupful of sugar. Heat the juice until the sugar is dissolved, skim it, and bring it to the boiling point. Pour it into sterilized glass jars, and seal them. The juice may be used in making beverages, jellied desserts and pudding sauces.

Wednesday

RHUBARB AND APPLE CONSERVE

2 c. sugar, 2-3 c. water, 2 c. rhubarb, cut in small pieces, 1 c. apple, sliced, 2-3 c. English walnuts, chopped.

Cook the sugar and the water until the syrup forms a thread when dropped from a spoon. Add the fruit and simmer it until it is clear. Add the nuts and turn the mixture into jelly glasses. Seal them.

Thursday

RHUBARB AND APPLE BUTTER

2 c. stewed rhubarb, put through a strainer, 3 c. sugar, 1 orange, juice and grated rind, 2 c. stewed apples, put through a strainer.

Combine the ingredients and cook the mixture until it is smooth and clear. Pour it into glasses or jars and cover it.

Friday

RHUBARB AND PRUNE CONSERVE

1 quart rhubarb cut in small pieces, 3 c. sugar, 1 c. prune pulp, 1 lemon, juice and grated rind, ½ c. English walnuts, chopped.

Cook the rhubarb, the prune pulp, and the sugar until the mixture is thick. Add the lemon juice and rind and the nuts. Turn the marmalade into clean glasses and when it is set, seal it.

Saturday.

RHUBARB SPONGE

2 t. granulated gelatin, ¼ c. cold water, 1 c. milk, 1-3 c. sugar, 1 c. rhubarb sauce, whites of two eggs.

Soak the gelatin in the cold water until it is soft. Scald the milk and dissolve the sugar in it. Pour the hot milk over the gelatin and stir it until the gelatin is dissolved. Set the mixture in a cool place until it begins to stiffen. Then beat it with an egg beater, add the rhubarb, and fold in the well beaten whites of the eggs. Turn the mixture into a mold that has been rinsed with cold water, and chill until it is set. Serve with whipped cream.

Sunday.

RHUBARB PUFFS

1 c. flour, 1 t. baking powder, ¼ t. salt, ¼ c. sugar, ½ c. milk, 1 t. melted butter, 1 egg, beaten, rhubarb sauce.

Combine all the ingredients, except the rhubarb, in the order given, and beat until smooth.

Grease individual molds or cups and into each put 3 t. of rhubarb sauce and 1 t. of batter. Steam for 20 minutes.

WHEATLESS LOAF BREADS

Here are a group of successful wheatless breads made with baking powder. If you wish to experiment, try these combinations in yeast breads. Ground oats combine successfully with any of the substitute cereals in making hot cakes, muffins or bread. To prepare ground oats, run rolled oats through the food chopper.

Corn Flour and Oat Bread.

¾ cup liquid, 4 tablespoons fat, 4 tablespoons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 1 1-3 cups corn flour, 1 cup ground rolled oats.

Rice and Barley Bread.

1 cup liquid, 4 tablespoons fat, 4 tablespoons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 1 cup rice flour, 2 cup barley flour.

Corn Flour and Buckwheat Bread.

1 cup liquid, 4 tablespoons fat, 4 tablespons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 1 1-3 cups corn flour, 1 cup buckwheat.

Barley and Oat Bread.

1 cup liquid, 4 tablespoons fat, 4 tablespoons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 2 cups barley flour, 1 cup ground rolled oats.

Mix the melted fat, liquid, syrup and eggs. Combine the liquid and well mixed dry ingredients. Bake as a loaf in a moderately hot oven for one hour or until thoroughly baked.

Nuts, raisins or dates may be added if desired.

"CORN FLOUR-PLUS" BISCUIT

Corn makes a beautiful white flour, delicate enough for a perfect sponge cake or, what is more to the purpose, a fine biscuit flour that browns like French pastry. Corn flour combines well with any of the substitute cereals in making hot cakes, muffins and biscuits.

Corn Flour and Wheat Biscuit.

2 cups corn flour ¾ cup wheat flour, 6 teaspoons baking powder, 1 teaspoon salt, 3 tablespoons fat, 1 cup milk.

Corn Flour and Buckwheat Biscuit.

1 1-3 cups corn flour, 1¼ cups buckwheat, 6 teaspoons baking powder, 1 teaspoon salt, 3 tablespoons fat, 1 cup milk.

Corn Flour and Rolled Oats Biscuit.

1 1-3 cups corn flour 1 cup ground oats, 6 teaspoons baking powder, 1 teaspoon salt, 3 tablespoons fat, 1 cup milk.

Sift dry materials together. Work in fat well. Combine liquid and dry material, handling lightly. Roll or pat one-half inch thick and cut as biscuit. Bake in hot oven. The ground oats in the last recipe are prepared by putting rolled oats through the food chopper. All measures are level. In measuring the baking powder, level the spoons with a knife. Drop biscuit require less baking powder than rolled biscuit.

MILK MAXIMS

Arranged by Blanche Cooper.

"Public health is the foundation on which reposes the happiness of the people and the power of a nation. The care of the public health is the first duty of a statesman."—Disraeli.

Milk Maxims.

The quality of the milk supply bears a closer relation to the public health than does that of any other food.

Milk is nature's most valuable food. It contains the food substances which build body tissues, and regulate body processes, and yields energy for the body's activities. The food substances of milk are in the form most easily adapted to the use of the body.

Milk proteins build muscular tissue. Milk sugar nourishes the brain and nerve tissues.

Milk fat is specifically growth promoting.

....Milk calcium and phosphorus build teeth and bones.

Milk is liberal in its supply of min-

It takes the fuss out of breakfast

THANKS to Ghirardelli's—breakfast-making is not the job it used to be. There's no fuss—no muss—no time lost.

If a chocolate pot does not happen to be handy—you use an ordinary stew-pan. It takes but a minute or two. And then—you have the most delicious of all food-beverages steaming hot, ready to serve.

An ideal blend of ideal foods—cocoa and pure sugar—Ghirardelli's supplies the maximum nutriment at minimum cost. Always keep a can on hand.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

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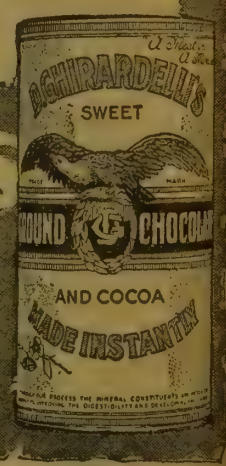
Since 1852 San Francisco

Ghirardelli's Ground Chocolate



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For entertaining friends---for the family---with meals or between meals---any time! There's no beverage that quite "hits the spot" as does BECCO---the true, pure food beverage.

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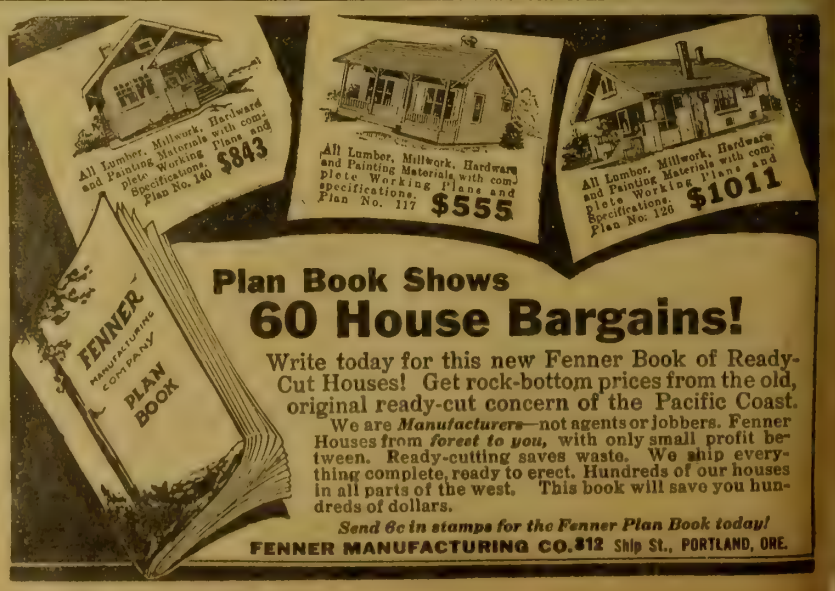

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eral salts that regulate the body processes.

Milk is probably the richest food source of the so called "vitamines" dietary factors essential to growth and health.

Milk is an important source of energy.

Milk has no waste, requires no preparation and is easily digested.

Milk is an economic food.

Milk at 12c a quart is a cheaper source of energy, protein and mineral salts than oysters, eggs, fowl, halibut, sirloin steak and dried beans at present prices in Salt Lake City.

One quart of milk is equal in energy value to:

48.6 ounces oyster solids
8 or 9 egg, 11 ounces fowl
24 ounces halibut
11 ounces sirloin steak
7 ounces dried beans

To supply energy at equal cost when milk sells at 12c per quart, eggs must sell at 16c a dozen and sirloin steak at 17c a pound.

One quart of milk is equal in protein value to:

19 ounces of oyster solids
4 or 5 eggs
8.6 ounces of fowl
8 ounces of halibut
7 ounces of sirloin steak

To supply protein at equal cost when milk sells at 12c a quart, eggs must sell at 30c a dozen and sirloin steak at 28c a pound.

Skimmed Milk is a richer source of protein than whole milk.

Milk is the richest food source of lime (calcium) and its absence from the diet or limited use in the diet may prove to be an expensive procedure as well as an unsafe one.

One quart of milk contains 1.6 grams lime.

One dozen eggs contains .53 grams lime.

One pound Lima beans contains .44 grams lime.

One pound sirloin steak contains .098 grams lime.

One pound halibut contains .055 grams lime.

One pound chicken contains .034 grams lime.

Milk contains in quantity that can be eaten and digested adequate lime for normal growth and health.

Milk should be supplemented by foods rich in iron, eggs, egg yolk, spinach.

Milk to be a safe food must be clean, fresh and pure.

The Milk supply can be made safe through a correct system of education and supervision.

The Milk supply, equally, with the water supply, should be under an effective system of municipal control.

Municipal Control of the Milk Supply should have for its aim the education of producer, distributor, manufacturer and consumer to the value and care of milk and milk products.

Milk is an indispensable food in the individual and family diet.

CANNING OUTFITS PAY FOR THEMSELVES
Be Economical! Be Patriotic! Let your garden pay for most of your next winter's living.
BUTLER CANNING OUTFITS
Are simple, economical, practical. Operate easier and quicker than old-fashioned methods. Made for home, club or commercial use. Many were disappointed in not getting an outfit last year. Expect bigger demand this season. Be safe, investigate now. Write nearest factory for free catalog and prices. Good Deal for Live Agents in Open Territory.
Butler Manufacturing Co.
689 Butler Bldg. Kansas City, Mo. 896 6 Ave., S. E. Minneapolis, Minn.

IRON AGE
Farm, Garden and Orchard Tools
Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The
IRON AGE Potato Planter
solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.
No Misses
No Doubles
Bateman M'f'g Co., Box 83 B, Grenloch, N.J.
UTAH IMPLEMENT & VEHICLE CO.
Salt Lake City, Utah.

SPARK PLUG SENSE

B. H. Wike.

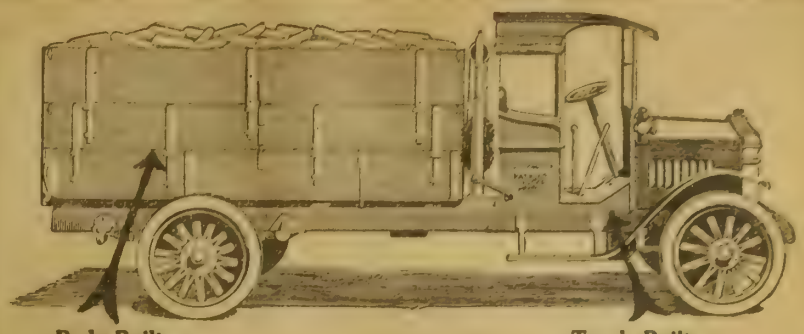
The modern gas engine depends so much upon the common spark plug that scarcely any other form for creating a spark is considered. The "make and break" system is still used to some extent, but the plug takes the lead at the present day. There are many curious ideas concerning this little contrivance of metal and porcelain in regard to its purpose and the leave that is taken to frequently overtax it. Spark plugs are little more than a shell of metal threaded for screwing into a hole in the cylinder casting, and inside of this shell there is a porcelain core which contains a core of its own of metal. When this assembly of shell with its core of porcelain and other parts are inserted into the cylinder hole it is then capable of performing its functions of firing the charges of gas within the combustion chamber. It is the leap of the electric spark across the little gap of the spark plug that causes the gas to explode when the spark goes through. This gap should be about as wide as a dime is thick.

There are several things attached to the operation of a gas engine that contribute for and against the efficiency of a spark plug. It is the owner's business to see that the plug is kept in the best possible condition at all times. As many causes for misfiring are due mostly to the spark plug when something else is blamed it is proper to know what usually causes a spark plug to go wrong. There are really two main things that cause them to shirk, and these are either or both the formation of carbon or a cracked porcelain. Either one of these will make a motor limp, and are hard on the mechanical parts if ignored for too long a time as well as wasteful of gasoline. Carbon formations will gather from two causes; the fuel and from oil working up past the piston rings. The more refined the fuel the less trouble usually with plugs on that account. Cleaning the plugs at regular intervals will correct the trouble so far as these causes are concerned, provided the plug is not already injured by a cracked procelain or broken electrodes. The plug should be taken apart for cleaning and a brush and gasoline used to cut the carbon deposits. Even a fine crack that can hardly be seen with the naked eye will allow the current to short circuit through it and so forestall the intentions of ignition. This is taken into account by the fact that an ignition current is several hundred volts strong and will go where many times one would not be suspecting it would go, and so finds it easier to go a short, unobstructed way than it does to go the path laid out for it. This current must necessarily be of a high voltage in order to get the tension or strength to jump the plug gap. If the current comes from a battery, the coil transforms it to the strength needed. A high tension magneto needs no coil to transform the current for ignition purposes.

One of the necessities a car owner should carry is at least two or three extra spark plugs. Moreover, it does not pay to be too economical in buying cheap plugs for the best are none too good. If you ignore this truth you will be apt to be paying out at both ends; which means that one cheap plug soon calls for another Worthless plugs, by their liabiliy to go wrong without apparent cause except the cheap construction, are gasoline eaters. They waste gasoline by not being able to fire each charge completely and so comes the lack of power. It is hard to realize the enormous pressure that is instituted against the spark plug at the moment the explosion occurs. At any rate it has to be so in order to send the piston on its working stroke downwards. In view of all this the spark plug needs to be of a sturdy construction and made of materials that will stand this pounding and heat.

———o———

Be sure and read the advertisements, it will pay you.


Body Built for Country Loads
Truck Built for Country Roads

Patriot Farm Truck

The farmers of America now have what they have been waiting for—

A truck built for farm conditions and farm work.

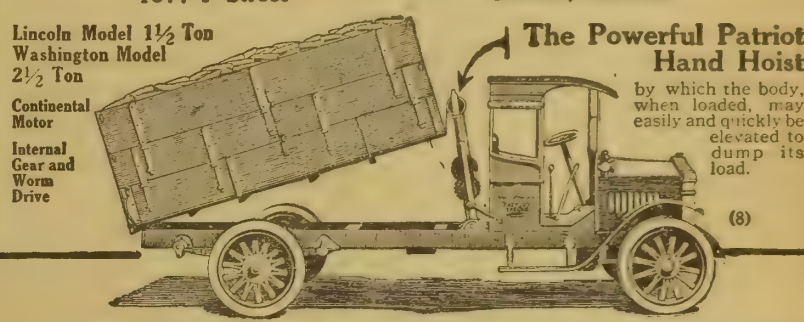
No intelligent farmer questions the superiority of truck service over horse service for general transportation. The only question has been whether the trucks built for service over the paved streets of cities, with bodies designed for city haulage, were the proper trucks for farm use, and most farmers have felt they were not.

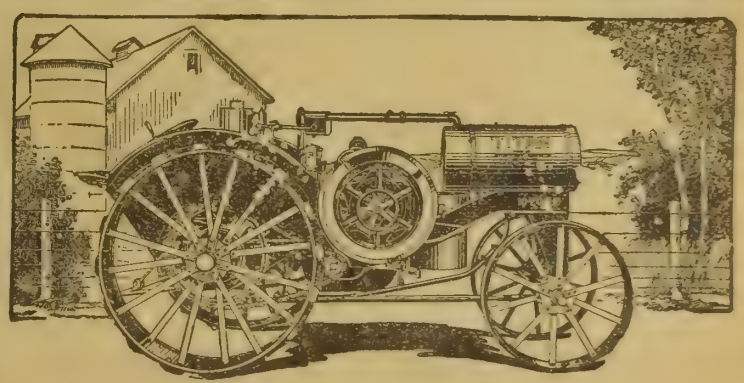
The Patriot Farm Truck affords the farmer economy, convenience and certainty of transportation of his crops and live stock.

The Patriot will double or treble your load capacity and cut the time of delivery in two. It makes you master of weather and roads, and cuts the distance to your market town to one-fourth.

The Patriot will increase the value of your farm $10 an acre by bringing larger and better markets within your reach. It will pay for itself within one year. Write for full information and prices.

HEBB MOTORS COMPANY
Manufacturers of Patriot Farm Trucks
1377 P Street Lincoln, Nebraska





International Tractor Service

WISE tractor buyers insist upon these three features in their machines: The tractors must operate on the cheapest fuel a farmer can buy. They must be so simple that the farmer or his help can learn to operate them. They must do enough good work in the field and at the belt to more than pay for themselves. **International, Mogul** and **Titan** kerosene tractors meet all three of these demands.

International Harvester tractor owners get, through our 89 U. S. branch houses, a service that enables them to keep their tractors going whenever there is work for them to do. It includes necessary instruction in the care and handling of the machines, both before and after purchase; the supplying of repair parts as promptly as circumstances will allow; and the furnishing of expert help for the more difficult repairs.

Keep this service feature in mind when you come to buy your tractor. It applies equally to our **Mogul 10-20-h. p., Titan 10-20-h. p.** and **International 15-30-h. p.** tractors. It will be difficult for us to furnish your tractor as soon as you want it. The demand is hard to keep up with and shipping facilities are very much handicapped. Send for catalogues now. Be ready for the heavy rush work of early spring.

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah San Francisco, Cal. Spokane, Wash.

Meet High Cost of Auto Supplies

With the increased cost of automobiles and supplies, motorists are giving more attention to lubrication in order to check deterioration of their motors. As a result, there is a bigger demand for

VICO Motor Oil

Where motorists formerly used "any old oil," they now insist on the correct consistency of "Vico," because it is refined especially for cars driven in this climate. Makes good at all temperatures.

Utah Oil Refining Co.

Salt Lake City

Windsor Hotel

LOCATED IN THE HEART OF THE CITY

225 So. Main St.

125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.

FREE BUS SERVICE To and From all Depots

All Cars Stop in Front of Our House

A home like place for local people where you will meet friends.

Good Rooms 75c, $1 and up.

The Windsor Hotel Co.

M. A. Scott.

GUARD AGAINST OAK POISONING

It has been definitely proved that excessive feeding on oak leaves and buds causes stock poisoning. Reports of stock poisoning from Colorado, Utah, Texas and New Mexico were investigated by specialists of the U. S. Department of Agriculture and a study was conducted in certain districts where oak is the principal form of vegetation. It was found that the poisoning usually occurs in early spring before grasses and other suitable forage have developed sufficiently to furnish a supply of feed. The Department specialists recommend, therefore, that cattle should not be turned on the summer range too early or that they be provided with some other feed until the grasses have a good start.

The losses from oak in America seem to be confined to cattle, although there have been unconfirmed reports of the poisoning of sheep. No cases are known among horses. The most noticeable symptom is extreme constipation; the affected animal becomes guant, its coat rough, its nose dry and cracked. The attitude is peculiar, the head being extended forward. Appetite is lost and weakness increases until the case is ended by death. These symptoms appear after rather long feeding upon the oak, not less than about a week, and the animals may die in two weeks or in some cases linger for an indefinite period.

Treatment of Oak Cases.

While affected animals may be relieved by treatment (Epsom salt in one-pound doses or given in small quantities in the drinking water), the sensible treatment is to prevent the trouble by proper feeding. It has been found experimentally that if a small quantity of hay is added to the daily ration no harm results from oak feeding. As small a quantity as three pounds of alfalfa hay daily with oak will provide a maintenance ration for a two-year-old-steer. Oak may be considered a good forage when other feed is provided. In fact, cattle in Utah frequently come off the oak ranges in the fall in fine condition.

There is no doubt that in some localities cattle are admitted to the summer range too early. They frequently pass into the oak zone when there is practically nothing else on the range and in their greed for green material they are forced to eat the young leaves. It has been shown by observation that they do not eat them by preference, but will take grass more readily if any is to be found. It is, therefore, more profitable in the end to feed a little longer and use the range only after the grasses have had a fair start. The exact time when this should be done cannot be determined in advance but should be fixed each year after a careful examination of the range.

—o—

"Th' county dairy and creamery inspector in my district," obesrved Old Uncle Henry Bushseed, "is named Mr. Bull and he married into the Ayrshire family, from Jersey. Providence must have picked him fer th' job."—Exchange.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RANCH BARGAINS

225 acres irrigated, 5 miles from R. R. town, adjoining 25 miles of open range, two sets of improvements, cuts 200 tons of hay, 100 head of cattle, 7 head of horses, machinery, grain, hogs, chickens. Price $23,000.

50 bbl. flour Mill located in valley 25 miles in length, by 12 miles in width, no other Mill in a radias of 100 miles. A bargain at $11,000, terms.

A general merchandise store, 17 miles from Ogden on U. P. R. R. Write for particulars.

160 acres bottom land on creek, decreed water, timber, cuts 100 tons of hay, 100 acres farm land, 2½ miles from R. R. station, near open range. Price $7500.

160 acres that cuts 250 tons of alfalfa and timothy, hay, good improvements including wagon, scales, and machinery, 45 durham cattle, 4 work houses, 4 miles from County Seat R. R. town, and adjoining best range in State. Price $16,000, terms.

320 acres irrigated, adjoining range, an ideal stock ranch, near school and R. R. town, good improvements, 100 acres in timothy and clover, some machinery, all fenced. A bargain at $11,000, terms.

160 acres sub-irrigated, water from 4 to 6 feet to surface, all fenced, on R. R. 100 acres being farmed, some alfalfa and timothy, $2000 worth of buildings. Price $4000, terms.

320 acres sub-irrigated, several springs fenced and cross fenced, some cultivated land and buildings, a snap at $5000.

FEDERAL LAND COMPANY
Ogden, Utah.

A GOOD INVESTMENT FOR A BUYER

The sale of the Elberta irrigation project has been signed up to a Los Angeles concern. These people are going to do things in a big way and promise to plant one thousand acres of beets next spring.

I have 50 acres of land in this project that can be bought at an exceptionally low price, and it is a chance for some one to make money or get a good farm. The land can be bought at $25 to $50 less than the other land is selling for. It is ideally located, and is the best kind of land with primary water right. Can make terms to the right man. It is a real bargain. Write me about it today.

W. C. ALBERTSON
625 Dooly Building,
Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FAR S AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

RELIABLE FARM BARGAINS.

60 acres close to Tremonton, with a full water right in the Bear River canal, now planted to 40 acres of alfalfa and 20 acres of grain. This property has a two-room frame house, barn, granary and other outbuildings. This place is well located and a good buy at $160.00 per acre, on terms.

70 acres in Garland, small home, stable, granary and other outbuildings. Nice little orchards. 40 acres under cultivation, 30 acres in pasture land and river bottom. This place can be had for a small down payment and a long time on the balance, with a reasonable rate of interest. If you are looking for a nice little farm, it would pay you to investigate this.

72-acre farm in Cache valley which we can exchange for Salt Lake City property. If you are looking for a very choice farm and have some good residence property in the city, I think we can locate you on something which will suit your requirements. This place has a good water right, sandy loam soil. Close to the railroad station and about 1½ miles from town. This is in a very productive section and good place to make a home, or we can sell this place at 10 per cent down at time of purchase and ten years on the balance, with 6 per cent interest. Purchase price $125.00 per acre. Purchaser would have to assume the water, which is not entirely paid for.

160 acres near Arimo, Idaho, which we can exchange for a small place near Salt Lake. If you have a small farm here and are desirous of locating on a larger place, it will pay you to investigate this property.

In southern Idaho we have a 40, 80 or 140-acre farm which we can exchange for Salt Lake City property or sell on reasonable terms. Ten per cent down at time of purchase and ten years on the balance. We have another farm located in southern Idaho which we can exchange for city property. We can either give you possession of this property or will guarantee to sell it for you.

We have a 320-acre dry farm which is excellent for wheat raising. It is located near Holbrook. 100 acres under cultivation, and all can be cultivated. There are 60 acres now planted to winter wheat. Will accept a small place in Salt Lake as first payment on this property. Balance on easy payments. Price of this property $20.00 per acre.

KIMBALL & RICHARDS,
54 Main Street,

FARM AND RANCH DEPARTMENT.
OFFICE OPEN UNTIL SUNSET.

EXCHANGE THOSE OLD FIXTURES

For new ones, its not expensive and will add materially to the home comfort and save your eyes.

Send for our catalog.

A full line of supplies, washing machines and appliances.

LET

EARDLEY BROTHERS

DO IT.

Everything for Electricity.

37 East 1st South Street
SALT LAKE CITY, UTAH

RANCH BARGAIN

600 acres deeded land.
340 acres contract land.
150 acres hay, grain, etc.
150 acres pasture, fenced.
100 head cattle, 9 head horses.
Complete set machinery and implements.
7 room house furnished.
Excellent range facilities.
Price complete $20,000.00, half cash, terms on balance at 6 per cent.

R. G. Agee
374¼ Ogden, Utah.

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

UTAH RATIONS FOR FATTENING HOGS

Feeding test from January 7 to March 4, 1918, conducted at the Salt Lake Union Stock Yards with the Utah Experiment Station Co-operating.

Forty-four hogs weighing on the average just over 100 pounds were divided into 4 lots as nearly uniform as to size, thrift, and general vigor as was possible, and kept under similar conditions except as to feed.

The hogs as a bunch were if anything a little below the average as feeder hogs, but considered fairly satisfactory for this time of year.

The Lots were fed the rations shown in the table below in self feeders according to the free choice system, each feed being put into a separate compartment of a self-feeder, except buttermilk (Lot III) which was fed twice daily (when available) in a trough. By this system, all feeds (except buttermilk) were available to the hogs at all times. Each lot was given free access at all times to a mixture of salt, charcoal, slacked lime and sulphur. Clean, fresh water was constantly available.

RATIONS FED

	Lot 1 Rolled Barley, Meat Meal	Lot 2 Corn, Meat Meal	Lot 3 Bran, Shorts, Buttermilk	Lot 4 Rolled Barley, Alfalfa Hay
Av. w'ht Jan.	7.102.7	101.8	100.5	101.8
Av. w'ht Mar.	4.188.0	185.0	166.5	170.5
Av. daily gain (56 days)	1.55	1.42	1.18	1.23
Average Daily Ration in Pounds				
Meat meal	0.337	0.474	.....	.....
Barley	6.36	.....	.....	5.17
Corn	.....	5.82	.....	.....
Buttermilk	.....	.....	7.38	.....
Bran	.....	.....	1.44	.....
Shorts	.....	.....	2.92	.....
Alfalfa hay	.....	.....	.....	0.10
Pounds Feed for 100 Pounds Gain.				
Meat meal	21.9	33.5	.....	.....
Barley	413.6	.....	.....	421.7
Corn	.....	410.8	.....	.....
Buttermilk	.....	.....	634.5	.....
Bran	.....	.....	123.8	.....
Shorts	.....	.....	251.2	.....
Alfalfa hay	.....	.....	.....	8.3
*Cost per 100 lbs. gain	13.68	14.79	10.22	13.69

*Cost per Cwt. Corn $3.20, R. Barley $3.05, Bran $1.65, Shorts $2.50, Buttermilk 30c, Meat Meal $4.90, Alfalfa hay $20 per ton.

The above table shows that Lot I on barley and meat meal ate more grain than either of the other lots. Lot II, however, ate more meat meal daily with corn than Lot I did with barley. Lot IV (barley and alfalfa hay) ate on the average somewhat less barley per day than did Lot I. The daily grain consumption of Lot IV was also somewhat less than that of Lot II. It must be remembered that these feeds were before the hogs at all times. The alfalfa hay feed was not of first quality, which probably accounts for the hogs in Lot IV eating so little of it.

The average daily gains for the 56 days of the test as shown in the table were highest in Lot I, with Lots II, IV and III following in the order named. The gains through out would very likely have been somewhat larger had it not been for an infection with lung worm which spread through all lost. Lot III would no doubt have made much better gains had it been possible to get the buttermilk more regularly and in more constant quantities.

To make 100 pounds of gain the table shows that Lot I ate 3 pounds more barley than Lot II, but nearly 12 pounds less meat meal, so that the barley and meat meal ration was actually more efficient than the corn and meat meal.

In cost of 100 pounds of gain Lot III (bran, shorts and buttermilk) was lowest ($10.22) with Lots I, IV and II following in the order named. In calculating cost of gains the actual market values of the feeds were used. These are given in the note under the table. Of course, any change in price of any of these feeds would change the cost of gains, but this can be calculated by using local prices and the amounts of the various feeds required to produce 100 pounds gain as given in the table.

The pleasing feature of the results is that even with the high priced feeds all Lots made gains at a feed cost considerably lower than the market value of the gains made. This of course indicates a great oportunity for the farmers of the Inter-mountain section, who have access to the feeds used, to make good money in feeding hogs.

ORDER FRUIT BOXES NOW

These are unusual times for the fruit man as well as every one else. If he is going to be prepared to handle his berries and all other fruit he must order his boxes, crates and berry cups now. Do not wait until the rush of the season is on and then expect to get what you want. Look a head and make sure you can get what you will need for moving your fruit.

The season will soon be on, and the rush will mean that some one is going to be short unless you plan ahead. Transportation is bad, lumber is being that rush orders can not be filled taken over by the government for ship You must order ahead if you want building and it makes condition such boxes and crates when needed.

Fruit Boxes
Berry Crates

All kinds made by
SALT LAKE BOX CO.

If you order yours now, you'll get them and your crop can be handled. Present conditions indicate a shortage in lumber and labor in the near future. Write or phone your orders NOW.

Salt Lake Box Co.
619-629 So. 5th West.
Was. 6170. SALT LAKE CITY

Feed for Health and Results

When you order your next supply of Stock Feed, have in mind two things—Health and Results. The economy of anything should be determined by the results.

SUNRIPE
Stock Feed

is a scientifically balanced compound of oats, barley, cottonseed meal and sugar-beet molasses. For Economy's sake order Sunripe Stock Feed.

Utah Cereal Food Co.
Ogden, Utah.

REPUBLIC
Internal Gear Drive MOTOR TRUCKS
Truck Quality at Low Prices

REPUBLIC Trucks are moderate in price and remarkably economical in gasoline and tire consumption. But most of all it is their DEPENDABILITY—their ability to keep going day after day and month after month—that is saving money for more than 25,000 Republic owners. Many of those Republic owners are right here in the intermountain west.

Among the six Republic models there is a size and style exactly suited to your hauling requirements. That truck will reduce your expenses and increase your profits. Let us tell you which model it is.

We can make immediate delivery on any model except the 3½-ton capacity.

Call at our salesroom in Salt Lake City, or drop us a line and our representative will call to see you.

INTER-MOUNTAIN OLDSMOBILE CO.
43W. 4TH SOUTH ST. TEL. WASATCH 4560

OUR SERVICE
And What It Means to You

YOU CAN AVOID COSTLY BUYING MISTAKES
Intead of Buying Blindly from Pictures in a Catalog You Can See the Real Implement Before You Buy.

This is the best year you ever saw to buy good implements, and the worst year you ever saw to buy poor ones.

Crop prices are sure to be high. All that you will have to do to make big money will be to raise big crops. And getting big crops will depend largely upon the kind of implements you use.

You can't afford to risk any implement uncertainty. Inferior implements will mean the loss of the extra bushels and extra tons that the use of good implements gives. Remember, the extra bushels and extra tons will mean a lot this year—much more than enough to pay for good implements.

See before you buy. Be sure that an implement is what you want before you let it work for you. Avoid the expensive delays of sending an unsatisfactory implement back to some distant concern and getting in exchange another of unknown quality.

Our service prevents costly buying mistakes on your part, You can come to our store—take full advantage of our stock, study the implements get fully acquainted with their every feature, and buy judiciously.

That way of buying will help you get the most from the big year that is coming.

Drop in the next time you are in town and see our stock.

Consolidated Wagon & Machine Co.
UTAH IDAHO WYOMING NEVADA

LIVE STOCK

STEERS FATTENED ON SILAGE WITHOUT CORN

The Missouri College of Agriculture recently closed the third series of experiments on feeding beef cattle which have been conducted during the last three years. The experiments just closed were conducted with a view of adjusting methods of finishing beef cattle to war conditions. As it will be seen from the following data, the cattle which received no corn other than that contained in the silage made the cheapest gains. The last test extended over a period of 100 days in which five lots of two-year-old steers were fed. The cattle used in the test were grade Shorthorn and Hereford steers which were purchased in December on the Kansas City market at a cost of $11.15 per hundred pounds. The cost of these steers in the feed lot at the beginning of the test, was $11.35 per hundred pounds.

Each of the five groups received all the corn silage and clover hay they could eat. The first lot received a full feed of shelled corn and linseed oil cake in the proportion of six pounds of corn to one pound of linseed cake. The second lot received the same amount of linseed cake as the first, but only half as much shelled corn. The third lot received the same amount of linseed cake as the first and second lots, but was fed corn during th last 40 days only. The fourth and fifth lots received no corn other than that contained in the silage. The fourth lot received the same amount of linseed cake as was fed to the first three lots, which averaged 2.77 pounds per steer daily. The fifth lot received an average of 4.4 pounds linseed cake.

The largest average daily gain, 3.05 pounds per head was obtained in the first lot, which received a full feed of corn throughout tne feeding period. The gains in live weight made by the fourth and fifth lots, which received no corn other than tnat in the silage, are considered satisfactory for fattening cattle. Crediting the gain on the hogs following the cattle to the steers, the cost of gain was least in the fourth and fifth lots. Figuring corn at $1.50 per bushel, corn silage at $8.50 per ton, linseed oil cake at $60 per ton and clover hay at $20 per ton, the total cost of feed was more than twice as much in the first lot, which received a full feed of corn, as it was in the fourth lot, which received no corn other than that contained in the silage. The price received on the market was $14.40 per hundred pounds for the first and second lots, $14.10 for the third, fourth, and fifth lots. After deducting all expense and crediting the gain in live weight on the hogs to the cattle at $15.50 per hundred, the profit per steer was: first lot, $5.27, second lot, $10.89, third lot, $15.47, fourth lot, $15.04, and fifth lot $14.02.

The largest profits were obtained from the fourth and fifth lots which received no corn other than that containd in silage. Judging by this trial, the larger amount of linseed cake fed to the fifth lot was not justified. The profits per steer in the first three lots decreased as the amount of corn increased. This leads to the conclusion that the feeding of corn to two-year-old fattening cattle in addition to corn silage, linseed oil cake, and clover hay is not justified on the basis of the present market. There was no distinct difference in the shrinkage in shipment which could be attributed to the different rations fed. There was practically no difference in the percentage of dressed beef obtained from the various lots of cattle. An inspection of the beef after the animals had been slaughtered disclosed the fact that the product produced by the heavy feeding of silage without the addition of corn, was fully equal to the corn fed beef. Two prominent packing house experts rated the fourth lot as the best of the five.

This is the third of a series of tests conducted by the Missouri Experiment Station on the extensive use of corn silage for fattening beef steers The results confirm those obtained in the previous tests.

SPRING SUGGESTIONS FOR WORK-HORSES

1. Do not fail to provide clean, warm quarters in which your cows, ewes and mares can bring forth their young. Navel ill comes from dirt.

2. It is dangerous to expose young stock, especially foals and colts, to spring rain-storms. A day's exposure, if not fatal, may stop a month's growth.

3. It is bad policy to turn the stock to pasture before the grass has well started. —bad for the pasture and bad for the stock.

4. A gradual change from hay to grass is best; but, if you are bound to make the change at once, turn the stock out at night, instead of in the morning. Then they will feed through the night, and not lie down until the sun has warmed the air and the ground.

5. Get your horses into condition for the hard spring work,—the young horses especially. Many a colt has been ruined by being put to hard work without preparation. It is the same with green horses.

6. Look out for sore shoulders and backs, especially in plowing. Be sure that your collars fit. A collar too big is as bad as one too small. If the collar rides up, use a martingale, or a girth running from trace to trace, back of the forelegs.

7. When the horses are at work on a warm day, lift up the collars now and then to cool their shoulders, and wipe off the sweat and dirt with a bunch of grass.

8. Wipe off the harness marks on your horses when you stop work at noon and at night, and clean the inside of the harness, the collars especially. The salt sweat, drying on the skin and on the harness, is what makes the trouble.

9. If the skin is wrinkled under the collar or saddle, bathe it with diluted vinegar or witchhazel. If the skin is broken, bathe it with clean warm water containing a little salt. Fix the collar, with padding or otherwise, so that it will not touch the sore spot the next day. A little carelessness at the beginning may cause a lot of trouble to you and suffering to the horse.

10. Clean your horses at night, water them, give them a good bed, and water them again after they have eaten their hay. Let them rest an hour or more before they are grained. The observance of these simple rules will not cost you a cent, and will make a big difference in their condition.—Boston Work-Horse Relief Association.

INCONVENIENT

Little Betty, just initated in the first teachings of the Sunday-school, has displayed special interest in a future life.

"Mother, will I go to heaven when I die?"

"Yes, if you are good."

"Will my dog go, too?"

"No, because dogs have not souls."

A pause; then, eagerly, "Well, will our cow go?"

"No, animals have no souls."

—"Oh, then we'll have to go to hell for our milk."—Exchange.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving

Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

Standard Sewing Machines

Sold on easy payments by mail.
We repair any make machine.
Guaranteed Drop Head Machines $8.00 and up
All standard makes handled. Write us your wants.

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Scissors sharpner fits any sewing machine free upon request.
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Write for prices
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FARMERS
ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checing Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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W. S. McCornick, Pres.
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IRON AGE
GARDEN TOOLS
Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?
IRON AGE Combined Hill and Drill Seeder
solves the garden labor problem. Takes the place of many tools—stored in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's handwork in 60 minutes. 30 combinations, $3.50 to $30.00. Write for booklet.

Bateman M'f'g Co., Box 83 C, Grenloch, N. J.

UTAH IMPLEMENT-VEHICLE CO.
Agents, Salt Lake City, Utah.

NAIL THEM
You Can't Puncture 'em
Service Tubes are like other pneumatic tubes, except they're puncture proof. Drive right over tacks or nails; simply pull them out. No leak! With Service Tubes you can travel
6,000 Miles
Without a Leak!
Inflate as usual. Tire guarantees not interfered with. Service Tubes cost only few cents more than ordinary tubes. Shipped prepaid on approval. Write for complete Tire and Tube Catalog. State size used.
SERVICE AUTO EQUIPMENT COMPANY
797 Traders Building, Kansas City, Missouri

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

SOME GOOD PASTURE GRASSES FOR UTAH

(Continued from page 1)

ly good results on some of the irrigated lands of the West, especially when included in pastures. The seed of the rye grasses weigh about 20 pounds per bushel, and as high as two or three bushels of seed to the acre are sometimes sown if planted alone. In mixtures the amount decreases in proportion to the other seed used.

Tall meadow oat-grass (Arrhenatherum avenaccum) is not of very great importance in the United States, although it grows well in some regions. Its chief recommendations are that it will grow in warmer and drier climates than timothy; it is easy to secure a stand and continues productive for many years. It is not as well liked by stock as many of the other grasses.

Red or medium clover (Trifolium pratense) is grown extensively in many parts of the United States and is very often planted with timothy. The medium and mammoth red clovers have seed that look alike and the plants are very similar except that the mammoth grows larger and matures later. The red clover seed that is purchased is often a mixture of the two. Red clover requires a good soil that is well drained. Its seed weighs 60 pounds to the bushel. About 10 pounds to the acre are used if sown alone, or from 6 to 8 pounds if sown with timothy.

Alsike clover (Trifolium hybridum) is usually raised on wet soils where red clover will not grow. It is often mixed with the red clover on poor soils. It is not advisable to raise it alone, except for seed, when about 8 pounds of seed to the ace are used.

White clover (Trifolium repens) has no value as a hay, but is good for pastures, as it readily fills the place not occupied by other plants.It grows close to the ground, and spreads rapidly by its stems taking root. It makes a very good supplement for Kentucky blue grass. Only a small amount of seed is needed as it quickly adjusts itself to the plants with which it is growing.

The kind of grass or grasses to select will depend on a number of conditions.

No single grass is best for all soils and climates; each has qualities that make it suitable for special conditions. It is usually better to have a mixture of grasses in a pasture than any one kind for a number of reasons. Each kind of plant occupies a slightly different root zone so a number of kinds growing together can more affectively utilize the entire soil. Some seasons are favorable for one kind of grass while during a different season another kind will do better. A mixture, therefore, gives a more even production from year to year than any one kind. All fields are somewhat irregular in their soil; hence if a mixture is planted there is a chance for each grass to make the greatest development on the soil for which it is best suited. Grasses mature at different seasons of the year, and where the proper mixture is used there will be one grass or another growing through most of the summer, instead of at just one period. Grasses to be cut for hay should mature at the same time, but those used for pasture should have a different season of development.

The question of just what mixture to plant depends entirely on local conditions. The variations in kind and amount of seed that might be used are almost without number. Only a few standard mixtures will be given, and the farmer can judge from these what to use for his own conditions.

As a result of investigations under irrigation the the Utah Experiment Station the following mixtures are recommended:

For bench lands under irrigation:
- Kentucky blue-grass 12 pounds.
- Bromus inermis 8 pounds.
- Perennial rye-grass 6 pounds.
- Orchard grass 3 pounds.
- White clover 2 pounds.
- Red clover 2 pounds.
- Alfalfa 2 pounds.

For light sandy soils under irrigation:
- Kentucky blue grass 8 pounds.
- Meadow fescue 12 pounds.
- Tall meadow oatgrass 5 pounds.
- Bromus inermus 8 pounds.
- White clover 2 pounds.

For low moist lands:
- Perennial rye-grass 8 pounds.
- Redtop 10 pounds.
- Kentucky blue-grass 4 pounds.
- Meadow fescue 4 pounds.
- Timothy 2 pounds.
- Alsike clover 3 pounds.
- White clover 2 pounds.

Planting.

In planting pastures great care should be taken with the seed bed in order to get a good stand. This is much more important than with the ordinary annual crops, as the pasture remains a number of years. The soil should be fine and at the time of planting should be moist.

Most of the pasture grasses can be sown in either fall or spring. Fall planting should be made early enough for the grass to get a good start before winter sets in. Where planted with a nurse crop the grass is usually planted in the early spring. In regions having summer rains the late spring is a good time for planting.

It is difficult to get an even stand of grass by hand seeding, so some form of machine is recommended. The ordinary grain drill often has a grass seed attachment. The depth of planting depends on the nature of the soil and the size of the seed. The small seeds should be planted very shallow.

The common practice of using the poorest land of the farm for the pasture because it will produce nothing else is often unwise. The pasture crop if it is to be entirely successful must have good soil.

Caring for Pastures.

Pastures often fall into ill repute on account of their lack of receiving proper care. Stock naturally select the most desirable plants and keep them eaten off, leaving the undesirable kinds to grow and produce seed. This in time will cause the pasture to deteriorate unless it is mowed before the weeds and undesirable grasses have a chance to mature their seeds. If proper care is taken there is no need for a weedy pasture.

Pastures should not be grazed too closely as the crop will be injured thereby, and since the plant makes most of its food in its leaves, much more forage will be produced in a day if the grass is not eaten too close. This can in part be obviated by dividing the pasture into fields and allowing one field to grow while another is being grazed. There is a danger from turning stock onto the pasture when the land is too wet. The grass is tramped into the ground and the soil puddled by the animals' feet. Grass responds readily to fertilizing, so any barnyard manure that is spread over the pasture will give good returns. It is a good thing to run a brush drag or some other implement over the pasture once in a while to break up any little piles of manure there may be as animals do not like to eat the grass in such places. Many pastures are also benefited in the spring by the use of a more severe implement such as the spike tooth or spring tooth harrow.

If Utah farmers will use proper judgment in selecting land and grasses and will care for their pastures after they are planted, there can be no doubt that the agriculture of the state will be improved by the planting of more pastures even on expensive irrigated land.

WANTED TO GET EVEN

Passing through a military hospital, an American attache noticed a private who had been terribly wounded.

'That's a bad case; what are you going to do with him?" asked the visitor of the orderly.

"Oh, he insists on going back to the front, sir!"

"What for?" inquired the attache in surprised tones.

"Well, he thinks he knows who did it," replied the orderly.—Exchange.

Steady Power

Steam Still Furnishes the Most Dependable Farm Power

THE Nichols-Shepard Steam Engine is representative of the best that can be produced.

The design and mechanical construction of this engine are right by the test of use and years.

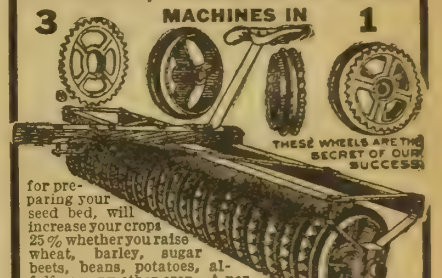
From the little 13 to the giant 25 h. p., over three times the rated power is easily developed, and it is always there when you want it.

The Gas Engine is all right for the man who wants one, and who has had experience with them. The Steam Engine, however, is the most simple and consequently the most dependable. Any one of a half dozen different things may stop a gas engine which cannot be found without experience, but all know enough about the steam engine to keep it running.

The Nichols-Shepard Steam Traction Engine, one of the Red River Special Line, is always dependable. Write for circulars.

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines
Battle Creek Michigan

USE THE WESTERN
PULVERIZER, PACKER AND MULCHER
3 MACHINES IN 1

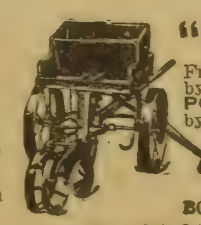


for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.
MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS
1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information.
Western Land Roller Co., Box 32 Hastings, Neb.

Big Money in Running Water
Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an
One Man One Team
Improved Powers Combined Well Boring and Drilling Machine
Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.
Small investment; easy terms. Make machine pay for itself in a few weeks work.
There is a big demand for wells to water stock and for irrigation.
Write for free illustrated circulars showing different styles.

Lisle Manufacturing Co.
Box 976 Clarinda, Iowa

"More Potatoes"



From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.
A. J. PLATT, MFR.
BOX 0 STERLING, ILL.

MILLER-CAHOON COMPANY
General Agents
Idaho Falls, Idaho Murray, Utah

Efficiency In Sheep Husbandry

D. A. Spencer, U. S. Department of Agriculture.

In these times of uncertainty and danger on every hand, efficiency and thrift are of the utmost importance. Farmers and stockmen now, more than ever before, must realize that genuine efficiency is needed in their business. One of the best ways in which the farmer can show real, true patriotism is to make efficient use of all that comes into his possession. We are all confronted nowadays with the serious problems of saving foods and feeds—but saving must extend to all branches of industry.

The big problem is to increase the sheep population, and how to do it.

According to recent official estimates of the needs of wool in the United States, we would have to increase our sheep population 200 per cent if we were to produce all the wool now used for manufacture in this country. The report of the United States Department of Agriculture for January 1, 1917, shows that there is an average of only sixteen sheep per square mile for the entire country.

If our number of sheep are to be increased, it must be by breeding operations. A large percentage of the best ewe lambs must be saved from the shambles and used to increase our breeding flocks.

An expensive shelter is not necessary for the best results with sheep. A shed or barn placed on well-drained land opening to the south, thus admitting plenty of sunlight, and so arranged as to be freely ventilated, yet constructed in such a way as to prevent direct drafts, if it has a good roof, will serve as sufficient protection during the ordinary winter. About ten or twelve square feet of floor space per ewe will give enough shed room. Pregnant ewes should be in just medium flesh, and for them to maintain health and vigor, they should have at least a mile of exercise every day.

Lambing time is the shepherd's busiest season. This time will soon be upon us, and the lambs we save will in large measure determine our efficiency in mutton production this year. The sheep owner can not afford to winter high-priced ewes on high-priced feeds, and then, at lambing time, neglect the ewes and let them lose part of their lambs. With the best of management, an occasional lamb will be lost, but when lambing ewes have the proper attention at the right time, a large percentage of lambs can be saved that otherwise would be lost. A man's adaptability to the work of sheep production will be revealed when the lambs come. Extreme watchfulness and skillful care of the ewe and lamb at the time of birth is imperative. When the lambs are coming rapidly, the ewes should be watched day and night, in order to avoid any unnecessary losses.

Occasionally a ewe will have difficulty in giving birth to her lamb, but it is unwise to help her until she has tried for some time, and appears to be unable to effect a delivery. When help is given, be careful not to excite her more than is necessary. The essentials of aid are to see that the young, unborn lamb is in a normal position, with legs in such shape as not to hinder the progress of birth. When it is possible to draw on the lamb, do so as gently as possible, and pull only at the time the ewe strains. As soon as the birth is about complete, and it is possible for the lamb to breathe, remove the birth sack from the mouth and nostrils, and blow into these parts, to assist the new thing in getting its first breath. As soon as the danger of smothering is past, leave the pen and let the ewe clean and care for her lamb for a few minutes. If the lamb does not succeed in finding the teat within twenty or thirty minutes, give it some help by placing its mouth to the teat of the mother. If it seems weak and indisposed to suck, place the teat in its mouth, and squeeze some milk into it. The shepherd should be very careful to see that there is no excess wool about the udder of the ewe; if there is, these locks should be clipped away. This will prevent the trouble of the lamb having difficulty in finding the teat and the sucking of the wool locks, which often causes wool balls in the stomach of the lamb, and which usually results in a stunted or dead lamb.

It is good practice to place ewes by themselves with their lambs for three or four days, so that they will know each other and be able to get together when placed with the flock. It will be wise at times to place a twin lamb that is not getting enough milk from its mother on a ewe that has lost her lamb. In order to do this, it will sometimes be necessary to tie the skin of the dead lamb on the body of the lamb to be transferred. Ewes know their lambs largely by scent, and when a ewe smells the skin of her own lamb she is likely to accept the faster lamb. Another way to coax a ewe to own a lamb is to rub some of her milk over the body of the lamb. When these methods have failed, I have sometimes found it possible to get results by smearing tar over the muzzel of the ewe and the tail-head of the lamb, or by keeping the ewe tied up for a day or two, so that she can not injure the lamb.

If the weather is cold and the lambs become chilled at time of birth, it may be necessary to take them in by the fire. If this is not convenient, a jug of hot water placed in a covered box will give very satisfactory results. The chilled lambs should also be given a little warm mik to supply the internal heat.

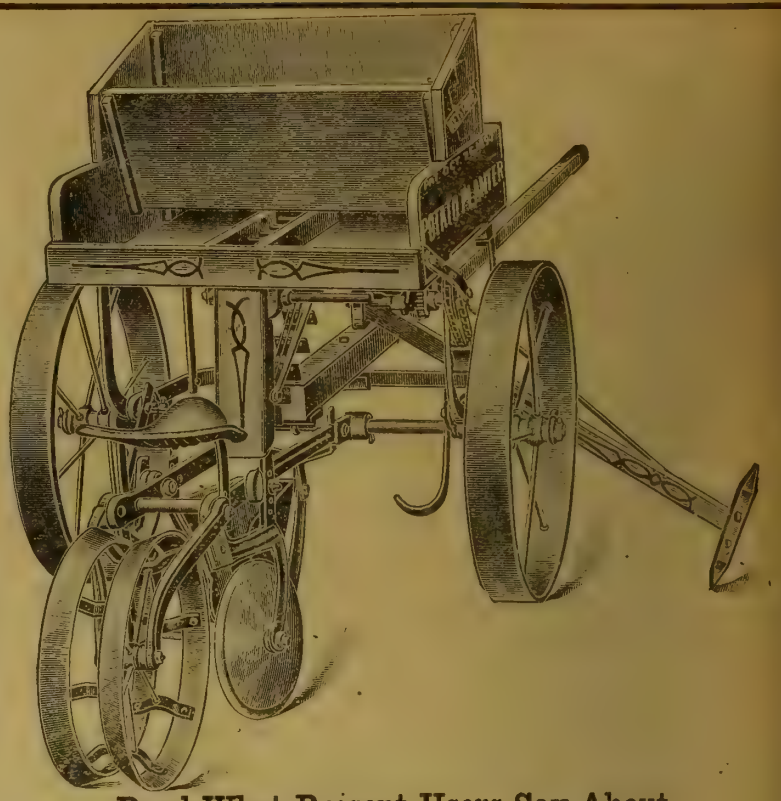
When attempting to raise a lamb by hand, be careful not to over-feed during the first two or three days. Feed about two or three tablespoonfuls of cow's milk every two hours, by the use of a bottle and a rubber nipple. The milk should be warmed to about 92 degrees Fahrenheit. Be sure to keep the bottle and nipple clean, for it may prevent the lamb from having digestive troubles. When the lamb is a week or ten days old, it can be fed every three hours from morning to evening.

After the ewes have lambed, it is usually necessary to feed some grain, but be careful not to feed too much at first. One-half pound per ewe per day to start with, and a gradual increase during the first three weeks to one pound or a trifle more, is usually better than to feed a larger amount of grain. When the lamb is three or four weeks old, the ewe can be taking one and a half pounds of grain per day. A very desirable grain mixture is equal parts of corn, oats and bran. If oats are not available, a mixture composed of 60 per cent corn, 30 per cent bran and 10 per cent linseed meal will give very satisfactory results.

When the lambs are two weeks old, they will begin to nibble at the feed. It is economy to provide them with a creep and feed them hay and grain, so that they can eat what they want by themselves. Lambs do well on the grain mixture just advised for ewes. Young lambs will not gorge themselves—and if fed all the good grain and clover hay they will eat, good mutton lambs can be ready for the market by weaning time, weighing from sixty to seventy-five pounds. March lambs can therefore be sold in June or July, and thus avoid holding them over through the hot weather.

However attractive the market may be for mutton lambs, every loyal sheep raiser should keep in mind the fact that we must have more sheep, and that good ewes will continue to be in great demand. For his own profit and for the future welfare of the country, the sheep raiser should retain all of his good ewe lambs for breeding.

There never has been a brighter outlook for continued success in the sheep business. But we must remember that no matter how wonderful the opportunities may be, we still depend on sane management in breeding and in feeding.



Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

MILLER-CAHOON COMPANY
GENERAL AGENTS
IDAHO FALLS, IDAHO MURRAY, UTAH

Seed Potatoes

Courage!! This is the year of all years to plant Potatoes. Seed is cheap and everybody are planting other crops. For profit wise planters do not follow the crowd.

Write or Phone Today for our Prices on thoroughbred **Irish Cobbler, Ohio and Rurals.** These will pay you to plant.

P.-W's. Mountain Grown Seeds for the Crop that "goes over the top."

Porter-Walton Co.

Salt Lake City

PLANT WHITE FLINT CORN

(Continued from page 3)

It is the aim of this project not to allow the raising of the corn to interfere with other necessary war crops, but rather to raise it in small areas which would otherwise probably not be utilized to the fullest extent.

Arrangements are, also, being made with the local mills to provide the necessary facilities for grinding the cornmeal in order that the substitutes may be immediately available in all localities.

Mr. Preston W. Nibley, a prominent and active citizen of the State has agreed to accept the Chairmanship of this project and will devote the necessary time without compensation to perfect it.

One rookie to another at one of the new cantonments: "Where do you bathe?" "In the spring." "I didn't ask you when, I asked you where!"

BABY CHICKS—BABY CHICKS
White Leghorns, Brown Leghorns,
$12.00 per 100.
R. I. Reds, $15.00 per 100.
ORLAND HATCHERY
Orland, Glenn County, California.

DAY OLD CHIX
Wise economy is quality not price, we sell cheap when quality is the main consideration.
ARCADY PLACE HENNERY
is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.
A. T. SMURTHWAITE
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10 Two and Three Year Old
Registered Percheron Stallions For Sale
Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.
ACME STOCK FARMS
Breeders of Percheron Horses and Ramb ullet Sheep.
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PERCHERON STALLION
One pure-bred registered imported Percheron Stallion for sale.
J. T. PETERSON,
R. F. D. 3, Box 30
Blackfoot, Idaho.

TREATMENT OF SEED GRAIN

(Continued on page 15)

treatment for smut which comes immediately before planting.

Small grains are so seriously infested with smut as to demand treatment. The most satisfactory method is to put about a bushel in a burlap sack and to immerse this in a solution of formalin. The proper strength is one pint of 40 per cent formalin in 40 to 50 gallons of water. Let the grain soak 10 minutes, after which it should be hung up to drain. The grain may then be piled for a few hours and covered with sacks or horse blankets. At the end of this time the grain should be dried rapidly. This can be done by spreading it out loose or by hanging the sacks in such a way that they touch nothing. Unless the day is warm, it is safer to scatter the grain on a clean, dry floor. In this case great care should be taken to have the floor really clean and to put the grain back into new sacks or into sacks dipped in formalin and dried. It may even be advisable to rinse the seed drill with formalin after the grain is treated.

HUBBY LOST NO TIME

Mrs. Hicks (relating burglar scare)—"Yes, I heard a noise and got up, and there under the bed I saw a man's legs."

Mrs. Wicks—"Mercy! The burglar's?"

Mrs. Hicks—"No, my husband's—he had heard the noise, too."—Exchange.

GOOD HOLSTEINS
I have three or four registered and grade heifers to spare of good breeding.
Priced from $60 to $175.
G. A. DIXON
Smithfield, Utah.

WANTED to hear from owner of good Ranch for sale. State cash price, full description. R. F. Bush, Minneapolis, Minn.

HERD BOAR FOR SALE
I have some extra good big growthy boars eight months, ready for service, sired by Richards Defender and Pathfinder.
Priced to sell soon and guaranteed to please or will refund money.
ERIK W. OLSEN
Virginia Idaho

BABY chicks; eggs for hatching; all varieties. I make deliveries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

BABY CHICKS
Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.
J. H. SHAFER
Proprietor Ogden Feed Co.
2246 Wash. Ave. Ogden, Utah

LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Calalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

BEES WANTED
Address
E. LEHNHERR,
Murray, R. D. No. 7, Utah

WE WANT FARM LANDS
IN EXCH NGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

FOR SALE
4 pure-bred gilts, and 4 pure bred males. Nearly 10 months old.
S. A. ROBINSON
Mosida Utah

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.

Duroc Sows For Sale
A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.
We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.
Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

Lumber, shingles, mill work, lowest mill prices. Prompt shipments. Inspect before paying. Send carpenter's list for free freight prepaid figure. Keystone Lumber Company, Tacoma, Washington.

$1000 Per Acre
Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.
H. A. PINEGAR
Wellington Utah

Complete Dispersion Sale of Imported and Island Blood Jerseys of C. E. Long, Buhl, Idaho
WITH
CONSIGNMENTS FROM HERD OF S. A. KAYLEROF TWIN FALLS, IDAHO, AND IRWIN BROS., KIMBERLY, IDAHO.
AT
BUHL, IDAHO, THURSDAY, MAY 2nd, 1918
Production -:- Quality -:- Type
ISLAND BRED HERD BULLS, BRIGHT LIGHTS KNIGHT, (103741); BELLES VICTORIA DUKE.
Neither have yet sired a heifer that has made under 300 pounds fat as Jr. two year old.
SUCH COWS AS
Imported Castilian Lady, 594 lbs. fat 11½ months.
Imported Lads Bright Light, 484 lbs. fat 11 months.
Imported Faustina Masurier, 472 lbs. fat 11 months.
Imported Kathie Peer, 410 lbs. fat 10½ months.
Castilian Lady 2nd, 64½ lbs fat (in March as a 2 year old, first calf.)
MANY MORE OF EQUAL MERIT.
These herds have contained leading cows and bee n high herd for last two years in Buhl Pioneer Testing Association. Sold on these records sale day. Records made without silage or pasture. Arrange to attend sale, arriving at Buhl evening before sale as trains arrives to late on sale day.
AUCTIONEERS { COL. J. W. HUGHES, Forest Grove Oregon. COL. E. O. WALTERS, Filer, Idaho.
CLERK, S. J. HAMMEL, Buhl, Idaho.
Send for Catalogue to C. E. Long, Buhl, Idaho. All Tuberculin tested over 6 months old.

Who's Houston?

Heading a much less important department of the Government than Secretary Houston, Mr. Hoover bulks bigger in the public eye. The consuming public knows about the work of his department to the last detail and is co-operating with him. Why?

Mr. Hoover knows how to popularize better than Mr. Houston.

If the Food Administration were setting out as a new concern to buck the great Department of Agriculture it would run it out of business. Why?

Mr. Hoover knows how to advertise better than Mr. Houston.

The Department of Agriculture turns out a sterling, if somewhat stodgy, product, puts it up in a dull package, offers its spring goods after the syring trade is almost over and waits for customers.

The Food Administration turns out snappy stuff, uses plenty of gilt on the package, pushes it on the road, and advertises—popularizes—advertises all the time.

Mr. Hoover's goods are "sold" to the public.

Mr. Houston's goods are still on the shelf. But Mr. Houston's line is much more important than Mr. Hoover's line.

Mr. Houston can run Mr. Hoover out of business. It is Mr. Houston's job to put Mr. Hoover out of business.

Will the Department of Agriculture take a lesson from the Food Administration in popularizing its great service? So far it has failed completely to impress upon the public mind that food production is ten to one as important as food conservation.

The Food Administration knows how to popularize, and it has lost no standing or dignity by making use of every up-to-the-minute device for "selling" its immensely important program to all the people. The Department of Agriculture still cherishes the notion that it should talk in ponderous sentences and in academic terms. Many people hold the idea that dignity and popularity are incompatible.

David F. Houston has as big and as important a job as any man in the Cabinet. How many of our people know this? How many of our farmers realize it? Mr. Houston himself is a big man—one of the four or five big men in the Cabinet. Unfortunately, the popular conception of him seems to be that he is a scientific recluse, who spends his time looking through the greatest educational institution in a microscope at new breeds of bugs.

The Department of Agriculture is the world in point of size, organization, equipment, money provision and scope of service. It is also the Federal agent for the Nation's biggest industry—the one-hundred-billion-dollar industry of agriculture. But only a handful of our people have a thorough appreciation of this. If the Nation is to cash in on the Department everybody must know all about it. It must popularize its product and market it by modern methods.

Within the Department the news seems to be wholly lacking. There seems to be no acute realization of what the people want, and that what they do want should be served to them at the time when they want it if the greatest good for the greatest number is to be accomplished. The Department bulletins should be so informing and interesting that there would be an enormous demand for them. It costs many millions to fill these bulletins and it should be worth millions more to see that they serve the country in the biggest possible way. They should be so written, so humanized, so vitilized that millions of farmers would read them. They should be so written that the majority of the people could read them and get a full understanding of the problems of the American farmer. They should be forewards not postscripts. They should anticipate the seasons, not pursue them. They should keep farm, not city hours.

It is just as difficult to promote a new and better method of raising beans as it is to sell a new and better brand of canned soup, and much more important. You've got to popularize the soup to sell it, and by the same token you've got to popularize the new method of raising beans to have it widely adopted.

A new plant discovered, a new method worked out, a production plan formulated that is more or less of a secret in the Department, is a waste of time, brains and money. We can't take one year, two years or five years to popularize with the farmers a new idea that intelligent publicity methods could put over in sixty days. A dumb messiah, no matter how important his message, saves only himself. There are, unfortunately, a good many messiahs in every field of thought who don't really care to reach the masses and who feel that salvation should be a rather exclusive affair. They, too, are dumb, though in a different way.

To popularize you must awaken widespread interest, appeal to both the imagination and the senses. You must employ the news sense to determine how to awaken general interest and then cash in with modern publicity methods—persuasive publicity — another of those clean American inventions that the Germans took from us and then turned against us for a dirty purpose.

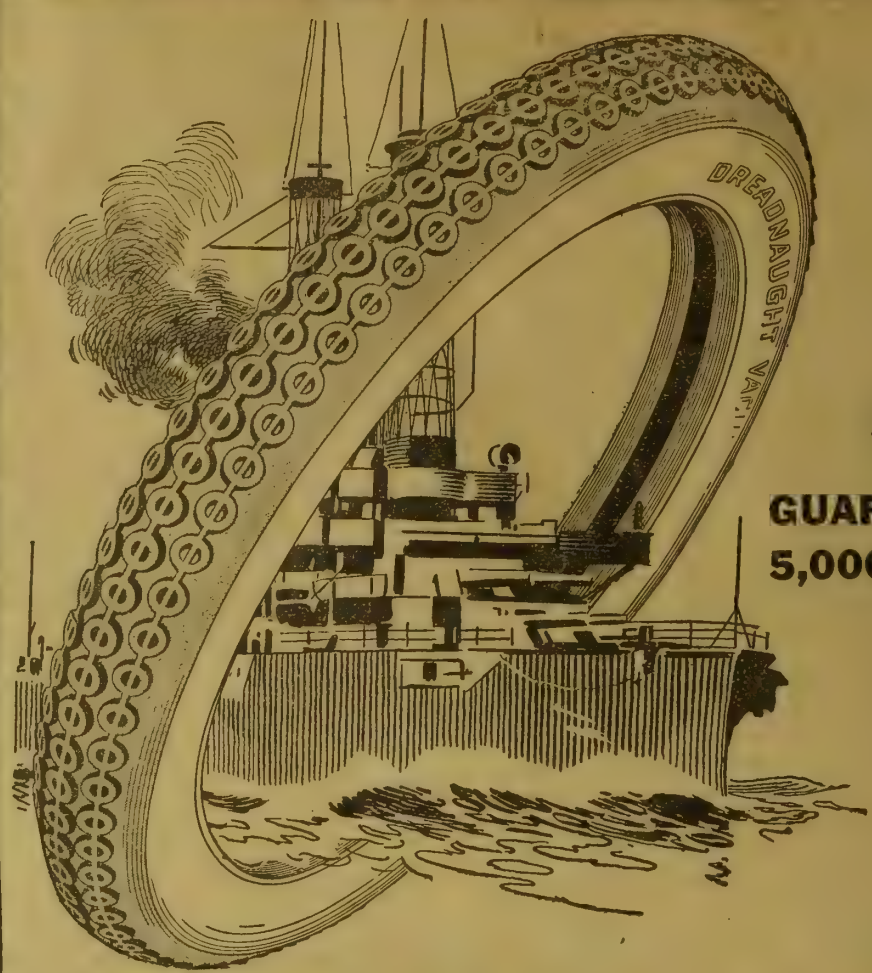
The Food Administration has been in existence less than a year, but there isn't a man at the bottom of a coal mine who hasn't heard its message. It has been given to deaf mutes in the sign language. The Department of Agriculture has been in existence forty years, yet there are millions of American citizens to whom it is little more than a name.

What the Food Administration has done in a big constructive way the Department of Agriculture can beat.

The recent promulgation of its 1918 program of production is a pat example of antiquated methods of publicity. It is an excellent program, yet on the day it was issued the 6700 county agents and extension workers of the Department had no knowledge that a production program had been decided upon. No advance notices had been sent out. The program simply sifted through to them in the Department's weekly news letter, a dull-looking, unattractive sheet. It was all very dignified, very dull, and very ineffective.

The nice easy hours won't do this year. The help must turn out at sunup and sweat with the farmer. The pleasant swivel-chair ways won't go. The goods must be popularized, advertised, and the boys must get out on the road and push them.

Ring the Liberty bell, Mr. Secretary, and rout out the hired men. The sun's up and there's a big day's work ahead. By autumn, Houston should be the best known man in America. The Department of Agriculture should be the best paying investment Uncle Sam owns.—Country Gentlemen.



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Use SUPER-DREADNAUGHT RED INNER TUBES—they are thicker and stronger than ordinary tubes.

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SALT LAKE CITY, UTAH.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 40 LEHI AND SALT LAKE CITY, UTAH. MAY 4, 1918

Increase Acre Yield---Cultivate More Land

George Albert Smith, President of the International Irrigation Congress and President of the International Dry-Farming Congress.

In no previous period of human his-ory has the world realized so keenly he need of an abundant supply of ood stuffs as at the present time. The ourse of the present great war will, very large measure, be determined y the supplies of food that the con-nding forces possess. In our own ountry, when we entered into the reat struggle, we learned first of all hat the margin of food was so small oth here and throughout the world as make the increased production of hat necessity the first consideration. o more important lesson than this as been driven home by the fearful ontest of the day. As a result, agri-ulture, which in its broad sense in-ludes all that man knows or may do the production of crops, has risen to position of importance which it has ever attained before; although in all ges the fundamental nature of uccessful agriculture to the prop-rity of mankind has been ealized. Today, our patriots do not ontent themselves with highsound-g phrases about the great philosop-ical or sociological principles in-olved in the war, they rather give hemselves first of all to the great uestions of food production and food onservation and after the material eeds of our men who are fighting for berty have been provided for, there time enough left to discuss the ab-tract issues which of necessity are e causes, in large degree at least, f this or any other war.

All earnest workers in behalf of griculture during the last few de-ades, which have marked the es-blishment of the science of agricul-re, have given themselves to the ncreasing of the acre yields of lands lready under the plow, and in a few ases to the extension of the cul-ivated lands of the world. To in-rease the acre yield of a crop may ean a tremendous amount to the eople. In a state, for instance, with million acres of wheat land, the verage increase of two bushels of heat an acre would amount every ear to an addition to the food supply rom this territory, of two million ushels of wheat—ample to care for he physical necessities of many uman beings and adding materially o the profits of the husbandmen.

The increase of acre yields was pur-ued for many years very largely by etermining the plant-food necessities f crops and combating insect and ther enemies that prey upon culti-ated plants. It is the commonest nowledge of today that plants can-ot prosper unless water is at their isposal. One pound of substance of ny ordinary crop requires for its pro-uction an average of about 500 ounds of water. The exact amount varies above and below this accord-ing to a number of factors; 500 pounds or about 30 tons of water for the pro-duction of a bushel of wheat. Any farmer may, by simple calculation, figure the tremendous quantities of of water for each pound of matter means, nevertheless, 30,000 pounds of water for each bushel of grain and a corresponding quantity for the straw, making a total of about 60,000 pounds water that must fall upon an acre of land to produce a reasonably large crop. Yet, enough moisture falls from the heavens over the largest part of the earth to supply the water needs of ordinary crops, were it all con-served in the soil; but, under the in-fluence of wind and weather, sunshine and high temper-ature, much of it escapes from the soil without being used by the plants and in consequence of the resulting drouth there is a great reduction in the acre yield and often a total crop loss results. On many pages of hu-man history is re-corded the story of famine and death due to drouth. Drouth has always been one of the chief enemies of mankind.

GEORGE ALBERT SMITH.

At this time in the world's history, when we are look-ing in a large way at immense issues, we may as well ad-mit that the yield per acre at present of the cultivated land of the world must be increased beyond resonable hope if the world is to be fed so abundantly as to diminish the economic pressure which undoubted-ly has had much to do with the origin of the present war. We must add to the cultivated area; place new land under cultivation; make our deserts blossom as a rose—if the hunger of the nations is to be appeased. Only about one-third of the earth's arable surface receives the rainfall which yields crops of average size without special water conservation methods, and even on these lands failures due to drouth are quite abundant. The re-maining two-thirds of the earth's sur-face reecive a rainfall so low that unless special provisions for the con-servation of moisture are adopted, only the scantiest crops may be pro-duced. These two-thirds of the earth's surface are commonly denom-inated the "deserts of the earth" and yet the soils of these deserts are of the highest fertility. Once bring water to them by any means whatso-ever and their hidden stores of plant food produce immense crop yields, steady and larger from year to year.

One of the overshadowing problems of today in the minds of those who think hard and well concerning food supplies of the world, is the increased use of the arid and semi-arid portions of the earth. In our country the great West was at one time a barren desert, at least so the geographries said. Webster is quoted as having said it was a worth-less section not desirable for habit-ation. Trappers and hunters returned to the East with for-bidding tales of the inhospitality of the great land be-yond the Missouri and on the Pacific Ocean. In spite of this view, seventy years ago the 24th of last July a band of pioneers entered the great Salt Lake Valley and by the application of water to the barren, burn-ing land, laid the foundation for an empire, which in beauty and prosperity is not to be surpassed within the boundaries of the United States. Since the day of the Mormon pioneers irrigation has reclaimed great areas of land in our West. Those who have traveled over this country know what a transfor-mation it has brought. It has been likened to a miracle, and a miracle it is but one almost wholly under the control of man.

When the dry-farming propaganda began, there was much doubt and op-position. All grains were grown with irrigation. Today the process is re-versed. Most of the grain raised within the State of Utah is grown by dry-farming methods and the most ex-pensive irrigated lands are reserved for more intensive crops that are more in keeping with the financial invest-ment in irrigated lands.

By the united efforts of irrigation and dry-farming may be accomplished one of the greatest conquests of the age. Two-thirds of the earth's surface are under a low rainfall and are denominated arid and semi-arid; a world full of people are clamoring for more bread and a body of well established, scientific principles exists by which the two-thirds of the earth's surface under low rainfall may be made to yield food, for the feeding of mankind.

Since the days of Abraham, famine has exacted its awful toll in human lives. In Europe, Asia and Africa mil-lions of human beings have found an untimely grave for want of food. In Rome alone, ten thousand in one day being reported.

Joseph in Egypt, and the seven lean years, is a familiar story. The Valley of the Nile has been the scene of most awful famine. In 967 A. D., 600,000 people died in the vicinity of what is now Cafro, due to failure of the Nile to come to a flood.

The traditions of the American Indian tell us of terrible drouth in our own land wiping out whole commun-ities.

The famines of India and China have claimed their millions.

The bread riots of England and the suffering for food in Ireland are of comparatively recent date. With this record behind us, ought we not to take advantage of every opportunity to in-crease our food supply and learn to conserve it; to avoid for the future the terrible starvation that has afflicted our ancestors.

At this very moment millions of hu-man beings are in the shadow of star-vation and are looking longingly across the mighty ocean toward this most favored of all lands, hoping and pray-ing that our present harvest will yield a surplus sufficient to preserve them from death for want of food.

As citizens of the greatest nation under heaven let us not be recreant, let us go bravely and gladly to our task. We must not weary in well do-ing, but exercising the God-given pow-ers within us; devote ourselves to the problem or reclaiming mountain and plain and increasing the food sup-ply of the earth for the comfort and blessing of mankind.

Here and now let each of us dedicate ourselves to future useful-ness. Determined that the Father of us all will be pleased with our efforts to bless His less fortunate children.

No other people under Heaven en-joy such peace and liberty as we do, and appreciation of our blessings ought to burst from grateful hearts, in good work in the interest of mankind. Let each one do his best.

There Should Be Only One Business----Win The War

Weaning The Pigs

William F. Purdue.

The weaning period is a critical one in the young pig's life. Some farmers wean their pigs entirely too young. A pig is not ready to depend altogether on feed from the trough before it is at least 10 weeks old, although it may seem previous to that time that it is not getting much sustenance from its mother. But that little helps wonderfully, therefore the mothers should be so fed that they will keep up a good flow of milk until the pigs are old enough to depend fully upon themselves. Pigs that have learned to eat freely can safely be weaned earlier than those that have never been given a feeding pen of their own. In all cases circumstances will have to govern to a great etxent the age at which the pigs are weaned, but the mistake should not be made of weaning them too soon. Some farmers let them wean themselves, but if the sows are to raise two litters a year this method of weaning will not do for the sows must be bred at a certain time. Where the litters are large the pigs are not so large in size at a certain age as when the litters are smaller, and in these cases it is a good plan to take away one-half the pigs, leaving the weaker ones with the sow for a few days longer. One or two of the weakest pigs may even be left for a week or two. With this method of weaning the sow's udder will dry up in perfect condition, and at the same time the weaker pigs will be given a good start.

The male pigs should be castrated before they are weaned. At that time, if the operation is rightly performed and conditions are favorable afterward, they will grow off with no appreciable setback. But if they are allowed to run until they are great big fellows they will receive a setback when castrated, from which a few may never recover. After castrating arrange for shade in case the weather turns hot immediately and provide plenty of pure drinking water and clean sanitary beds.

After the weaning period has been passed safely there are still many responsibilities for the swine breeder to meet. A reasonably safe rule to observe in feeding the growing shoats is to allow them at their regular meals every ounce they will eat up clean, providing the ration is a reasonably well balanced one. An abundance of skimmilk is a valuable help at this time. Forage crops will also assist materially in the finishing process. Not only do forage crops promote good health in the shoats, but the gains made from these crops are attained at far less expense than similar increases on grain alone.

During hot weather shade and an abuandance of drinking water are very essential for the shoats. Hogs suffer much in hot weather without shade and get weakened in vigor. A few trees in the hog pasture are always desirable, but when these are lacking sheds should be constructed. Water for drinking must be given four or five times a day. Much labor can be avoided here if a tank or trough is arranged for water to run into from the stock tank. The shoats can then help themselves to a drink at will, and on warm days one or more will be at the trough drinking nearly all the time. The practice of keeping a constant supply of water before growing pigs will add 20 or 30 pounds to each one's growth during the summer and fall.

In addition to its own resources of $8,600,000, this bank has back of it the resources and facilities of the Federal Reserve System, amounting to more than $3,176,454,000.

Walker Brothers Bankers
Salt Lake City.

STRAW AS A FEED

H. H. Seward.

A good many years ago in our locality farmers wintered their cattle almost entirely on straw, the straw stack usually serving as both feed and shelter. Sometimes a straw-shed made the cattle fairly comfortable. Horses and colts, sometimes were wintered almost or entirely at the straw stack. But in those times the straw was stacked by men, and not allowed to fall into a loose pile, as it usually does now from the blower of the thresher. Some farmers even now who wish to preserve their straw stacks for winter feed hire one or two good men to stack the straw and make it shed water. Obviously, the pile of straw stacked by hand will be better feed and keep good longer than the average modern stack.

The chaff of the straw stack is the best part of this coarse feed, and chaff when wet will spoil quicker than the coarser parts. Animals feeding at a straw stack always "dig in" to find and eat the finer portions, pulling out and tramping down the coarser. If by some threshing process the chaff and finer portions of straw could be separated from the coarser at threshing time, and the finer portion stored or covered from the weather, it would make right good feed. It also contains any grain that may have been blown over, which is considerable sometimes. Our thresher this last summer said that he thought he had blown one-fourth of our oats out with the straw. But, as luck would have it, our straw was all blown into the haymow of a new addition to the barn, and hence all of the grain is under cover and will be saved.

To make an otherwise long discussion short, good, bright clean straw is "a right fairly good feed," as one farmer puts it. Bright straw means straw that has not been wet and weathered. The best straw is that blown direct from the thresher into a barn. Here it will keep clean and bright indefinitely. That is the way we are handling our wheat and oats straw, and we are now feeding it with good results to sheep, calves, and horses, young and old. The straw chute from hayloft holding the straw terminates on a smooth concrete feeding floor. In this way, when the straw is forked down from above absolutely all the chaff and fine parts are saved on the floor. From this concrete floor straw is carried to the horses and colts in armloads; not with a fork. For in carrying straw with a fork much of the finest and best parts are lost. Likewise, straw hauled loose from a stack to a barn or other feeding place is not so good feed because of the loss of chaff.

We do not feed straw to dairy cows giving milk, heifers in calf in winter, or to young fattening beef cattle. It simply is not good enough and will not produce results. It will keep them alive, and that is about all. Sheep will make better use of its naturally, and it is healthful as the rough portion of a horse's diet when idle, because the horse by nature is an active animal, and his system cloys on richer feeds when in confinement. But this does not mean that we feed idle horses on straw alone. Some grain is given, and a little legume hay now and then for a variety and to furnish protein.

Some farmers having clover hay and good straw will feed their horses on clover hay alone till it is gone, then on straw alone. Which, of course, is wrong. Better feed straw one feed and clover the next, or at each feed straw and clover mixed, fifty-fifty. Then the animal is both filled and is satisfied, neither is he in danger of disease often resulting from too much legume feeding when idle.

The time has already come on our farm when every ton of straw we produce is preserved in the big barn for feed and bedding. The animals fed this straw are sheltered in the barn below. In mangers with tight and smooth concrete floors the animals eat the finer and better parts of the straw, while the coarser parts, half or more usually, are thrown out directly under the animals for bedding. The system makes better feed, easier handling of the feed, and drier bedding conveniently placed. Every pound of the straw is made to serve some good purpose. Not a pound of the grain blown over can be wasted.

SECOND
Spring Sale
OF
Feeder and Stocker Cattle
Monday, May 6th
AT
The Salt Lake Union Stock Yards
North Salt Lake, Utah

90 CARS of QUALITY FEEDER AND STOCKER CATTLE, including cows with calf, dry cows, heifers and steers from yearlings to threes, will be on the market for sale in car lots or train lots.

BY

HOLTMAN LIVESTOCK COM. CO.
Wasatch 1125

SALT LAKE LIVESTOCK COM. CO.
Wasatch 1128

NORTH SALT LAKE, UTAH.

At our April Sale 3000 head of Feeder cattle changed hands.

Watch for announcement of our next sale.

They were burying the German dead, when one Tommy called over to his mate:

"Bill, this bloke's a-moving. What shall I do?"

"Shove him in," growled Bill.

"But," went on his mate, "he says he ain't dead."

"That doesn't matter," answered Bill, "you can't believe a word the bloomin' Germans say. Shove him in!"—Tid Bits.

THEIR AGE

Customer: "Those eggs look as if they might be pretty old."

Grocer: "Maybe so. They're of the storage.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

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VOLUME XIV. LEHI, UTAH, SATURDAY, MAY 4, 1918 No. 49

The Thinning of Sugar Beets

Garland, Utah.

Utah Farmer:

"Which is the best way to hire sugar beets thinned; by the day, by the row, by the acre or by the ton?"

J. H. S.

Where all of the hand work is hired to one party on a given area, a very satisfactory way is on a ton basis. This plan makes it of financial interest to the party who does the hand work to see that no beets are cut out that ought to be left; that the doubles are also all taken out. On a tonnage basis the contractor is interested in getting a full stand of beets and what is also very important, he is interested that the topping shall be done right. The difference between care in topping and indifference may be a difference of a ton or more of beets to the acre. With beets at $10.00 per ton, the loss through careless topping alone is nearly half of the cost of the hand work.

Where children are used for thinning, it is generally best to hire upon a row or acre basis. Youngsters like to be able to estimate their efforts in so many dimes, every time they have finished thinning a row. An acre looks terribly large to a youngster whose back is acheing. A rather common practice, in some communities is to furnish the thinners with a card that will be punched for each finished row, similar to the card system for berry pickers. Stakes are driven at the end of the rows to help identify the row and the worker. This allows the boss to keep certain tab on each worker and it is well to have a plentiful supply of stakes so they will not need to be pulled too soon after the row is thinned. The inspector may be delayed in getting around, so the stake is a safeguard against contentious claims for credit.

Children may be taught to do the thinning well, just as easily as to allow them to start with indifference, if the boss is tactful and remains closely at hand and works in sympathy with each helper.

It is best to start the thinning work with only a short day. It is trying on the back at best and more so at the beginning. The first day or two, let the help stay in the fields the first half day and come back the next morning for a fresh start. This is important even for men or women. In any event children should not be expected to overdo their strength.

One rather extensive beet grower who hires his thinning done chiefly by women and children says that he finds it best to have rather frequent pay days. Cash the card credits two or even three times a week. The workers may not want to spend the money right away but it sometimes make a difference to them to jingle some money in their pockets on the way home.

There are others who will not want any part of their pay until the job is done. They get more pleasure out of the anticipation of having several dollars coming to them at the end of the job than to have smaller amounts paid to them more frequently. The employer if tactful, will be prepared to handle the situation which way it may seem best.

Sometimes it is best to hire by the day but most beets are thinned on a tonnage or acre basis. The row system is the same as the acre basis except that rows are usually more easily computed by the youngsters.

Every beet grower should try to manage to be right with the thinners. He will then know whether the cultivator should be run again, just ahead of the thinners; is the roller needed? Is the soil getting too dry? Are the thinned plants being cultivated promptly? There are questions that can be answered intelligently only by being right on the job. Be careful about the roller. Sometimes, by running the roller over the beets, the firming will establish capillary movement of soil moisture to the surface and help fields that appear to dry too rapidly. If one is on the ground, it will be easy to observe that to run the roller and leave it smooth and too firm very long, the moisture will come to the surface and escape through cracks that will begin to open. In that event, the cultivator, that will stir the soil will be wanted quickly. Action at the right time will often bring large returns.

The man who is putting in the crop is the only man who should be able to accurately estimate the distance that the plants should be left in the row. On well fertilized ground, it may mean 10 inches or possibly only 8. If not so fertile, it may mean 12 or 15 inches apart in the twenty inch rows.

After arriving at conclusions as to the kind of stand that is wanted, by being on the job, the corrections may be made promptly. Tactful corrections are always better than regretful scoldings. The boss can earn better wages at thinning time by being right on the job all of the time with the help than by putting in his time at any other work. The stand of beets is important. Don't neglect even the small details.

Thinning and Cultivating Beets

Mark Austin Agricultural Supt. of Utah-Idaho Sugar Company.

I want to congratulate our growers of the Utah-Idaho Sugar Company on the splendid work they have done in the preparation of the seed bed, most of which has been prepared in first class shape, and thus the foundation for a good crop has been laid.

Now, I sincerely hope you will be just as prompt and careful with the thinning and see that it is well done. Wherever it is possible leave the largest and healthiest plant, the proper distance apart to suit the condition of the soil. On rich soil closer than on the poor soil, ranging from 10 to 14 inches to suit conditons. Most of our growers have learned by experience the proper distance to get the best results.

Great care should be exercised to see that the plants needed are not destroyed, but left in good condition after thinning. Just a little extra care on the part of the thinner will mean a great deal to the tonnage.

Beets should be well cultivated and if at all weedy it pays to cultivate once or twice before thinning. If the weeds are not killed before thinning by the time the thinning is done they will have grown so large that it will be difficult to kill them. If not killed they will take a great deal of moisture and strength out of the soil if allowed to grow to any extent. It is a great loss to allow beets to become weedy at any time. Like preparation of the soil if the cultivating and thinning is done at the right time and in the right way it will very naturally increase the tonnage. Now that beets are $10.00 a ton it will pay well to see that the work is done right.

I sincerely hope that our farmers will do as well with thinning and cultivation as in the preparation of the seed bed and then we will be able to have a large crop.

The Waste In Farm Machinery

H. T. Johnson.

The neglect of farm machinery and tools by so many farmers is appalling. Anyone traveling the roads can see on every hand, valuable farm implements left standing in the open fields, where they are last used, without covering of any kind to protect them from the wind, rain and sun. These implements are going to decay and ruin, as fast as these elements can destroy them. This is not only so with reference to the cheaper implements, such as, hand plows, hoes and small implements, but it is true with the more costly ones, such as hay balers, seed drills, threshers, wagons, etc.

Any farmer knows that to leave his implements to take the winds, rain and sun as it comes, means an early distruction of them, and also he knows that by caring for them when they need paint, and keeping them from the rain, wind and sun, means they will last him many years longer than if neglected, and there are thousands of these implements left in the fields near the houses in the open, where they are daily and yearly, in some instances, exposed to ruin and waste.

On a twenty mile trip made yesterday somewhere in Utah, I jotted down a list of articles which I saw standing in the fields, and near the farm houses; all of them exposed to the weather. Some left where they were used the past season, and some of the Binders, with the canvasses still left on them were practically ruined. The list is as follows:

36 wagons—some recently used—all standing in the open.

5 sets bob-sleds standing where they were last used.

18 buggies—some practically new—some old.

6 surries—some practically new—some old.

10 mowing machines—some with the sickles left on, and badly rusted.

21 rakes—all badly rusted.

6 binders—some with canvasses still left on them. Reel Arms and slats twisted out of shape and badly rusted.

5 automobiles—some new and some second hand. All showing signs of out door exposure.

2 cyder mills.

10. riding plows—rusted—shares still left on them.

4 beet drills, showing signs of the weather.

7 grain drills—some not yet badly injured, but showing signs of the weather.

2 thresh machines.

3 steam engines—engines badly rusted.

2 potato planters, standing where used last season.

3 disc harrows.

3 manure spreaders—2 practically new.

4 riding cultivators—rusted and the pole bent out of shape.

2 tongue scrapers.

2 drag harrows—rusted, and left where used last season.

4 wheelbarrows.

All of these goods were observed, while passing along the road.

There is no telling how many more were in the immediate vicinity, just as badly neglected.

I know too well that many farmers are not able to have everything they would like to have about them. At the same time, they could save these farm implements even if they had to take them to pieces, and store them in small shelter. If it were possible for every farmer to take his implement apart—to paint them as they were put away, and then store them in some secure and dry place, it would mean the saving of millions of dollars per year, to the people of our country. A few dollars worth of paint means many dollars in saving, if used judiciously. Will not some of the farmers read this, profit by it, and go and get their farm implements out of the fields, paint them and put them away until they are needed again. If so, they will have spent the time to good advantage.

Value of a Farm Paper

Are you giving careful study and attention to the valuable suggestions that are offered in your farm paper each week? Are you getting all of the benefits to be gotten from your farm paper?

Do you read your farm paper in such a manner that it will help you in your farm work? If you are not, now is a good time to start.

Some of our readers say they get their subscription price out of a single issue. Devote a little more of your spare time to reading and you will not have to work so long and hard.

Some of the suggestions and helpful ideas will save you a great deal of time, you will then be able to read a great deal more. Reading is not all you should do—act after you have read if the suggestions can be applied to your conditions.

Farmers should do more reading.

DAIRYING

GOOD FARM BUTTER

The butter made on the farms of the United States may be materially improved in quality, in most cases, if standard methods are employed and greater care is exercised in carrying out the necessary details. The essential steps to be taken in making good farm butter are:

1. Produce clean milk and cream. Cool the cream immediately after it comes from the separator. Clean and sterilize all utensils.
2. Ripen or sour the cream at from 65 degrees to 75 degrees F. until mildly sour. Always use a thermometer in order to know that the right temperature is reached.
3. Cool the cream to churning temperature or below, and hold at that temperature for at least two hours before churning.
4. Use a churning temperature—usually between 52 degrees and 66 degrees F.—that will require 30 or 40 minutes to obtain butter.
5. Clean and scald the churn, then half fill it with cold water and revolve until churn is thoroughly cooled, after which empty the water.
6. Pour the cream into the churn through a strainer.
7. Add butter color—from 20 to 35 drops to a gallon of cream—except late in the spring and early in the summer.
8. Put the cover on tight; revolve the churn several times; stop with bottom up and remove stopper to permit escape of gas; repeat until no more gas forms.
9. Continue churning until butter granules are formed the size of grain of wheat.
10. Draw off the buttermilk through the hole at the bottom of the churn, using a strainer to catch particles of butter. When the buttermilk has drained out replace the cork.
11. Prepare twice as much wash water as there is buttermilk, and at about the same temperature. Use the thermometer; do not guess at temperatures. Put one-half the water into the churn with the butter.
12. Replace the cover and revolve the churn rapidly a few times, then draw off the water. Repeat the washing with the remainder of the water.
13. The butter should still be in granular form when the washing is completed.
14. Weigh the butter.
15. Place the butter on the worker and add salt at the rate of three-quarters of an ounce to a pound of butter.
16. Work the butter until the salt is dissolved and evenly distributed. Do not overwork.
17. Pack in any convenient form for home use, or make into 1-pound prints for market, wrapping the butter in white parchment paper and inclosing in a paraffined carton.
18. Clean the churn and all butter-making utensils.—U. S. Department of Agriculture.

RUSSIAN SUNFLOWER SILAGE PROVES EQUAL TO CORN SILAGE

Fed to Dairy Cows at Montana Station, It Gives Good Results.

After three seasons of investigational work on Russian sunflower silage, the Montana Experiment Station, located in a high mountain valley at Bozeman, has demonstrated that one average acre of sunflower silage yielded 25 tons of silage, which proved to be a very good roughage for dairy cattle.

A silo was opened in March, 1916, and two lots of seven cows each were fed alternately grain and clover hay against grain, clover hay, and sunflower silage. The grain and clover lot showed an average gain in body weight of 11 pounds, and produced 1.382 pounds of butterfat in 33.37 pounds of milk on an average daily feed of 13 pounds of grain and 21 pounds of clover hay. The grain, clover, and sunflower silage lot showed an average gain in body weight of only 6 pounds, and produced 1.459 pounds of butterfat in 34.35 pounds of milk on an average daily feed of 13 pounds of grain, 12 pounds of clover hay, and 34 pounds of sunflower silage.

With a slight difference of production in favor of the sunflower silage lot, 3¾ pounds of this silage replaced a pound of clover hay. This is not quite the same ratio as corn silage to alfalfa.

The crop planted in rows 28 inches apart at the rate of 20 pounds per acre and gave an average yield of 25 tons of silage per acre. Frequent cultivations were given during the early stages of its growth and the silage cut when 5 percent of the flowers were in bloom.

Russian sunflower silage may solve some of the feeding problems of our high altitude districts.

INCREASING THE PROFITS FROM THE DAIRY COW

By F. R. Cammack.

There has never before been a time when the feeding of dairy cows called for more study on the part of the owner than today. When feeding stuffs are high and the price for butter fat necessarily high, it is very important that the best management be utilized and the feeding stuffs which will produce milk most economically be fed. Although it is a fact that alfalfa hay is the best single feed for dairy cows, its use alone will not give the greatest returns. Just as people cannot live on one food satisfactorily, neither will cows produce as much when fed on alfalfa alone.

The dairy cow needs a succulent feed, that is, one containing the natural plant juices and the ideal succulent food is the summer pasture which unfortunately is not available at all seasons of the year. Silage, root crops and other succulent feeds enable us to furnish this type of food during the fall and winter seasons. In fact they are often spoken of as "winter pasture." They have a higher value than their nutritive value would indicate because of their favorable effect on the digestive processes of the animal. Experiments have repeatedly shown that silage or root crops fed in the ration will increase the production of milk about twenty-five per cent and I have been told by many farmers in various sections of the State, that they have personally found that these experiments are true and that they could not be without silage and root crops and keep in dairying.

The time is coming when the greatest dairy production will be in the sections of our country where alfalfa hay and silage or root crops can be grown most abundantly.

In addition to the desirability of feeding silage and root crops in the ration because of increased milk production, we find that greater yields per acre can be grown than most feeds. In case of the corn silage we have authentic reports of twelve to twenty-two tons per acre on the irrigated farms and in root crops (mangle beets, half sugar beets and carrots) we know of twelve to twenty-five tons per acre so that where they can be grown we would have to look a long time to get greater yields from our soil. The average cost of corn silage would be at present about four dollars per ton and has been known to sell as high as twelve dollars per ton in this State when farmers appreciated its value. I have yet to find a farmer who has a silo and has given it fair opportunity to show its value, who would be without it and stay in the dairy business. That is a strong recommendation. Although corn silage has many points in its favor over other feeds, peas and oats make a good silage but usually yield less. Alfalfa and clover may be used, but, except where they cannot be cured into hay, it is not advised. Sorghum and Kaffir are also often used successfully for silage. Of the varieties of corn, the ones used most successfully have perhaps been the "Muirs No. 13" and "Pride of the North" but the varieties that will mature most completely in the different localities are the ones to plant. Since sixty-three per cent of the food value is in the ear and thirty-seven per cent in the stalk, it pays to use a variety which will form the most fully developed grain with a growth of fodder. Another good reason for growing corn for silage is that all the plant including about forty per cent of the feeding value, that otherwise would be wasted, is utilized completely as food. This is not so important for our state because comparatively little corn is raised at present.

Corn for silage should be planted about May 15th in most localities or when safe from frost. Plan your farm to include either silage or root crops this year and you will never regret the step.

THE WORST OF WORDLY CONTROLS "DEBT"

The devil of debt seems to be on the heels of almost everybody. The clerk, he's in debt; the bookkeeper's in debt; ditto the typewriter. Same wtih the porter and drayman. As far the superintendent, he can't remember when he wasn't. The office boy would be in debt if any body would trust him. And all of them complaining and acknowledging the miserableness of their condition.

Debt is a mortgage on your salary. Debt is a monument to a young man's weakness, a grown man's folly and an old man's failure in the University of life.

Debt is discounting tomorrow's liberty for to-day's good time. Debt is a quit-claim to your wife's confidence, your children's admirations and your own self-respect.

Debt is a guaranteed Insurance policy against happiness.

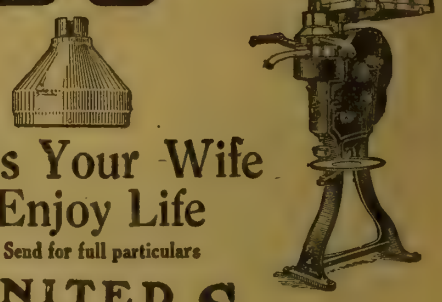
"Then what are you going to do?" Say a chorus of young fellows, business men, aspiring women, laborers, clerks, managers, street car conductors and hundreds more.

Do without!

It will take some backbone, it will take some genuine courage. But you'll be able to hold your head up and that's more than you can do now, and you know it. You won't have palpitation of the heart when the postman delivers your mail, and you won't tremble every time the boss asks you to come into his private office. Neither will you be ashamed to have your stenographer open your mail. Because you'll be working today for tomorrow's satisfaction and not to make good an account of yesterdays extravagence.

J. D. Tagman.

DISC US BOWL



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Battle Creek Michigan

POULTRY

PREVENT DISEASE—DON'T DOCTOR SICK CHICKENS

Byron Alder, Agricultural Experiment Station.

Nearly all authorities on poultry pathology and most practical poultrymen who have had considerable experience in handling fowls agree that "doctoring" poultry is not advisable nor profitable as a general practice. The individual bird represents but a relatively small value and where a man's time is worth anything he cannot afford to use it and expensive medicines treating sick chickens individually, unless they are very valuable breeders or show birds.

In nearly all cases the diseased fowl should die or be killed. The fact that one or two individuals of a flock get sick while the others are healthy and productive readily marks them as weaklings. A hen lacking in vigor or vitality or with a weak constitution should never be left in a laying flock because she cannot be a good producer and her eggs should never be used for hatching.

Some of the diseases respond fairly readily to treatment; even rheumatism, roup, etc., can be cured, but the effects of the disease often remain while the original weakness is not usually overcome by such treatment. The aim of every poultry keeper should be to care for his flock in such a way as to reduce to the minimum the danger of disease among his birds.

There are two important factors involved in the maintenance of good health in a flock of fowls.

1. Only those individuals with a sound and vigorous constitution are kept. All indications of weaklings are carefully watched and on the first appearance the bird is removed from the flock.

2. A system of poultry management which is in every respect absolutely hygienic.

If a flock is lacking in constitutional vigor and vitality the only way to do is to breed it into them. A bird is strong and in good health when it has a clear eye, lively appearance, a bright red comb, a good appetite, is quick and active in all its movements and when each organ of the body performs its function in a normal manner. Only such birds should be used as breeders.

Under our favorable climatic conditions the problems of good management are not as difficult as in the more humid sections. Yet many mistakes are made and diseased or weakened fowls are the result. Where roup or rheumatism is common the house is at fault. Clean up. Provide plenty of ventilation, but prevent draughs. Keep the litter and all inside the building clean and dry.

The feeding of tainted or moldy feed and poor methods of feeding otherwise good feed are the causes of many digestive troubles which usually result in some form of so-colled diarrhoea which is often a symptom of more serious trouble. A variety of feeds is important. Fresh water, grains, green and succulent feed, grit, some animal food, and mash should all be included. Avoid overfeeding. Keep all utensils clean in which food is placed.

Thousands of fowls are weakened and are readily overcome by disease due to the ravages of mites and lice especially during the summer. These are the chief source of trouble during hot weather. Spray the house with whitewash; disinfect and clean thoroughly. Keep the birds on free range where possible. Feed plenty of good clean wholesome food, but don't overfeed.

PREVENT EGG LOSSES

Millions of eggs produced in this country feed no one. The natural question is, Why? And the answer is that they are carelessly handled, poorly packed in improperly constructed cases, badley stored in freight cars, or allowed to become warm on their journey from the hen's nest to the home. Prevent this enormous loss of valuable food, and loss of profits. Take every possible precaution to keep eggs fresh and wholesome, as they are when freshly laid. It's easy to get eggs to market in prime condition, says a recent publication of the United States Department of Agriculture.

The proper handling of eggs is not a one-man job. Many people are concerned in it. Their interests are common, and mutual understanding and co-operation between them benefits all alike.

The producer's part in the general scheme of good marketing is to bring good eggs to market. To accomplish this he should market his eggs frequently; not let them accumulate.

The dealer's job is to keep the eggs good. His slogan should be "Ship promptly and properly." The sooner an egg is put under refrigeration and started for the market the better its quality when it reaches its final destination, and the higher its value.

A stale egg pleases no one. Heat is the egg's enemy; cold is its friend. Precooling eggs before shipping them, therefore, saves food material. It checks the development of "blood-rings," which occur in fertile eggs subject to incubating temperature (68 degree or higher). It prevents "addled" eggs; the term applied to eggs when the membrane between the yolk and the white breaks, allowing the two to become mixed. When the eggs are warm this delicate membrane becomes soft, in which condition it is more liable to break by jars which are unavoidable in transportation. Chilling makes the eggs stiff and jellylike, and cold eggs ride best. Precooling retards evaporation, the cause of shrunken eggs. Eggs just laid are full, but 65 per cent of their contents is water. As this water evaporates, the quality of the eggs is reduced Warm temperatures aid evaporation. Precooling helps to make a uniform product, and this is a day of standardization. A weak spot in the egg trade is the lack of uniformity or standardization for its product. If each case of eggs received at the market is exactly like the last one, the shipper could establish a reputation for uniformity.

Eggs to be shipped should be well packed in clean, standard egg cases. They should be kept under refrigeration and sent to market in properly iced refrigerator cars which retain their good quality. Refrigeration during transit maintains quality, weight, fresh appearance and food value. It retards loss of quality, shrinkage, "blood-rings" and loss of food value.

FEEDING YOUNG CHICKS

Rations to Make Young Birds Thrive —When to Feed.

Young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. Some good feeds for the first feeding are moistened hardboiled eggs, johnnycake, stale bread, and oatmeal or rolled oats, which may be fed separately or in combination. Mashes mixed with milk are of considerable value in giving the chicks a good start. The mixture should be fed in a crumbly mash and not in a sloppy condition. Johnnycake composed of the following ingredients in the proportion named is a very good feed for young chicks. One dozen infertile eggs or 1 pound of sifted beef scraps to 10 pounds of corn meal; add enough milk to make a pasty mash and 1 tablespoonful of baking soda and bake until done. Dry bread crumbs may be mixed with hard-boiled eggs, making about one-fourth of the mixture eggs, or rolled oats may be used in place of bread crumbs.

How Often to Feed.

It is a good plan to give these feeds about five times daily for the first week then gradually substitute for one or two of these feeds a mixture of finely cracked grains of equal parts by weight of cracked wheat and finely cracked corn and pinehead oatmeal or hulled oats, to which about 5 per cent of cracked peas or broken rice and 2 per cent of charcoal or millet or rapeseed may be added. A commercial chick feed may be substituted if desired. This ration may be fed until the chicks are 2 weeks old, when they should be placed on grain and a dry or wet mash mixture.

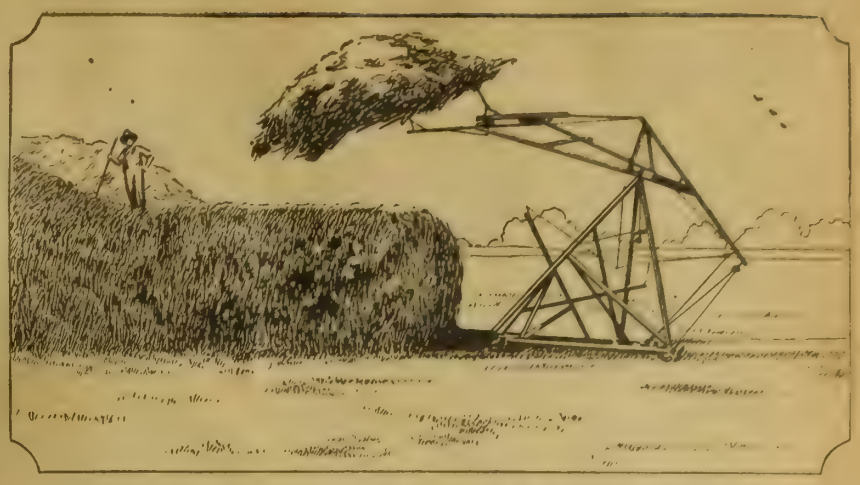
Young chicks should be fed from three to five times daily; but if care is given not to overfeed, chicks will grow faster when fed five times per day. Young chicks should be fed not more than barely enough to satisfy their appetites and to keep them exercising, except at the evening or last meal, when they should be given all they will eat. There is danger in overfeeding, particularly if the young chicks are confined and do not have access to free range, as too much feed under such conditions is apt to cause leg weakness.

HOW ABOUT IT?

Don't you remember that last June you promised the wife to plant a few cherry trees this spring? It is getting a little late but possibly not too late, if it has been neglected. There is no fruit that gives such excellent returns, and quickly too, as the sour cherry. The trees are shapely and do not need much pruning to make a symmetrical top. They may be grown over a wide range of latitude and altitude and by making up an assortment, fresh cherry pies and plenty too can be had for several months. Don't begrudge the birds their share. Plant one or two extra trees and call it the birds share. The birds will repay you in many ways.

If you live in a district where the sweet cherry succeeds, of course, you will put in some of the sweets. There are too many homes here in the intermountain country where there are no cherries planted. Look over your premises and make room for at least one or two more tr s. Every spring ought to mean at least a few additional trees of some kind that will be planted to take the place of others that need to come out or to fill the vacant spot where none have ever been planted. Maybe the older people do not miss fresh fruit badly but it is a serious neglect to deny the youngsters all of the fresh, wholesome fruit that they can use. There is no more valuable fruit and none that requires less care than the cherry. Come Now! What about it?

If you want the best in Butter Wrappers send in your order to The Utah Farmer TODAY.



USE MOLINE HAY TOOLS

TO STACK HAY QUICKLY AND CHEAPLY

FOR handling large acreages of hay, Moline Sweep Rakes and Stackers are the quickest and most economical means of getting the work done, requiring a minimum number of men to operate, because of the many conveniences and automatic features in their construction. With Moline hay tools, there is no danger of breakdown during the busy season. their construction being extremely strong throughout, and their operation simple, positive and reliable.

The Moline Swinging Hay Stacker shown in the above illustration is thoroughly representative of the Moline line, stacking hay to a height of twenty-five feet quickly and with the least amount of labor. It is entirely automatic in its operation, the fork being lifted, swung, discharged and returned to position for another load without attention on the part of operator.

With the Moline Swinging Hay Stacker two men constitute a full crew —one to guide the horse and one on the stack. The man on the ground quickly and easily adjusts the stacker to dump the load at any desired point while the fork is on the ground, after which all he has to do is to lead and back the horse, everything else being automatic. The fork can be operated from either side of the stacker, with only a minutes work to change positions.

Other dependable Moline hay tools are Moline Overshot Hay Stacker, Moline Power Lift Sweep Rake and Moline Pipe Axle Sweep Rake. See your Moline Dealer.

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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

Take your own condtiions seriously and plan to improve them. Keep your farm so that it will bring you a profit.

If farmers have a surplus of wheat and do not sell it, the government may take it from them. Hoarding of wheat will not be allowed.

On many farms the fences should be fixed up. They are in bad condition. If stock were turned in for pasture, the fence would not hold them. Fix up the weak places and put your fences in good order.

"It is a long lane that has no turning," and some of those who are profiteering and taking advantage of war conditions will find that the government will make them account for such work. The government may be a little slow but it will get them any way.

The agricultural advisory committee which recently ended its deliberations at Washington have asked for an investigation to determine whether or not there is any justification of the high prices farmers are being asked to pay for farm machinery.

Give the poultry house a good cleaning for mites and lice the enemy of poultry. Use some good disinfectant to kill the pests and then give the coops and surroundings a good white washing. The disinfecting qualities of the whitewash will be improved by adding an ounce of calcium chloride to each two gallons of wash.

No matter how many acres you have planted, few or many, the acre yield is important. To secure a larger yield means more work but high priced crops will pay for the extra time spent to increase the acre yield. An extra cultivation will often mean a little better yield per acre, why not try it this year and see if you can not get a better yield per acre than ever before.

WRITE OFTEN TO THE BOYS

Every soldier boy looks forward to the time when mail from home will arrive. How often are you at fault for not writing to them. They want to know the home news, they may possibly see a daily paper but that does not satisfy, they want the home news and the home paper or a letter from home is the only way they can get it. Our letters should be written in such a way as to inspire confidence and cheerfulness. Do not write despondent letters. Tell them all the home news but avoid the unpleasant things. There are so many things you can write about that it seems a shame to worry them with any of our troubles, just tell them about the good things, they have enough troubles "over there" without trying to share any of ours.

We owe it to our boys, our friends, to write them often. You may have been on a long journey and know what a letter from home meant to you. Write tnem often, but only cheerful home news.

INCREASE OF HOGS

Utah will have a large increase in the number of hogs this year. Some of those who have taken an active part in the campaign for increased produce are pleased with the results, and look for a big increase over last year. The government reports for April 8 says that Utah has 120 per cent of brood sows for 1918 as compared to 90 per cent for 1917.

Our state and government officials have taken a great deal of interest in the stamping out of hog cholera in our state and this will help to increase the number of hogs produced for market.

Utah can and should increase her number of hogs. We are going to 'go over the top" with our hog production this year.

CARE IN THINNING OF BEETS

If you do not get a good stand of beets how can you expect to have a good tonnage at the end of the season. Just a little more care and attention should be given to secure a better stand of beets this year because of the great shortage of sugar. Every ton of beets you harvest this fall means ten dollars, and an extra day or two spent thinning the beets or seeing that it is done properly is time well spent.

Every beet counts this year, it takes but a few of them to make a hundred pounds ond only twenty hundred means ten dollars.

In the past we have not been as careful as we should have been in thinning our beets, in getting a good stand. The thinning should be done more careful, even the best thinners can improve Take this part of the work a little more serious and get a better stand of beets.

CULTIVATE MORE LAND

Only a very small part of the great area of land in Utah is under cultivation. We have made wonderful strides in the last few years in bringing under cultivation thousands of acres. Today we are producing hundred of thousands of bushels of wheat on land that we once thought valueless.

When dry-farming was first started there was a great deal of doubt and opposition. Today, the sentiment is growing in favor of this modern method of farming.

The tests that have been made and the experience of practical farmers are helping us to over come many of the difficulties that hindered dry-farming when it was first began.

When wheat was bringing a dollar, or less, the cost of producing was so high that many became discouraged. With wheat selling for nearly two dollars we can afford to make a greater effort and cultivate more land. With the tractor and other modern machinery we can cultivate more dry-farm land than was possible a few years ago.

HOW TO MARKET YOUR CROPS

We have often suggested that the way to market our farm crops was through the finished products. War conditions are adding new reasons. Transportation difficulties give one of the reasons for the condensing of our farm crops. Livestock of all kinds is one of the best ways to solve this problem. Cattle, sheep, hogs, dairy cows, can be produced and their products in a concentrated form sent to market. Think of the food a good dairy cow will produce during a year in the way of milk, butter and cheese. From the sheep we get wool and a lamb crop. Hogs, chickens and beef cattle all have their place on the farm. Livestock on the farm not only finds a market for our hay grain and other farm crops but they help to keep up the fertility of our soil which in turn means an increased production Livestock on the farm means an increased profit and better farming and helps to solve the problem of how to market our crops in a condensed form.

HELP FOR THE FARMERS WIFE

Much has been said about help and labor saving machinery for the farmer, but what about help for the housewife. Girls are now offered good positions left by boys who have been called to the front. Many girls from farm homes have gone to cities where they can secure employment at a good salary.

Greater responsibilities have come to the farmers wife and she should have the help of the many modern labor saving devices. Many a step can be saved and she can be relieved of worry and drudgery so often found in the farm home.

The work of the farm home is of importance, good food, well prepared, is necessary for the farm workers and this is only part of her many duties.

Home conveniences, labor saving devices are essential, they are one of the best investments that can be made. The health and efficienecy of the farmers wife should be considered at all times. The war has brought her increased responsibilities and anything that will help her should be provided.

GOOD RECORD FOR CACHE VALLEY

A monthly report has just been issued from the office of the Western Dairy Division giving a summarized report of the testing by the various cow testing associations in Colorado, Idaho, New Mexico, Oregon, Utah and Washington. In all these states the Cache valley association leads. The average amount of milk for all the associations was 591.5 pounds while Cache Valley had 825 pounds of milk for each cow in the association. The average for all states in amount of butter fat for each cow was 26.6 while Cache Valley leads with an average of 35.2. Again in the cost of feed for each cow, she lead, the average for the other states was $10.30, while Cache Valley cost was only $6.30.

The above results prove what we have often said, that Utah can be made a good dairy state. The cows that make up the Cache Valley association are better than the average Utah cow. It brings home the lesson, however, what can be done. If the farmers of Cache Valley can make this kind of a record, the rest of the state can do as well if they will build up their herds like the farmers in our north county have done.

STAMPING OUT BLACKLEG AND TUBERCULOSIS

Many of our livestock people are finding out the value that comes from protecting their animals from disease. It is estimated that 40 to 50 thousand dollars were saved to livestock owners in this state last year from loss by blackleg.

During 1917 the Bureau of Animal Industry with offices at Salt Lake gave out about 185,000 treatments for blackleg. The state gave out about 75,000 and thousands of treatments were sold by commercial companies. Estimating that about 350,000 animals were treated and that 2 per cent were saved, it means that 7,000 cattle were saved. This is a low estimate as to the number saved and shows what the campaign by the government and state is doing.

In Utah County the campaign is about finished for the testing of livestock for tuberculosis and the officials have found that about one per cent have been infected. These animals were killed, the state paying one half of the value of the animal. The government has three men and our state has the same number of men testing our livestock for tuberculosis.

We know our stock should be free from tuberculosis but too few have had their animals tested. Every owner of livestock should work with these men and free their herd from these diseased animals.

Utah's Experimenters In Agriculture

ORSON WINSO ISRAELSEN.

Professor O. W. Israelsen looks after irrigation and drainage work at the Utah Experiment Station. He is also Associate Professor of Irrigation in the Agricultural college. No phase of agriculture is more important in the West than is irrigation. Upon the moisture supply depends the crop yield. It was by irrigation that Utah was "made to blossom as the rose" in pioneer days. Dr. Widtsoe and Prof. L. A. Merrill did about fifteen years of work on the agricultural phases of irrigation, that is they studied the effect of the time, method, size, and frequency of application on crop production. These men were followed by Dr. F. S. Harris who is now working on the same sort of practical problems. There, are, however, two great fields of irrigation almost as yet untouched. Water-rights have been studied but sparingly, and delivery of water to the land in known quantities is just forcing itself on public attention. We are, also, just beginning to realize for the first time how much the drainage of water-logged lands has in store for us. Professor Israelsen has been at the Utah Station for only a year and a half, yet he is already deep into these important problems.

Orson came as a Christmas gift in 1887 to his parents who were living at Hyrum, Utah. He spent his boyhood in the district schools and on a ranch in Blacksmith's Fork Canyon. He grew up in first-hand contact with irrigation. He was graduated from the B. Y. C. at Logan in 1910, after which he promptly entered the Utah Agricultural College. He studied hard, taught algebra, and completed a course in irrigation and drainage in June, 1912. Thereupon he entered the University of California from which he "took" a master's degree in 1914. He was laboratory assistant in 1912-13, assistant in irrigation investigations at Davis, California in the summer of 1913, instructor at the University of California Farm School in 1913-14. In 1914-15 he was assistant, and in 1915-16 instructor, in experimental irrigation for the California Experiment Station. He came to Utah in 1916 as assistant professor in charge of irrigation and drainage in the college and as irrigationist for the Experiment Station, which positions he has held up to the present time except for promotion to an associate professorship.

In connection with the Utah Water-rights Commission Professor Israelsen has begun work on water-rights. To untangle the rights to irrigation water is no easy problem, but it must be done if we are to avoid the expensive and friend-destroying lawsuits of other western states. Then, too, water is not used economically on land when it is used in excessive quantities. Just how to get irrigators to use only moderate quantities is extremely difficult. To increase the duty of water is another problem up on the success of which much depends. Water-measurement and the elimination of waste in canals and ditches are likewise of great importance. The reclamation of seeped and alkali lands at a cost low enough to make drainage profitable, promises much to Utah.

It is upon these problems—all vital, difficult, and of far-reaching importance both to individual farmers and to community development—it is upon these problems that Professor Israelsen is now working. The field is wide, the workers are few, but the future promises much.

That Utah's irrigationist is capable is attested by his experience, his training, and the recognition he has already gained. He was in his senior year chosen a member of Gamma Sigma Delta, the honorary agricultural fraternity of America. He has also been elected to membership in the American Association for the Advancement of Science, American Society of Agricultural Engineers, American Society of Agronomy, and the Inter-national Irrigation Congress

His chief articles are five concerning irrigation, one as a California State Engineering bulletin, the second a paper in the Inter-national Irrigation Congress, the third and fourth are papers in the Transactions of the American Society of Agricultural Engineers and the fifth appeared recently in the Journal of Agricultural Research. In addition he has written about fifteen articles in farm papers. Publications take time and work; Professor Israelsen's are growing rapidly in number. Meanwhile irrigation work goes steadily onward.

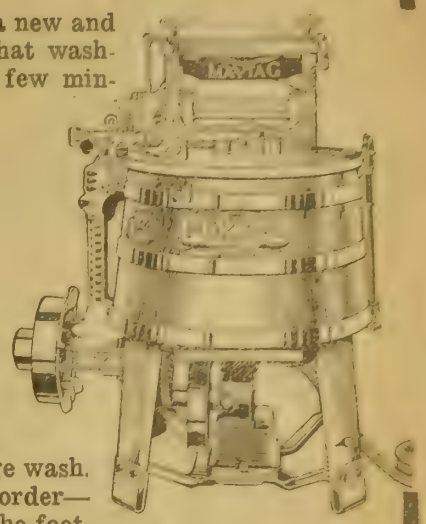
WHAT MAKES A MAN

If you can give in when you find
you're wrong,
And know that some mean little
fellow will sneer;
If you can admit that you've made a
mistake,
And can pay up the price of it, how-
ever dear;
If you stand solid and swallow the
things
Your opponent's going to say,
And bear up with courage the shame
that it brings
When a fellow must give in that
way;
If you can do this, you are built on
the plan
They start out to build, when they're
making a man!
If you can come down, just as meek
as a lamb
After you've blustered and snorted
around,
And knowing you're wrong, say you're
wrong and be calm
And humble yourself to the ground;
If you can descend from the stand
that you took,
In whate'er the dispute may have
been,
And never condemn your smart foe
when you look
At the triumph that rests in his
grin;
If you can do this, then we'll stand
off and scan
From your head to your feet, what
the Lord made a man!
If you can make up your mind not to
care,
When you find that you're wrong for
sure,
But just to admit it, and stand up and
bear
All the loss and the shame you en-
dure;
If you can go bravely on and face the
whole truth,
And give in and pay what you must
In land or in dollars, in joy or in
youth,
You're the kind that the world's go-
ing to trust,
You're the kind they intended to
mould when they ran
The metal they use when they make
a real man!

—From the Baltimore American

Washing is too hard for a Woman--It's work for a Machine

And now there is a machine—a new and different machine—a machine that washes and wrings the clothes in a few minutes without work or worry—it's



The May-Tag Multi-Motor Washer

Equipped with small powerful engine that uses 5 cents worth of gasoline for the average wash. Nothing to break or get out of order—starts with a slight pressure of the foot. Saves work, saves time saves garments, saves money and makes washday a pleasure.

SEE THAT ENGINE

The engine also runs the churn, cream separator, food chopper, ice cream freezer and other light machinery— right while the washing is being done, too, if desired.

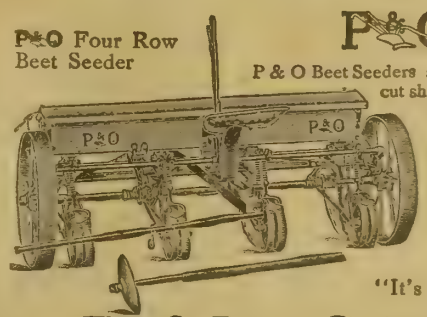
Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

P&O

Sugar Beet Implements

P&O Beet Seeders



P&O Four Row Beet Seeder

P & O Beet Seeders are up to date in every respect. The accompanying cut shows the regular equipment. The feed mechanism can be adjusted to plant any quantity desired. All cups are adjusted at once. Large seed capacity. Press wheels have open center, concave tires.

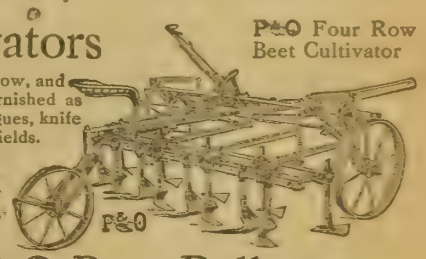
Can be furnished for planting in rows 16, 18 and 20 inches, or 18, 20 and 22 inches apart, as ordered. Openers and press wheels can be raised or lowered together, or independently. Can be equipped with an efficient Fertilizer Attachment; also an Irrigating Attachment.

"It's the Way We Build Them."

P&O Beet Cultivators

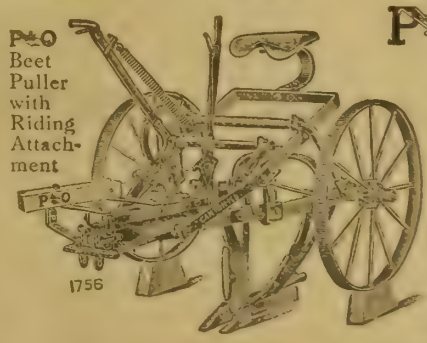
P & O Beet Cultivators are made in two and four row, and can be equipped to meet varying conditions. Furnished as shown, or with irrigating shovels, duck feet, deer tongues, knife weeders, disc weeders, spiders, crust breakers and shields.

Fine depth and leveling adjustment. Adjustable for rows 16, 18 and 20 inches apart, or 18, 20 and 22 inches apart, as ordered. Noted everywhere for simplicity of construction, great strength, and ease of operation, the hall marks of P & O excellence.



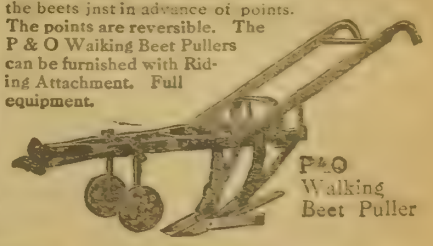
P&O Four Row Beet Cultivator

P&O Beet Pullers



P&O Beet Puller with Riding Attachment

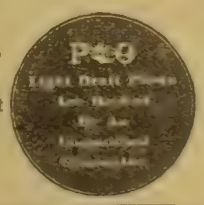
Walking or Riding. The P & O Riding Beet Puller is the only one on which the operator sees the beets just in advance of points. The points are reversible. The P & O Walking Beet Pullers can be furnished with Riding Attachment. Full equipment.



P&O Walking Beet Puller

We make a full line of implements for the Beet Grower.

Our pamphlet, "Sugar Beet Implements," describes them. Write for it.



Ask Your Dealer or Write to Nearest P & O Agency

Parlin & Orendorff Co.
Canton, Illinois

UTAH IMPLEMENT-VEHICLE CO.
Salt Lake City.

The Care of An Automobile

Larry Overson.

How to Get Good Service and Avoid Expensive Repairs.

In considering the car upkeep question, three things have to be considered—the driver, the car and the road. A reckless driver may ruin a good car or bad roads may do the same, in spite of careful running. While the writer realizes that it would be advantageous to have upkeep figures given, it would be of no practical value, as the cost of upkeep is not identically the same, even with the same make of car, or even the same driver, as roads and weather cut a big figure in fuel.

It is well known that driving into the wind takes more gas than when there is none, and the harder the wind the more gas required.

Different stretches of road also require different amounts of gas. However, more gasoline is wasted by faulty engine adjustment than any other way. Too rich or too poor mixture in the carburetor, missing cylinders, leaking or wrongly timed valves and carbon in the cylinders, all are wastes of power.

How to Test the Mixture.

One of the best ways to test the quality of the mixture is to turn the engine over a couple of times with the switch off and the throttle open, remove one of the spark plugs and hold a lighted match to the hole. If the mixture is too poor it will burn weakly or not at all, or if too rich will burn with a yellow colored flame. A mixture which is about right will explode, not burn.

A carburetor adjusted for summer may not be just right for winter, but when once set should be let alone. If there is still trouble, it may be dirt in the carburetor, faulty ignition or carbon in the cylinders. A carburetor should be flushed out often, and if there is much trouble with dirt, the gasoline should be strained through a fine-meshed smooth cloth.

How to Locate Trouble.

When an engine runs after the switch is turned off, or knocks in the cylinder while running, it is a pretty sure sign of carbon. The spark lever too far advanced will also cause knocks in the cylinder.

The only satisfactory way of removing carbon is to take the engine apart and scrape the cylinders with the steel carbon remover, which can be bought for the purpose.

This will take some time, but, if done carefully and methodically, will not be very difficult. Put everything aside in just such order that you can get it back in just the way it was before.

Poor oil or too much oil is the cause of carbon, and while it is necessary for the cylinders to have plenty of oil, too much is just as bad as not enough. Only the best grade of oil should be used. It pays in the end.

Valves generally have to be ground every thirty or forty days if the car is used steadily. On some cars the engine has to be taken apart to do this; on others there are plugs directly over the valve heads, which may be removed to get at them. The edge of the valve head should be coated with valve-grinding paste, which can be bought in tubes, and turned back and forth with a short motion till the edge of the part and the valve show bright all the way round. While doing this, repeatedly shift the valve around so as to grind evenely. Be careful not to get any of the paste in the cylinders, as it will injure them. Valves seldom get out of time, but if they do, they had best be adjusted by an expert. It is too particular a job for one who is not used to the work.

Ignition Troubles.

Most ignition troubles are confined to dirty or improperly spaced spark plugs. Excessive oil or too rich a mixture causes fouling of the plugs and should be remedied. Engines with magnetos have less trouble than those depending on batteries. Batteries should not be allowed to fall below twenty amperas, all wiring kept from getting oil-soaked or chafed, as this will soon cut through the insulation and cause a short circuit, as will also oil if it penetrates the insulation. The space between the points of the spark plugs should be between one-sixteenth and one-thirty-second of an inch, so as to give a thick spark.

An Overheated Engine.

This may be caused by driving too long on low, too late a spark, or too rich a mixture. A clogged circulation may also be the trouble. Loss of power may be due to a slipping clutch if the leather-faced clutch, and may be oil-soaked or may need a new leather. Disk clutches have to be kept oiled.

All hubs, differential and gear case must be well packed with hard oil. A mixture of half cylinder oil and half hard oil is good for the gear case. The main thing required to get good service of a car is to keep the engine tuned up in good order and use reasonable care in driving. Better go several miles around a very bad spot of road and save the wear and tear on the car.

As to tire service, the important thing is to have good tires to start with. A thick-treaded casing and the thickest red inner tube you can buy are good insurance against trouble. A small vulcanizer is a good investment, as all small cuts in the casing and all ordinary inner tube punctures can be repaired and is a great saving. Tires must be kept inflated till they stand up, well rounded under the load, if you would prevent tire trouble.

FRIGHTENING YOUR CHILDREN

Janet Thomas.

As a rule children come into this world free from fear. It lies with their elders to help them keep this heritage. A healthy baby will smile friendly and "Goo-goo!" at everything from his own mother to his worst enemy. He will try to pet the stove as he would a kitten, until he learns better. To save his little fingers he is told when he nears the stove. "Mustn't touch! Stove will hurt baby!" He draws back in alarm and thereafter regards the stove with fear. Such warning is necessary for the child's own protection in spite of the theories of certain doctrinists who forbid teaching the child to fear anything. It is merely passing on knowledge which otherwise the child must gain through the painful experience of a bad burn.

This is not needless and wicked frightening of the little one as is the case when he is told that the bogey man will get him if he is bad. Or if he wishes to go into a forbidden room —"Mustn't go in there! Bogey man in there!" The imagination of a child is far more active than the average adult has any conception of and the words "bogey man" may conjure up something so terrible to him that he will have a nervous seizure at the mere mention of it. It is the very uncertainty of what the bogey man is that makes him so fearsome. The child thus frightened is inclined to people the dark with dreadful imaginary beings and he will probably become a nervous, irritable little thing easily frightened at next to nothing.

The bogey man scare is only one example of the many methods used to frighten children into obedience. Some are kept from naughtiness by the threat of a policeman catching them and others by the fear of some terrible punishment which even the most brutal parent would not dare inflict. The gravity of the offense to these little ones, in this method of making them "good," is the more terrible because its results cannot end with the little one's childhood, but surely must effect his whole life unwholesomely, and whatever so vitally affects him must effect his children and his children's children.

WHEN you can keep your customers satisfied with the service you give, and at the same time save money doing it, you have taken two steps ahead. Now for the third step.

The International Motor Truck is a Business Builder

Horses can travel just so far every day, and the distance is not great. Beyond that distance you cannot do business profitably with horses.

An International motor truck travels three times as fast and as far as a horse. It enables you to reach out for business into territory you cannot profitably touch with horses — at an expense less than that of the two or more horses you now have.

Build up your business to its limit—reduce your expenses below what they now are—by using an **International motor truck.**

Four Models

H, 1,500 lbs. capacity — K, 3,000 lbs. capacity
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Special bodies for any business.

International Motor Trucks Are Sold By

Utah Motor Car Company, Salt Lake City, Utah.

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230 SOUTH, 6TH WEST, SALT LAKE CITY, UTAH.

Dry Farm Seed Corn

Mr. Strong of Box Elder County, Utah, experimented for 15 years with dryland flint corn, not only did Mr. Strong increase the yield over 100 per cent but he produced a cob only one-half as large as the old type White Flint. Mr. Strong developed a dryland corn of wonderful merit, a heavy yielder and remarkably early for DRY LAND cultivation, you will not be disappointed if you plant a good acreage of Strong's Dryland White Flint.

Order early as our Supply is limited.

Vogeler Seed Co.

SALT LAKE

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

DISKING AHEAD OF THE PLOW

I. D. O'Donnell.

Plowing is generally understood to be the first implement operation in preparation of the fields for seeding. The disk is more important as a preparatory step to plowing. For irrigation farming it is important that the soil be handled in such a manner that it will be kept in physical condition favorable to need by the plants of the moisture.

Double disking the ground ahead of the plowing will thoroughly pulverize the surface and effectively prevent drying out of the soil. The pulverized surface is turned by the plow into the bottom of the furrow, making perfect contact between the bottom of the furrow and the soil turned by the plow. While this disking ahead of the plow appears to be extra work, it is really labor saved as much less work is required to bring the plowed ground into good condition for seeding, and the farmer may be positive that the all important seed and root bed is in first class condition. A similar use of the disk following the grain binder prepares the ground for fall plowing, retaining the mostiure in the soil until the grain is removed for threshing and opportunity given for plowing.

Following the plow the disk may be used to good advantage in two ways. Set at an angle it will pulverize the surface, and followed by a harrow prepares a good top to the seed bed. Set to run straight or nearly so it acts as a packer to settle freshly plowed ground which is soon to be seeded. The disk is also a labor saver in putting in crops on land that has been in cutlivated crops the year before. Here the farmer gets the advantage of crop rotation. By going from a cultivated crop to small grain he is enabled to prepare the land in the spring with the disk for seeding with a quick and easy operation as compared with the plow.

If stubble ground is not to be fall plowed it should at least be gone over with the disk, turning under the scattered grain and weed seed which will be sprouted by fall rains and later winter killed. Otherwise these seed would volunteer in the next year's crop and cause trouble. The disk, as I say, has its uses but it should not be substituted for the plow. It is a surface worker and does fine execution both before and after the plow. When necessary to turn the soil to a considerable depth the plow must be used. Cross disking does not give as satisfactory results as double disking or lapping the disk one-half its width.

A number of companies manufacture disks for which they make various claims. All disks work on the same principle. An important item is the size of the disk. This instrument operates with a combined cutting and revolving motion and the smaller in diameter the disk the more efficient it is in pulverizing the soil. From this it may be judged that preference should be given to the smaller disk. A 14-inch diameter gives good all-round service. The width of the disk will depend upon the amount of horse power available. As this implement is worked at a time when speed is important it is well to get the widest size consistent with the available horsepower. Keep the disk sharp; it is impossible to get good work out of it when dull.

SETTING THE PLOW FOR GOOD WORK

Carl H. Gamble.

Any plow when properly assembled and correctly hitched, will do good work and operate satisfactorily in any condition of soil for which the particular bottom on that plow was designed. When wheel plows do not perform to the satisfaction of the user, it should be understood that either the plow is not equipped with the right kind of bottom, or some of the rules for the proper operation of a wheel plow have been violated. Discover first whether a new plow has been correctly assembled. The printed and illustrated directions supplied by manufacturers are the most accurate guide in this matter.

Keep in mind that a wheel plow, properly adjusted, will run with its entire load on the wheels. In hitching lengthen the traces so that the load will be equally distributed on all three wheels. Too close a hitch will cause the team to carry a good proportion of the load that should be on the front wheel. This makes hard work for the team and it is difficult to control the plow. Weight must be on the front furrow wheel in order that it may guide the plow and keep cutting full width furrows at all times. A common complaint is that furrows are not uniform. This applies particularly to gang plows or wheel plows with more than one bottom. This complaint may be due to any one of the following faults: The frame of plow not level, improper rolling coulter adjustment, improper front furrowwheel adjustment, and incorrect hitch.

The frame should be parallell with the surface of the field. If the land being plowed has a slope the gang-plow frame should slope accordingly; otherwise one plow bottom will run deeper than the other and the furrows will not be uniform. It is very important that both rolling coulters be adjusted an equal distance—outside or to land—from the shin of the plow. For instance if using a gang plow with two fourteen-inch bottoms and the front rolling coulter is set flush with the shin of the plow this robs the front plow bottom of from one-half to five-eighths of an inch of its furrow slice. With the rear rolling coulter set from three-fourths of an inch to one inch to land, it adds that much to the rear plow furrow slice. This causes the front plow to turn a 13½ inch furrow slice and the rear plow fifteen-inch and as a result the furrows are not uniform.

It is also important that the front plow can freely cut a full-width furrow. If the front wheel is adjusted so that when it is run in the corner of the furrow the front plow cannot cut full-width freely, whereas the rear plow, owing to the spacing of the beams, must always cut a full-width —here again the furrows will not be uniform. With the rolling coulters properly adjusted, measure the furrow slice from the rolling coulter to the edge of furrow wall This on a fourteen-inch bottom gang should measure fourteen inches. Adjust the front furrow wheel in or out until this measurement is obtained. And here again comes the importance of correct hitch. With the frame level, rolling coulters and furrow wheel properly adjusted, it is still possible to hitch as low or so far out of line on the clevis that the front furrow wheel will not run snugly in the corner of the furrow. Lengthen the traces and make adjustments on the cross clevis until the front furrow wheel runs snugly in the corner of the furrow.

SPEED UP THE PLOW

How enlarging teams and using bigger implements saves time and labor. By hitching a third horse to a two horse walking plow a man can cover at least a quarter of an acre more per day, according to the U. S. Department of Agriculture. This makes a difference of about five acres in twenty days, or a saving of from two to three days' work, which is a big consideration during the busy season. During an unfavorable plowing season this saving of time may mean the difference between a big crop and a small one. The time and labor thus saved in one of the heaviest farm operations of the year may mean also that an extra man does not have to be hired. A farmer who has a little more plowing than can be done by one two-horse plow and who ordinarily employs an extra man and another together by simply hitching a third horse to one of his plows.

If the size of the plow can be increased along with the addition of the extra horse, the gain will be even greater.

Three horses to a 16-inch plow should do at least half an acre more per day than two horses to a 12-inch plow if the depth of plowing is the same. Averages for the whole country as reported by the Department show that a two-horse, 12-inch plow, plowing 6 inches deep, covers about 1¾ acres a day, and a two-horse, 16-inch plow, 2½ acres, a gain of about ¾ of an acre per day. The value of this gain when but a few days are available for spring work, as is usually the case, is of utmost importance in getting the maximum amount of land prepared for seed and in giving the crop an early start.

On farms where large-sized teams can be used economically for plowing greater efficiency in harrowing, rolling, and planking usually can be obtained in the same way.

When you answer the advertisements always mention the Utah Farmer.

WANTED THE RIGHT PLACE

A very pretty but extremely slender girl entered a street car and managed to seat herself in a very narrow space between two men. Presently a portly colored mammy entered the car, and the pretty miss, thinking to humiliate the men for their lack of gallantry, arose.

"Aunty," she said, with a wave of her hand toward the place she just vacated, "take my seat."

"Thank you, missy," replied the colored woman smiling broadly, "but which gen'man's lap was you sittin' on?"—Exchange.

When you answer the advertisements always mention the Utah Farmer.

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Well Drilling Machines
Have a Business
Owners of "AMERICAN" Well Drilling and Prospecting Machines make large profits either as a regular business or a side line. The demand for wells is large, and from our extensive line comprising 59 styles and sizes, we can select a machine suitable for almost any locality or formation, and arranged for almost any kind of power. Write for new illustrated catalog No. 115, Free
THE AMERICAN WELL WORKS
General Office and Works: Dept. 36 AURORA, ILL.
Chicago Office: First Nat. Bank Bldg.

DITCHING
A Mile a Day
Is Easy With This Simplex.
Unequaled on irrigated farms for cutting or cleaning laterals. War time tool. Equals 100 men. Mostly all steel. Reversible. 10 days' trial.
Write for prices and money-back guarantee.
Consolidated Wagon & Machine Co., Salt Lake City, U.

YOU SAVE
From $7.00 to $15.00
on every saddle. Send for our free catalog from maker to consumer
THE FRED MUELLER SADDLE AND HARNESS CO.
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PAIGE SERVICE FREE
TO ALL PAIGE OWNERS
These Dealers Sell Paige Cars
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W. H. Barnard, Brigham City
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W. H. Vowles, Tooele
W. P. Preston, Ely, Nev.
Booth Mercantile Co., Midvale, Utah
Arrowhead Motor Co., Provo
Auto Lodge, Myton
W. N. Evans, Park City
N. Pope, Evanston, Wyo.
PAIGE MOTOR SALES CO. of UTAH
SALT LAKE CITY

HOME

FIFTY-FIFTY BREADS

Experiments have been conducted by the U. S. Food Administration in bread making.

Wheat flour has been reduced to 50 per cent in the yeast bread recipes. These breads are good, the grain is fine, though texture closer than 100 per cent wheat bread. Housekeepers can use the same recipes for 30 or 40 per cent breads by changing the proportions of flour.

The wheatless baking powder breads are very satisfactory. The one with oat and corn flour is extremely good, especially with nuts or raisins. These breads do not keep fresh as long as yeast breads.

Yeast Breads.

50 per cent wheat flour.
38 per cent wheat flour substitute.
12 per cent potato (1:4 basis).

Any recipe given below will make an 18 to 19 oz. loaf.

Method:

Make a sponge of the liquid, syrup, yeast, mashed potato and enough of the ground oats to make a batter. Allow to rise until light (about one hour) and then add the salt, fat and remainder of the oats and the flour. These doughs must be much stiffer than ordinary bread dough.

Knead thoroughly and allow to rise until double in bulk. Knead, mold into a loaf, and when double in bulk, bake 50 minutes to one hour. Begin in a hot oven (400 degrees F. or 205 degrees c.). After 15 to 20 minutes, lower the temperature to that of a moderate oven (390 degrees F. or 200 degrees C.) and finish baking.

Ground Rolled Oat Bread.

50 per cent wheat flour.
38 per cent ground rolled oats.
12 per cent potato (1:4 basis).

½ cup (107 c.c.) liquid, 1 tablespoon syrup, 1 teaspon fat, ½ cake compressed yeast, 1 teaspoon salt, 1½ cups (6 oz.) wheat flour, 1 cup (4¾ oz.) ground oats, ¾ cup (6 oz.) mashed potato.

Cornmeal Bread.

50 per cent wheat flour.
38 per cent cornmeal.
12 per cent potato (1:4 basis).

½ cup (107 c.c.) liquid, 1 tablespoon syrup, 1 teaspoon fat, ½ cake compressed yeast, 1 teaspoon salt, 1¾ cups (7 oz.) wheat flour, 1 cup (5 oz.) cornmeal, ¾ cup (6 oz.) mashed potato.

Barley Bread

50 per cent wheat flour.
38 per cent barley flour.
12 per cent potato (1:4 basis).

½ cup (107 c.c.) liquid, 1 tablespoon syrup, 1 teaspoon fat, ½ cake compressed yeast, 1 teaspoon salt, 1½ cups (6 oz.) wheat flour, 1 2-3 cups (4¾ oz.) barley, ¾ cup (6 oz.) mashed potato.

Cornflour Bread.

50 per cent wheat flour.
38 per cent corn flour.
12 per cent potato (1:4 basis).

½ cup (107 c.c.) liquid 1 tablespoon syrup, 1 teaspoon fat, ½ cake compressed yeast, 1 teaspoon salt, 1 2-3 cups (6¾ oz.) wheat flour, 1¼ cups (4¾ oz.) corn flour, ¾ cup (6 oz.) mashed potato.

1. The weights in parenthesis are exact, the household measures given approximate as nearly as possible these weights.

2. If dry yeast is used make the sponge with ⅛ to ¼ cake and allow it to rise over night. If liquid yeast is preferred, substitute ¼ cup for ½ cake of the compressed yeast and reduce the liquid in recipe to ¼ cup.

Baking Powder Loaf Breads.
(Using no Wheat)

Method:

Mix the melted fat, liquid, syrup and egg. Combine the liquid and well mixed dry ingredients. Bake as a loaf in a moderately hot oven (400 degrees F. or 205 degrees C.) for one hour or until thoroughly baked.

Nuts, raisins or dates may be added if desired.

Oat and Corn Flour Bread.

50 per cent ground rolled oats.
50 per cent corn flour.

¾ cup (177 c.c.) liquid, 4 tablespoons fat, 4 tablespoons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 1 1-3 cups (144 grams) (5 oz.) corn flour, 1 cup (144 grams) (5 oz.) ground rolled oats.

Barley and Oat Bread.

50 per cent barley flour.
50 per cent ground rolled oats.

1 cup (237 c.c.) liquid, 4 tablespoons fat, 4 tablespoons syrup, 2 eggs, 6 teaspoons baking powder, 1 teaspoon salt, 2 cups (144 grams) (5 oz.) barley flour, 1 cup (144 grams) (5 oz.) ground rolled oats.

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EAT MORE CHEESE
PLEA TO AMERICANS

The government has just started a drive to induce people to eat more cheese. Experts from the dairy division of the Bureau of Animal Industry are now traveling about the country spreading the cheese propaganda. The American demand for meat has not materially fallen off.

Whether this is due to the prevailing high wages, which permit many people to buy meat who never bought it before, or whether the meatless day is considered merely theoretical by most of the public, is a question. Something must be done. More meat must be released to our allies.

This year there was a 6,000,000-pound surplus of cheese in this country. The Food Administration bought this at 24c a pound for the allies.

Rationing Necessary.

Every belligerent is working hard to insure its men at the front an adequate meat supply. Most countries are now on a meat ration. This has not yet been considered necessary in America, but if we go on eating meat at our present speed, rationing will be certain. If we don't learn to like cheese and other meat substitutes by next year we may be compelled to. Cheese has never achieved the place it is said to deserve in our affections. It has never been used to any great extent as a staple in the American diet, being used more often simply as an appetizer or as a seasoning. There seems to be a popular impression that cheese is indigestible and constipating which, according to the department of agriculture, is entirely erroneous.

Easily Digested.

Experiments by the department demonstrate that 95 per cent of the protein of cheese is digested, while 90 per cent of its energy is available. "Even when eaten in large quantities and for long periods, no case of indigestion, constipation or other disturbance was observed in those who ate it." One man who ate 9.27 ounces of cheese daily in the place of meat for two years did a fair amount of muscular work and kept in good health. One pound of American cheddar cheese contains as much protein as 1.57 pounds of sirloin steak.

Cheese is much less expensive than meat, for there is not the waste of gristle and bone. Cottage cheese, one of the healthiest foods that can be eaten, is especially cheap, containing more food and yet costing less per pound than beef or pork or lamb.—Creamery Journal.

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COTTAGE CHEESE
Sandwich Filling.

Cottage cheese may be served as a sandwich filling, taking the place of meat or egg filling. Oatmeal, graham and Boston brown bread lend themselves well to cottage cheese sandwiches.

Variations: The cheese may be combined with grated dairy cheese, pimiento, horseradish, chopped or sliced olives, whole or chopped nuts, sliced celery, chives, Spanish onions, raisins, dates, prunes softened by soaking, freshly crushed mint leaves, honey, jelly or marmalade. These additions may be blended with the cheese, or may be spread in a layer over it.

Suggested luncheon or supper menu: Brown bread and cottage cheese sandwiches; corn on cob or other vegetable, milk or coffee; fruit or made dessert.

Cottage Cheese Club Sandwich.

This sandwich is made of three good sized slices of toasted bread, one or two of which are spread thickly with cottage cheese. Lettuce or water cress and salad dressing are also used. The rest of the filling may be varied to suit the taste or the larder. The sandwich is cut diagonally across, and served on individual plates with the halves arranged in a diamond shape. It is desirable to toast the bread on one side only and to cut it immediately after toasting, as otherwise the pressure of cutting crushes out the cheese and spoils the appearance of this sandwich. The cut slices may be placed together again while the sandwich is being filled, and the filling may be sliced through with a sharp knife.

Variations: In addtiion to cottage cheese, these club sandwiches may contain:

Tomato, lettuce, mayonnaise dressing.

Thin slice of cold ham spread with mustard, lettuce, mayonnaise.

Sliced tart apple, nuts, lettuce, mayonnaise.

Sliced orange, water cress, mayonnaise.

Sliced Spanish onion, pimiento, lettuce mayonnaise.

Two tiny strips of bacon, lettuce, mayonnaise.

Cucumber or green pepper, pimiento, lettuce, mayonnaise.

Sweet sandwiches may be made with layers of cottage cheese and marmalade. For these the bread need

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72-acre farm in Cache valley which we can exchange for Salt Lake City property. If you are looking for a very choice farm and have some good residence property in the city, I think we can locate you on something which will suit your requirements. This place has a good water right, sandy loam soil. Close to the railroad station and about 1½ miles from town. This is in a very productive section and good place to make a home, or we can sell this place at 10 per cent down at time of purchase and ten years on the balance, with 6 per cent interest. Purchase price $125.00 per acre. Purchaser would have to assume the water, which is not entirely paid for.

60 acres close to Tremonton, with a full water right in the Bear River canal, now planted to 40 acres of alfalfa and 20 acres of grain. This property has a two-room frame house, barn, granary and other outbuildings. This place is well located and a good buy at $160.00 per acre, on terms.

Will exchange for Salt Lake City property 160 acres in the Bear River valley, right on the canal, all under cultivation. Price $75 per acre.

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not be toasted, and the lettuce and mayonnaise should not be used.

Use: As the main dish of a light supper or luncheon.

Suggested menu: Cream soup, cottage cheese club sandwich, tea or coffee; dessert.

Cottage Cheese Sauces For Creamed and Scalloped Dishes.

Cottage cheese sauces are useful for creaming potatoes, eggs, toast and leftover vegetables, and for scalloping these and other dishes. The cheese materially increases the protein and lime content of the sauce, thickens it somewhat and unless the acid is neutralized with baking soda, it lends a slight sour or acid flavor which is desirable in some dishes and undesirable in others. From ¼ to ½ teaspoon of soda is necessary to completely neutralize the acid flavor of one cup of cheese. The soda should be dissolved in a little milk or hot water, and blended with the cheese.

Preportions for White Sauces with Cottage Cheese.

	Milk	Butter	Flour	Salt	Pepper	Cheese
Thin sauce	1 cup	½ tbsp.	½ tbsp.	1-3 tsp.	Dash	¼ cup
Medium sauce	1 cup	½ tbsp.	1 tbsp.	1-3 tsp.	Dash	¼ cup
Thick Sauce	1 cup	1 tbsp.	2 tbsp.	1-2 tsp.	Dash	¼ cup

Varialons: Add 1 tablespoon of grated American cheese and reduce fat by half. Season with cayenne pepper.

Add 1 tablespoon of peanut butter, blended with the cheese.

Mix a little curry powder with the flour used in the white sauce foundation, and add onion juice if desired.

Add a few drops of Worcestershire sauce and some finely chopped parsley.

Add chopped parsley and pimiento; this sauce is especially good for creamed potatoes.

Method of Mixing: Make the sauce by any desired method, cook it thoroughly and cool it slightly before adding the cheese. Stir the sauce gradually into the cheese till well blended, then reheat carefully. If the cheese is strongly acid it may curdle the sauce unless the acid is neutralized. Avoid boiling the sauce for this will toughen the curd and make it more difficult to digest.

Cream of Cottage Cheese Soup.

Make thin cottage cheese sauce (see preceding rule) neutralizing the acid of the cheese with baking soda. Season by reheating with the soup a slice of onion, a small slice of the yellow part of the lemon rind, and a blade of mace or a little nutmeg. No one of these flavors should predominate and the seasoning should be very delicate. Serve croutons with this soup.

Suggested supper menu: Cream of cottage cheese soup, croutons; fried potatoes and dandelion greens; or green corn on the cob, and tomato and lettuce salad; toasted corn muffins, tea or coffee; fruit or dessert.

Cottage Cheese and Peanut Butter Soup.

Make thin cottage cheese sauce (see preceding rule) neutralizing the acid of the cheese with baking soda. Blend the peanut butter with the cheese before adding the sauce, using 1 tablespoonful of peanut butter for each cup of the sauce. Season with a slice of onion, a bit of bay leaf and a pinch of powdered sage heated with the milk.

RELATIVE VALUE OF BEANS

Why don't we eat more beans? They have the food value, as the following table will show.

According to the authoritative data given herewith, the Pinto bean ranks above the navy and the lima bean in nutritive value.

These figures represent average analyses and are taken from "Foods, Their Origin, Composition and Manufacture," by William Tibbles

Fuel Value Per Pound.

Pinto Beans	1631 Calories
Navy Beans	1605 Calories
Lima Beans	1563 Calories
Soy Beans	1905 Calories

RELATIVE COMPOSITION

Variety	Water Per Cent	Protein Per Cent	Fat Per Cent	Carbohydrate Per Cent	Ash Per Cent
Pinto Bean	7.5	21.9	1.3	65.1	4.2
Navy Bean	12.6	22.5	1.8	59.6	.35
Lima Bean	10.4	18.1	1.5	65.9	4.1
Soy Bean	10.8	34	16.8	33.7	4.7

THE TIME TO PAINT.

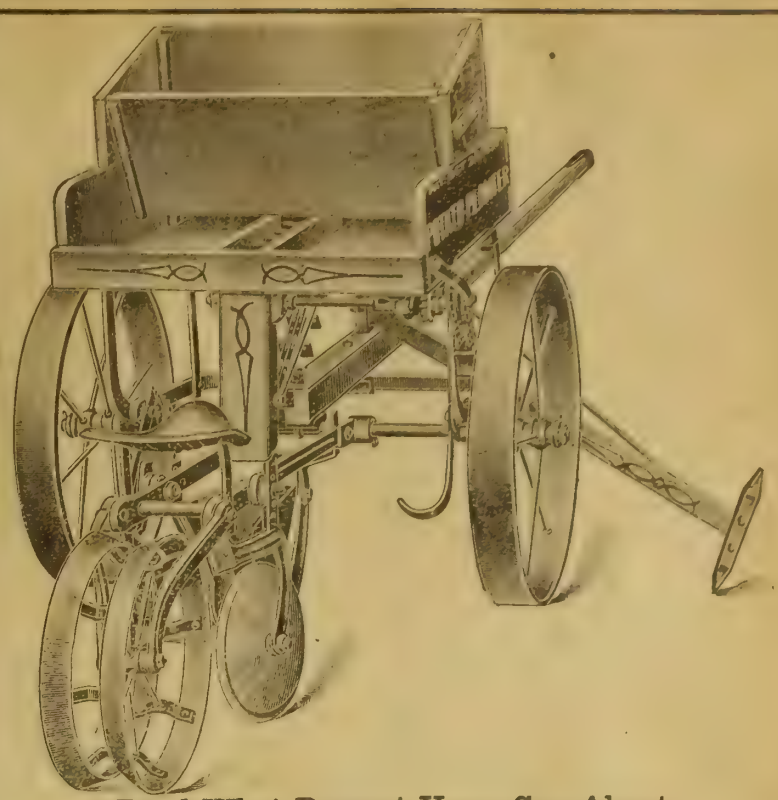
In the spring, when nature clothes herself anew, is the time to paint the farm buildings and rejuvenate the premises. There is something in the very atmosphere of spring that arouses a desire to make improvements. The warm sunshine and the balmy air invite one to the open and in sympathy with the buidding trees, the fresh green grass and the opening flowers one catches the spirit of rejuvenation. So with rake and hoe, with hammer and paint brush, we proceed to make the changes that we see are needed. We remove unsightly objects and plant flowers and shrubs, we make needed repairs and brighten up the soiled and weather-beaten surfaces with paint.

It is real economy to paint and the wonder is that so many farmers leave their buildings unpainted. They do not realize that frequent painting is not an expense but the best kind of property insurance. Good paint, applied at frequent intervals, will preserve lumber almost indefinitely, while wooden buildings poorly painted or not painted at all, decay rapidly. Painting is practically the only protection the property owner has against this untimely depreciation.

Nor can painting that is needed now be well postponed to a later time. To do that means that in the meantime the surface will be left without adequate protection, and that moisture and the attending decay will gain a foothold. Decay, once started, is almost impossible to stop. And later when the painting is done the surface will be in such a poor condition to receive it, that more paint will be required and it will be much more difficult to obtain good results.

Some may think the price of paint is too high and defer the painting of their buildings on that account. As argument against this assumption the manufacturers of a certain brand of paint point out that never has paint been so cheap, comparatively, as it is at the present time. While the retail price has increased from $2.75 a gallon a year ago to $3.50 at the present time, compared with lumber and other staple commodities, it is still relatively cheap. Actually, paint, far from being high, is a real bargain. How long its present price will continue no one knows but the prediction is made that it is at the lowest level it will be for many years. This being so, now is certainly a good time to have the buildings painted.

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.



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LIVE STOCK

STAY WITH THE SOWS AT FARROWING TIME

L. H. Weaver, Missouri, A. C.

Farrowing time is the most critical season for the swine herd. At no other time will care and attention pay greater returns. The results of several months of labor and care may be lost by neglect at this period. Emphasis is justly placed on prolificacy of brood sows, but the number of pigs which they farrow is not the most important consideration. The number they raise determines whether the sow has been kept at a profit or loss. The sow which farrows five pigs and raises all of them is more profitable than the one which farrows fifteen and saves two or three. The disposition of the mother has much to do with the number of pigs she will raise. The way she is handled influences her disposition and consequently the results that may be expected.

Strict account should be kept of breeding dates and a week or so before a sow is due to farrow she should be removed from the other sows to the quarters where she is to farrow. The feed just before farrowing should be the same kind that will be fed while the sow is suckling her pigs. This feed should contain plenty of protein and should also be laxative in nature. A ration of corn 50 per cent, shorts 25 per cent, bran 15 per cent, linseed oil meal 10 per cent, should give good results; and while it is not recommended as the best ration, it can be taken as an example, and similar rations may be used successfully. A few days before the sow farrows the amount of the ration should be reduced somewhat. If this is done, and a laxative feed is fed, the sow will come up to farrowing time without fever and will, for this reason, not be apt to injure the pigs by her own restlessness.

The quarters should be warm enough that excessive bedding will not be required. If too much bedding is provided, the pigs may become hidden in it and smothered or crushed. A bushel or more of wheat chaff or cut straw will be sufficient. After the sow farrows, it may be necessary to change the bedding, but the amount need not be increased. Dry bedding is more important than the amount of bedding. It should be changed often enough to maintain a dry bed.

Individual cots will be found valuable for keeping the sows away from other hogs at farrowing time. Usually the less the sow is disturbed when she is farrowing, the better. It is important that one be on hand, but unless she needs assistance, keep away from her. If the sow needs assistance, be as quiet in giving it as possible. The pigs should not become chilled before they have dried and suckled. If the weather is very cold, a lantern hung in the top of the cot will be of service. At such times, if the sow is gentle, it is well to place each pig as soon as it farrowed in a barrel or box containing some warm bricks, covered with old sacks. The pigs may be left here until they are dry and lively enough to be returned to the sow. If pigs do become chilled, there is no better way to revive them than to dip them in warm water.

The sow should not be fed much for twenty-four hours after farrowing. The pigs are not able to take much milk, and the milk flow should not be stimulated for the first few days. The sow will be more or less feverish and should have all the water she will drink, but will not need feed for a day or so. If the weather is cold, it is well to take the chill off the water before giving it to her. The first feed should be the same kind that she received before she farrowed and should be fed in small amounts as a thin slop. The feed may be gradually increased as the pigs become able to take the milk until the sow receives all she will eat of a good, laxative, milk producing feed. Ordinarily about two weeks should be taken to get her on full feed. After the pigs are old enough to take all the milk, the sow can produce, she should be fed liberally, since there is no better way of feeding pigs than through the mother.

SUCCESSFUL PORK PRODUCTION

W. J. Carmichael.

Success depends on good management from the beginning and special attention during critical times.

Use of breeding animals of the proper type will go a long way toward good results.

Careless methods cause failures even though royal-blooded stock is selected. In fact, blood lines can mean nothing without good care.

Cultivate an interest in the swine and give them more than passing attention.

Educate yourself to know whether they are doing well. See that they are active, eating regularly, and gaining properly.

Study the sow and keep her bowels loose by exercise and laxative feeds.

Strive to keep her free from parasites, away from cattle and horses, and see that she is comfortably housed.

Fill the mineral feeder with charcoal 5 parts, ground limestone 2 parts, and salt 1 part, to help her physical condition and furnish lime for bone growth in her and her pigs.

Under ordinary conditions, this mixture will give good result when fed with a ration such as corn and oats, equal parts.

Litters, are usually stronger, though, if some skimmilk, tankage, legume hay, or mill feed is also fed. In summer use pasture as much as possible.

Put the sow by herself before she farrows and have her quarters clean, dry, and free from drafts.

Ordinarily, the sow will have no trouble farrowing if her bowels are loose, but it is best to watch her closely and assist her if necessary.

Right after the pigs come, give the sow all the water she wants, but keep feed away for at least one day, then begin feeding a thin middlings slop and get her on full feed in about 14 days.

Keep the sow and pigs exercising every day and don't let the pigs get too fat or thumps will develop.

Put only a small number of sows and litters together, keep them growing, but don't over-feed. Scours frequently follow in the path of a ration of poor-quality feeds or of sudden changes in feed.

Refuse or garbage often causes pigs to scour. Therefore, it is better to feed such materials to shoats than to sows with litters.

Often canker sore mouth develops, beginning with a dry scab around the sharp tushes, or wolf teeth, which the little pigs have at birth. The sharp teeth do not cause the canker.

Don't be afraid to remove the scab and paint the part freely with tincture of iodine or a strong solution of of potassium permanganate (1½ oz. to one gal, water).

Unnecessary losses can be avoided by isolating affected litters and keeping up the treatment. Sanitation here is of prime importance.

Certain parasites weaken the pigs and may cause death. Worms are among the worst, but may be well checked by the use of 2 grains of santonin and 2 grains of calomel in a capsule for each 50-pound pig, given

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each pig separately after it has been without feed for a few hours.

Those little yellow specks on the hair behind the ears are nits from which lice hatch. Destroy lice by the use of crude oil as a dip or spray.

In the third or fourth week the pigs will usually begin to eat from the trough. Give them a little milk or slop daily to supplemnt the sow's milk; they will do better for it.

Only a few good swine producers wait until after weaning to castrate pigs. Better do it at least a week before the sows and pigs are separated, and do it carefully. Disinfect thoroughly before and after making the incision. A 10 per cent solution of almost any animal dip is good for this purpose.

Never let yourself think that the weaned pig is raised. He still needs attention other than being fed. Give him the minerals mentioned, worm treatment, and crude oil, if needed—and above all, keep him growing with a good ration. He'll pay for his feed.

INCREASE OF HORSES

More Animals on Farms Notwithstanding Large Use of Motor Vehicles and Demands of Army.

Substitutions for the horse have so far failed to diminish his number on farms, where he is mostly bred Since he was first separately counted in the census of 1850, his number has grown from 4,336,719 on farms in that year to 10,357,488 in 1880, to 18,267,020 in 1900, and to 19,833,113 in 1910, and the recent estimate of the United States Department of Agriculture for 1918 makes the number 21,563,000.

The railroad did not verify the common prophecy of the horse's gloomy future nearly a century ago, and many years elapsed before the heyday of the bicycle arrived with its expected menace to the horse. That machine of pleasure and toil diverted attention from the first real antagonist of the horse, the electric street railway, and this was a formidable one. Street-car service could not have been developed by horses to the extent that it has been carried by electricity, yet there was an enormous displacement of horses when they no longer pulled street cars. It is roughly estimated that 2,000,000 horses would be required to move the street cars now in city service and that farmers would need to keep a stock of perhaps 3,000,000 horses to produce this supply. Yet, horses kept on increasing.

Replacement of Horses by Motor Cars Exaggerated.

Apparently the most effective foe of the horse has appeared in the last 10 years in the motor vehicle, although its importance in this respect is popularly exaggerated. According to statistics collected by the United States Department of Agriculture, the total State registrations of motor cars were 48,000 in 1906, about 500,000 in 1910, over 1,000,000 in 1912, over 2,400,000 in 1915, and 3,512,996 in 1916.

Automobiles do not mostly displace horses but many are used by men in occupations dependent on either horses or automobiles for personal movement, such as real estate agents, builders, and some merchants and manufacturers, and there is also the large public automobile passenger service in cities and, again, the large number of automobiles owned by farmers in place of driving horses. The bulk of the automobile owners, off farms, however, would not be owning horses as the alternative.

Motor Truck Displaces Three Horses.

With motor trucks and commercial vehicles the case is different. Here is clearly a complete substitution of fuel power for horse power. It is the opinion that every motor truck on the average displaces three horses. The State records often merge the registration of motor trucks and commercial vehicles with that of automobiles, but, to the extent that the separation is made, it is known that 118,682 of the former were registered in 1916. Probably the displacement of horses by motor trucks and commercial vehicles represents a stock on farms of a few million horses, and to these must be added the stock eliminated by the automobile.

Last of all, the farm tractor has appeared, with conjectural possibilities, but as yet with no perceptible displacement of horses in the country at large.

War Increases Demand for Horses.

Unusual and large demands for horses for war purposes have been made since the autumn of 1914. During the 10 years preceding, from 19,000 to 40,000 horses were exported annually, while the imports were from 5,000 to 33,000, so that the net exports were no appreciable draft on domestic production. In the first year of the war 289,340 horses were exported, in the second 357,553, and in the third 278,674 horses, and within less than a year the needs of the Army of this country have called for a large number of horses.

Nothwithstanding the various forces that have been working against increase of horses on their breeding places, or rather, in common expectation, to reduce their numbers at a strong rate, the fact is that horses on farms increased at the average yearly rate of 183,000 since 1900 and more than that since 1910(of 216,000 per year. Per capita of the population, farm horses tended to increase from 0.19 of 1 horse in 1850 to 0.24 in 1890 and 1900, after which the decline has been to 0.20½ in 1918, or still above 1850. At the same time, however, by means of machinery the farm horse has constantly gained as a producer.

Farm Price Decreases.

Strange though it may seem, the average price of a horse at the farm, all ages and conditions included, is less than it was four years ago, and even eight years ago. Since 1897 horse prices at the farm for January 1 had risen from $31.51 to $111.46 by 1911, the highest average in the Department of Agriculture's record of 58 years, but a decline followed to $101.60 in 1916 and then a gain to $104.28 in 1918, apparently caused by the war. The explanation of the arrested advance in price and subsequent decline is said to be 'gasoline," although this motor fuel has not yet caused a decline in the number of horses.

DRY STABLES, SOUND FEET

A. S. Alexander.

Every practical horseman knows that the disease known as thrush is caused by allowing the horse to stand with his feet constantly in wet and filth; but few, comparatively, understand that canker of the frog and sole is caused in the same way.

Thrush is characterized by inflammation of the fine skin between the toes in cattle; pus forms and tends to under-run the horny wall of the foot. In horses the frog is the part affected, and its cleft normally shallow, becomes deep and exudes a thin, foul-smelling liquid. Gradually the frog becomes rotten and loose and the disease may spread to the surrounding parts; lameness is rare.

Canker of the frog, and sole, differs from thrush in that the horn of the sole becomes soft or spongy and readily bleeds when cut. In canker, the sensitive tissue (pododerm) of the sole, which ordinarily is covered with solid horny tissue, seems to have taken the place of the solid materials. The sole is made up of sprouting fungous tissue and is extremely sensitive and vascular. If it be cut away it may grow again in a single night and the entire affected part is covered with a stinking fluid.

Prevention is all important in these diseases. Stable management should be such that no horse is allowed to stand for any length of time in wet and filth. In horse stables where the manure is removed "now and then," the "nows" and the "thens" sometimes coming months apart, so that the horse has to jump into bed over a high barrier of manure, it is little wonder that the animal contracts thrush or canker.

Treatment of thrush consists in removing the cause, cleansing the affected foot thoroughly, then cutting away all loose, rotten and under-run horn of the frog and on each side of it, and packing the cleft of the frog full of calomel, or a mixture of calomel, powdered wood charcoal, subnitrate of bismuth and slaked lime. This is to be covered with oakum, upon which pine tar has been spread, and the dressing is to be renewed at intervals of three or four days. The stall floor should be kept clean, sprinkled with slaked lime or gypsum (land-plaster) and bedded with sawdust or planing-mill shavings.

Canker is best treated by the trained and experienced veterinarian, but there is no specific remedy. Before succeeding with a bad case it usually is necessary to alternate remedies and try a great number. The first step in all cases should be to cut down the sprouting growth level with the walls of the foot; then it is usual to cauterize the sole with a red hot iron or with some strong caustic. We usually employ terchloride of antimony, or full strength formaldehyde to start with, and if that does not suffice change to chromic acid, or strong nitric acid. After applying the caustic, oakum saturated with tincture of iron, or a solution of two ounces of sulphate of copper (bluestone) to the pint of hot water, is bound upon the sole in such a way as to cause firm pressure, for pressure is absolutely necessary. The dressing is changed or renewed every twenty-four hours. Dry dressing powders also are useful, such as a mixture of equal quantities of calomel, subnitrate of bismuth and tannic acid or burnt alum, or a cheaper mixture of slaked lime, alum, sulphur and charcoal, naphthalin sometimes is added.

DOCKING LAMBS

Hands and Knife Must Be Clean—Twist Artery to Stop Bleeding.

Lambs are docked to render them cleaner and to prevent filth diseases. Two men can handle the work with dispatch if they work systematically. One man holds the lamb by the hind legs with head down, facing outward. The operator grasps the tail, pushes the skin on the tail toward the body and with one clean cut ampultates at a joint. It is important to have clean hands and a clean knife. To check hemorrhage, binding the tail, the hot iron and caustics are obsolete. A quick and effective way to check hemorrhage is to grasp the end of the bleeding artery with artery forceps and twist it once around. A quick application of antiseptic solution to the wound and the operation is completed. The injury to the flock from the loss of too much blood, or the loss of one or more lambs from incompetent surgery would pay for the services of a competent veterinarian.—Geo. H. Glover, Colorado A. C.

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Miss Milly was rather a talkative young lady. Her bosom friend, having missed her for some time, called to find out the reason.

"No, mum, Miss Milly is not in," the maid informed her. "She has gone to the class."

"Why, what class?" inquired the caller in surprise.

"Well, mum, you know Miss Milly is getting married soon, so she's taking a course of lessons in domestic silence."—Tit-Bits.

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"The Laboratory That Knows How"

THE WAY YOUTH FIGURES IT

"Mother," said the little city girl, on her first visit to a large dairy farm, "somebody had best hurry right out to the barn."

"What in the world is the matter, Ellen?" the parent inquired in considerable alarm.

"There's somethin' dreadful happenin'."

"What, what is happening, dear?"

"I just saw a calf skimmin' all the cream off a bossy cow."—Hoard's Dairyman.

Be sure and read the advertisements, it will pay you.

Hides and Skins

Enormous Increase in Consumption Resulting from Extraordinary War Demands.

Consumption of all kinds of hides and skins in this country increased from 1,221,000,000 pounds in 1900 to 1,557,000,000 pounds in 1909, followed by nearly the same consumption in 1914. Under the extraordinary demands caused by the war, the consumption of 1915 increased enormously to 1,885,000,000 pounds. For the purpose of determining these numbers, nearly all hides and skins are expressed in green, green salted, or pickled weight.

An article that is to appear in the Yearbook of the United States Department of Agriculture for 1917 states that by far the principal item in these grand totals is cattle hides, of which 877,000,000 pounds were consumed in 1900, 1,101,000,000 in 1909, 1,009,000,000 in 1914, and 1,238,000,000 pounds in 1915.

In order of weight, sheepskins stand next to cattle hides in consumption, although much below, and 115,000,000 pounds of these skins were consumed in 1900, followed by increase to 171,000,000 pounds in 1914, and 199,000,000 pounds in 1915.

Closely following sheepskins is the item of calfskins, the consumption of which in 1900 totaled 92,000,000 pounds, with an increase to 142,000,000 pounds in 1909, followed by decline to 124,000,000 in 1914, while the greatest consumption of calfskins for any year occurred in 1915, with a weight of 158,000,000 pounds.

Large Demand for Goatskins.

Goatskins have had a large and important demand in this country for many years and are mostly imported. In importance of weight they follow calfskins, except that in 1915 they exceed calfskins. Their consumption in 1900 was 78,000,000 pounds; in 1914, 124,000,000 pounds, and in 1915, 193,000,000 pounds.

Buffalo hides have supplemented cattle hides in consumption to such an extent that their weight increased from 19,000,000 pounds in 1900 to 47,000,000 pounds in 1915. Horsehides increased from 3,000,000 pounds in 1900 to 41,000,000 pounds in 1915; Kangaroo skins ranged from 750,000 to 1,250,000 pounds during this period; pigskins from about 500,000 to nearly 1,000,000 pounds (perhaps an understatment); dogskins from 6,000 to 18,000 pounds; and miscellaneous skins, composed mostly of deer and antelope varieties, declined from 36,000,000 pounds to 6,900,000 pounds.

Per Capita Consumption.

The per capita consumption of domestic and foreign hides and skins, as well as the foregoing total consumption, has been computed with the exclusion of exported sole leather, calf upper, and glazed-kid upper converted to hide and skin weight, and is approximately at tanners, consumption. This consumption increased from 16.1 pounds in 1900 to 17.2 pounds in 1909, declined to 15.3 pounds in 1914, and jumped to 18.8 pounds in 1915. If exports of manufactures of leather expressed in terms of hides and skins were excluded, these figures would be somewhat lower.

Domestic hides and skins have been declining as a fraction of the total consumption. From 1900 to 1915, domestic calfskins declined from 67 to 36 per cent of the entire consumption, or from about two-thirds to one-third, exported calf upper leather being excluded; cattle hides from 94 to 56 per cent, or from nearly the whole consumption to a little more than one-half, exported sole leather being excluded; and sheepskins declined from 75 to 48 per cent, or from three-quarters to less than one-half.

When all domestic hides and skins that enter into consumption are combined, exports of sole, calf upper, and glazed kid upper leather, converted to terms of hides and skins, being excluded, the general decline of hides and skins of domestic production as a fraction of the total consumption is tersely expressed as from 75.3 per cent in 1900, to 59.4 per cent in 1909, to 46.3 per cent in 1914, and to 38.1 per cent in 1915. Otherwise stated, the decline from 1900 to 1915 was from six-eighths to three-eighths, or to one-half of the former fraction, partly caused by war demands.

You May Stay at Home —but You Can Help Win the War

YOU—"*The Man with the Plow*"—may look far afield, your thoughts may be of the boys in the trenches, you may even feel a strange tugging at the elbow, but your task just now is to plow and plant and produce. *Your* fight is in the "supporting line." And from that line must come the strength of the

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—The great organization of mercy, whose activities know no bound in territory, no limit in service.

The atrocities of our enemies have made war's suffering doubly great, but that suffering is being relieved by the Red Cross. In Belgium, in France, in Serbia, in Armenia—wherever war has spread its misery, the Red Cross is at work; nursing the sick and wounded, feeding and clothing the destitute, rebuilding devasted lands—even preparing crippled soldiers for new lives of greatest usefulness and independence. And for this great work your money is needed.

Your Red Cross is an all American, largely volunteer, organization, authorized by Congress, headed by President Wilson, audited by the War Department, enthusiastically approved by your Army, your Navy, and your Allies.

The work covers both military and civilian relief in every war-torn Allied country and full reports of all expenditures are continually being published, or are available through the Chapters.

Every cent of every dollar received for the Red Cross War Fund is spent for war relief. All administration costs and relief work for other than war purposes (such as the Halifax and Guatemala disasters) are taken care of out of membership dues, and the interest which accrues from the banking of the War Fund has made actually available for war relief at least one dollar and two cents for every dollar contributed.

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This space contributed for the Winning of the War by

THE PUBLISHER OF THE UTAH FARMER

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending April 30th—Cattle—Receipts, 3,291; market, steady; choice steers, $11.00@12.50; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $9.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $7.75@8.50.

Hogs—Receipts, 1,009; market, steady; tops, $17.00; bulk of sales, $17.00.

Sheep—Receipts, 8,845; market, steady; lambs, $17.00; ewes, $9.00@10.50.

North Salt Lake, May 1.—Cattle—Recepits, none; market steady; choice steers, $12.50@13.00; good steers, $10.00@11.50; fair steers, $7.75@9.50; choice cows and heavy heifers, $8.75@10.00; fair to good cows and heifers, $7.50@8.75; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $7.50@8.25; bologna bulls, $6.50@7.00; veal calves, $8.00@10.00.

Sheep — Receipts, 295; market steady; good choice grain-fed lambs, $16.00@17.50; choice yearling wethers, $13.00@15.00; fat wethers, $12.50@14.00; fat ewes, $10.00@12.00.

Hogs Receipts, 154; market steady; choice smooth fat hogs, 175 to 250 pounds, $17.10.

Omaha, May 1.—Hogs—Receipts, 17,000; market 15c to 20c lower; heavy, $16.60@16.80; mixed, $16.65@16.85; light, $16.70@17.05; pigs, $10.50@15.50; bulk of sales, $16.65@16.85.

Cattle—Receipts, 8400; market steady to 10c higher; native steers, $11.40@17.00; cows and heifers, $9.50@13.50; western steers, $10.00@14.50; Texas steers, $9.00@11.50; cows and heifers, $9.00@11.50; canners, $7.50@8.75; stockers and feeders, $8.00@13.25; calves, $10.00@13.00; bulls, stags, etc., $9.00@13.00.

Sheep — Receipts, 5300; market steady to stronger; yearlings, $16.50@17.50; wethers, $14.50@16.50; ewes, $13.75@16.25; lambs, $19.20@20.20.

Mention Utah Farmer when writing to advertisers.

Overhauling The Harness

Several years of service can be put into a farm harness by giving it a regular and systematic overhauling occasionally. If this is to be done only once a year, the best time to get at it is before the spring work starts. A harness maker once said he would have to quit business if every farmer to whom he sold a harness took the proper care of it. He said the service of a harness which is taken care of will more than exceed the life of the horse that wears it, and that he knew of harnesses that were still good after having been used for twenty to twenty-five years.

Harness leather is away up in price, and it will be time well spent to give each set of work or driving harness a thorough cleaning and oiling. Machines which are not kept properly lubricated with a good grade of oil soon wear out, and it is much the same with a harness. Unfortunately, the harness makers have not been able to equip the harness with automatic oiling devices, as is the case with machinery of some kinds. This fact, however, does not lessen the importance of systematic oiling, which will increase the efficiency and years of service of any harness.

The best way is to go about the matter in a businesslike way, by taking the harness apart and giving each piece attention. One should have a warm room, a tub of hot water, a brush with good stiff bristles, some good harness soap, and a quantity of oil to rub into each piece of leather.

Many pieces of the harness will be smeared with a coating of dirt and grease caused from sweating. To remove this it is necessary to use some "elbow grease" with a combination of hot water, soap and brush. The water should be as hot as the hand can bear, and after a strap has been cleansed, it may be hung up to dry. In a warm room the leather will dry sufficiently in a few hours. It should not be allowed to get entirely dry, however, as it will then be too stiff for absorbing the oil. It is about right when it feels dry to the touch, but yet is fairly pliable.

After the various pieces of the harness have been washed and dried as suggested, they are ready for the oiling process. For this neatsfoot oil undoubtedly is best. It may be mixed with an equal quantity of good, black harness oil, which will give a black color to the leather. The slightly warmed oil is rubbed into each piece until the leather has taken all it will absorb. If any of the pieces fail to become soft and pliable with this treatment, they had better be replaced, as the leather is dead and is apt to break at an inopportune time. After the pieces have dried for some time, the harness may be put together again, the surplus oil being wiped off with a soft rag.

In oiling a harness, it is a good idea to have a flat board, which can be used year after year for the same purpose. Any board absorbs a certain quantity of the oil, and it will be more saving of the oil if one uses a board already partially saturated.

In putting the harness together, one should watch for weak straps and replace them with new ones. If there is a sewing awl or rivets available, many repairs can be made at home. The best method of getting the harness together is to fit each piece to the horse, paying special attention to the collar and hames adjustments.

The collar is a part of the harness outfit which must not be overlooked. It may be cleaned and oiled the same as other parts. All hard crusts of dirt or blood or other matter must be washed off until the surface is smooth and soft. Otherwise, it will cause ugly shoulder sores when the horses are pushed into heavy draft work in the spring. If the collar is kept properly cleaned and is made to fit the shoulders, no sores should develop.—Wallace Farmer.

POTATO'S VALUE AS A HOG FEED

As a growing or as a fattening ration potatoes alone are not an efficient hog feed. Grain should be fed with them and usually it will pay to add a protein supplement such as milk, oilmeal, or tankage. Grain is the standard hog feed. If the feeding value of potatoes can be stated in terms of grain their monetary value can be readily ascertained.

Here are three such values. The Denmark station says 4 pounds of potatoes will replace 1 pound of mixed grain; the Wisconsin station says 4½ pounds of potatoes will replace 1 pound of cornmeal; the Oregon station reports that 5½ pounds of potatoes are equivalent to 1 pound of barley. On the basis of the Wisconsin results, $1.50 corn is as cheap a feed as potatoes at 35½ cents a bushel. Or, a bushel of potatoes will replace 13½ pounds of corn. In a recent test by the United States department of agriculture at Belsville, Md., potatoes were compared with corn. To replace a pound of corn 5.85 pounds of potatoes were required. Moreover, the potato ration required for each 100 pounds of pork produced 27 pounds more of protein supplement than was required on a corn ration.

Feed grain with potatoes. Many feeders consider cooked potatoes more efficient than raw ones. One plan is to steam until cool enough to feed. Use from one-sixth to one-fourth as many pounds of grain as of potatoes. Any grain is good. Add milk if possible. If not available, add one pound of oilmeal or half a pound of tankage to each fifteen pounds of grain-potato mixture.—R. C. Ashby, Minnesota A. C.

Fortunate is the home that has taken privision for the future. The larder should be filled, the pantry supplied, the cellar packed and the smoke house, corn crib and hay lofts full to their capacity. This is the kind of preparation to make for winter.

Makes Easier Pulling

Lighten the load of your horses and keep the axles of your wagon thoroughly protected with an axle grease possessing a pure graphite base.

YANKEE Axle Grease

is just the axle grease you cannot afford to be without this summer. Extra demands are being made on your farm equipment. Yankee Axle Grease will help you to meet these demands.

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Some good spring litters. Richard Defende rand Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.
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White Leghorns, Brown Leghorns, $12.00 per 100.
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Priced from $60 to $175.
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WANTED to hear from owner of good Ranch for sale. State cash price, full description, R. F. Bush, Minneapolis, Minn.

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Write or Phone Today for our Prices on thoroughbred **Irish Cobbler, Ohio and Rurals.** These will pay you to plant.

P.-W's. Mountain Grown Seeds for the Crop that "goes over the top."

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We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
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Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as "Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

$1000 Per Acre

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Good quality is our first consideration. Better order early this year as the demand is sure to exceed the supply. Full line of Standard Colony Brooders and Hovers, also best kinds Baby Chick Feeds.
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Strictly first class home raised and acclimated horses. Will weight at maturity 1700 to 2100 pounds. Some of the dams are mares imported from France and all got by the great stallion Casino Yet. Must be sold to make room for colts coming on.

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KEEP THE FARM AT TOP NOTCH EFFICIENCY

It is not an unusual thing in every community to hear it said of some particular farm: "It was a mighty good place when 'So-and-So' was running it." In a great many cases the productivity of a farm is measured by the efficiency of whoever has it in charge. Under one management there is a large output of money-making material, while under another management the income scarcely equals the outgo. Undoubtedly the managing power of the farmer is of as great consideration as the natural characteristics possessed by the farm. The purpose of this article is to stimulate those who are not getting the most out of their farm to a consideration of the ways and means employed by the farmers who keep their farms at the top notch of efficienecy.

An example or two will help me to make my deductions clearer. A number of years ago a farmer of the writer's acquaintance purchased a farm nicely situated along a creek bottom. The previous owner had made money on the farm, having taken it in a comparatively raw state when a large part of the land was not under cultivation and leaving it well improved. When S. moved on the place the neighbors were wont to remark that he had acquired a mighty good property. They expected that he would make money hand over fist. Contrary to their expectations, however, he sold the property at the end of five years for less than he had given for it. In addition he was several thousand dollars worse off than when he assumed the ownership. What was the cause of his failure? Largely that he did not maintain the high level of production established by the previous owner. He was unable to keep the farm working continuously under full pressure. Here and there, at many points, there were leaks and inexcusable losses. He neglected to fertilize with the result that his soil dwindled noticeably in productivity. The creek was permitted to capture several acres of the farm and to flood considerable of the remainder. The previous owner had redeemed much of the farm from the same creek, and had managed to hold it in check by leveeing. The fences went uprepaired with the result that stock did a large amount of damage. All in all things went against S. and he finally sold out in disgust. The present owner is making lots of money on the place, and declares that his farm is the best yet. It is quite evident, however, that every resource of the farm is keyed to the top notch, and that there are no slacker elements. What one man could not handle another finds very profitable. The secret is in the management.

The other example I have in mind is of a farm well managed that becomes better managed. It was one owned by J. There was no question but that he was making money, and when he sold to C. there were comments of the same general character as those mentioned with regard to S. The new owner was not satisfied to let well-enough alone. Systematically he set about to make his land more productive than it had been previously. Fertilizers were applied judiciously. The better breeds of stock were introduced. Improved machinery was added to the equipment. Not a single item was omitted that experience proved to be an advantage. As a result C. is making more money than J. made, and is making it easier. He has learned how to get the largest returns from the resources as his command. He has establish a high level of efficiency, and he sees to it that none of the resources of his farm shirk doing their best. As a neighbor expressed it. "C. is an all-fired good manager."

It is to be regretted that there are not more farmers of the type of C. The agricultural world demands that farm resources be kept working at their best. Many well-managed farms could be better managed. There are thousands of acres of corn lands that could be made to produce one bushel more per acre. The same is true of wheat and oats and other cereals. A little critical observation convinces an observer that the American farm is not being forced to produce all that it might. Latent resources should now be urged to speed up a bit. There should be no slacker acres when the world needs food so desperately.

How can the farm be put at the top notch of efficiency? The answer is expressed in the phrase "good management." The details of the management, of course, can be given only in very general terms for individual conditions enter so largely into the matter. The highest degree of fertility for every acre is a rule that will not go amiss anywhere for it is of such general application. There should be the best physical equipment with which to work for equipment and production are twins. There should be the best breeds of livestock, for good farming and poor stock never go hand in hand. Above all this, however, there should be thoughtful consideration as to how to make the farm more productive. The farmer who weighs his conditions very carefully in nine times out of 10 is apt to make decided improvement. And the farmer who sets out to make his farm work at the top notch will come pretty close to doing it.—E. V. Laughlin.

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"THOSE WERE HAPPY DAYS"

Some one has brought out an old family diary kept early in the nineteenth century. In it chickens are quoted at two for 29 cents; 4 pounds butter at 67 cents; eggs at 16 cents per dozen; and a barrel of flour at $4.62. Beefsteak cost 7 cents per pound, and the hired girl was paid $1.00 per week; the family washing and ironing, 50 cents.

However, there is always a "fly in the ointment." Sugar was even higher priced than today, figured calico was as expensive as silk, and wooden clothespins were 25 cents per dozen. —Safety Hints.

THINGS WAR WON'T AFFECT

The appetite young hogs have for skimmilk.

The questions children ask at milkin' time.

The amount of butter that's needed on batter-cakes.

Pride in a pair of new working overalls.

The fact that babies just nachally love pure milk.

That summer is coming—and green pastures.

That little fishin' stream will sing just as sweet.—Exchange.

UT

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 41 LEHI AND SALT LAKE CITY, UTAH. MAY 11, 1918

Courtesy The Shorthorn in America.

Village Clipper, Grand Champion Bull, National Shorthorn Congress, Sold for $4,500 to the South Dakota Agricultural College.

Beef On High Priced Land

Frank Hillman.

The question is often asked, 'can e produce beef at a profit on high riced land?" I am going to try and nswer the questions by discussing e proposition and let you answer .

During the last few years the price our land has doubled, some of it ow selling for $200 to $300 per acre. little study will show that beef is eing produced in other places and they can do it we of course ought . England is today producing beef n land that in some cases is worth s high as $600 per acre. But the ethod is not the one used by mericans.

They use soiling crops and instead letting one steer gaze over an cre or two, they carry the food to e steer fresh and green and he is arn or stall fed. This saves lots of nning. However, this system is ot practical in the United States at resent. First, we Americans do not now how to work it, and we have ot the available help for such a ystem if we did know how.

With ranges gone, it is up to the farmers to produce good beef and cheap, and, as he has every other problem, he is slowly solving it. In a few years we may look for cheaper beef, not cheap beef, for that would not be possible.

The system of some of the farmers who have established beef producing herds is briefly that they raise alfalfa. This can in average years be counted on to raise about 4 and many times more tons per acre of good hay. Then they grow silage which, if properly handled, will produce 100 tons of feed on 7 acres or about 14 tons of feed per acre. Thus it will be seen that 1 acre of alfalfa producing 4 tons 1 acre of silage corn making 14 tons and 1 acre of corn making 80 bushels will furnish the necessary feed to keep two cows and their calves for a year or if supplemented with some pasture in the summer the three acres with two more of pasture should be enough to keep about five or six cows with their calves for a year. Ten acres should keep from 20 to 22 head

(Continued on page 12)

Feed for Wintering Beef Cattle

E. J. Iddings.

What To Provide To Follow Grazing Season.

The problem of wintering beef cattle is one that demands consideration in connection with planning the crop system for the coming season. In some districts grass may be provided for late fall and winter months by arranging the pastures that portions of them may be used lightly and saved for the winter to come. Meadows and hay lands of all kinds must be arranged, keeping in mind the needs of the beef herd in the months to come. Silage has become a prominent factor and in a few districts an almost dominant factor. In the business of breeding and feeding beef cattle, silage crops must be planted at an early date if the silos are to be filled for the use next fall and winter.

There was a time when nature took good care of the beef cattle man. Grass was abundant and large sections of range were so lightly grazed in spring and in summer that the grasses were left to care for the winter feed for both the breeding herd and the steers. Those days are, however, long past. The over-crowding of the range, the carving out of vast irrigated districts, the homesteading of great areas for dry farming, have forced the reduction of herds and have made necessary special provisions for winter feeding. The problem of winter feeding and care, therefore, becomes one of fundamental importance in any system of beef cattle management. The practice is quite uniform in depending upon grass for summer feed, but methods of winter management vary widely.

Forehandedness in storing feed, or purchasing it from others, for winter care of beef cattle, is the rule now in the west rather than the exception. The only question now apparently at issue is that of "how much and what kind to provide." Many depend upon grain fields, the aftermaths of meadows and the straw stack. Others provide well with alfalfa, silage and other forages, and plan to use these feeds with unsparing hand.

Nature Alone Not Sufficient.

Data secured by the United States

(Continued on page 13)

SUGAR BEETS

SUGGESTIONS TO BEET GROWERS

By Mark Austin.

Salt Lake City, Utah, May 7th, 1918.

Owing to the dry, windy weather, we have had during the last four weeks, it is noticed that some of the beet fields have become quite dry; in fact, so much so that the beets will not come up unless they are irrigated, or we have rain. As we generally get a rain about this time of the year, it is likely that we shall get one in the near future. In the event that we do not get rain between now and the 15th of May would suggest that our growers put irrigating shovels on their cultivators and furrow out every other row, using care not to throw any more dirt on the row of seed than can be avoided, then run sufficient water down the row to properly and thoroughly soak the seed. It would then be well to give the soil a light harrowing cross-wise of the field, before it gets too dry, which will keep the soil from baking and crusting; this is a matter however about which the farmer will have to use his own judgment, according to the condition of his soil and beets. Where there is two-thirds of a stand of beets, it would not be advisable to irrigate, unless the land is so dry that the beets cannot grow; this is some times the case on alfalfa or spring plowed land, in which event furrows should be made in every other row and the beets watered before thinning, then cultivate just as soon as the soil is dry enough. This will save the beets from being stunted. Beets are very often stunted in dry seasons on land plowed out from alfalfa the same spring it is planted to beets. While beets should not be watered too early, neither should they be allowed to get so dry as to injure them before they are irrigated. If they are allowed to get too dry they very often blight. Neither extreme is good for sugar beets.

Want to impress upon our growers the necessity of early and careful thinning. The beets should always be cultivated once before they are thinned and if at all weedy twice, then as often as is necessary after thinning to keep the land free from weeds and in first-class condition. Every time the beets are cultivated, it encourages their growth, and very often an extra cultivation will give a half ton more beets per acre. Many of our growers do not cultivate enough—more cultivation and less irrigation is better for the soil and plants. Cultivating puts life into the soil, aerates and warms it, for which the plant is very grateful.

In last week's issue of this paper, in an article by the writer 'THINNING AND CULTIVATING BEETS," due to a typographical error it inferred that it may not be necessary to cultivate before thinning. It is always necessary to cultivate before thinning.

EVERY SUGAR BEET COUNTS THIS YEAR

R. E. Miller.

This year more than ever before every sugar beet will count in the production of sugar. Some people did not and have not yet become converted to the shortage of sugar. The need however is apparent and increased production must come or we will be put on sugar rations.

The work in sugar beets is just commencing and thinning is one of the first and most important parts of sugar beet growing. Many farmers have not given the thinning of beets the attention it deserves and as a result they do not get a maximum crop.

Thinning comes at a time when the rush of work is on and too often the work is not carefully done. Every beet counts and where too many are cut out the stand is poor and tonnage smaller.

When John P. Holmgren grew that wonderful yield of 39 tons per acre a few years ago he did good thinning and went over the ground again and wherever a beet was missed he planted another with a hoe. He figured out there should be 31,363 plants to the acre and every one missed would reduce the tonnage just that much.

A row of beets 40 rods long with plants 10 inches apart has 792 in it. If you should do poor thinning and cut out every eighth plant by mistake, it means about one hundred in each row or about 200 pounds of beets and in ten rows a ton of beets worth $10, or one dollar a row loss.

We have to figure this down to rows and loss in dollars and cents in order to emphasize the importance of giving the thinning or securing of a good stand of beets a little more attention.

USE THE OLD, WEEDY ALFALFA FIELDS TO BETTER ADVANTAGE

By Mark Austin, General Agricultural Supt., Utah-Idaho Sugar Company.

There is a considerable acreage of alfalfa lands overrun with dandelions and other noxious weeds, giving a very small yield per acre, that, if plowed up immediately and planted to potatoes, corn or any other late crop would be excellent for sugar beets next year. In fact such land could be planted to barley any time this month and would give an excellent crop this year and would be in good shape for sugar beets next year. These lands would yield twice the value in potatoes, corn or barley, under normal conditions, than they will if left in their present state. If the farmer is short of feed, either barley or corn would help him out in that direction, besides which there is a good market for both. While potatoes and corn are the best forerunners for beets, still a good tonnage of beets has been secured following barley.

It is hoped that our growers will improve their farming conditions by taking a portion of their alfalfa land and plow under the green growth of alfalfa which the soil so much needs. The land should be irrigated before being plowed and then see to it that the green alfalfa is well covered; the seed bed should immediately be prepared and planted. The sooner this is done the better.

If the farmers would take hold of this in the right way, the question of feed and fertilizer would be solved, because next year the land will not only give a good tonnage of beets but a large crop of tops, which can be siloed for aobut $1.00 per ton, or about one-fourth of the cost of raising and stacking hay, per ton. Each acre of tops will feed about three times as much stock as a poor acre of alfalfa.

There are thousands of acres of alfalfa in Utah, in the beet growing districts in this condition. It is a shame that they should be allowed to remain in this unproductive state when food products are so much needed, besides which there is a tremendous loss to the farmer and country. Every acre of soil like everything else should be made to reach its maximum at the earliest possible moment.

We hope our growers will take advantage of this splendid method of farming and adopt it wherever possible.

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Despite the high cost of labor, we are maintaining full crews that there may be no part of the work slighted or neglected.

While the demands of the signal service of our armies have deprived us of many technically trained men, those who remain have spread out to fill the gaps by extra effort.

In some places congestion has occurred because we have been unable to secure equipment for relief, but in such cases the traffic is being handled to the full extent of human ability.

With the world rocking under the weight of war; with economic conditions unsettled and abnormal, we are striving always to coordinate our efforts to the great problems involved in the winning of the war.

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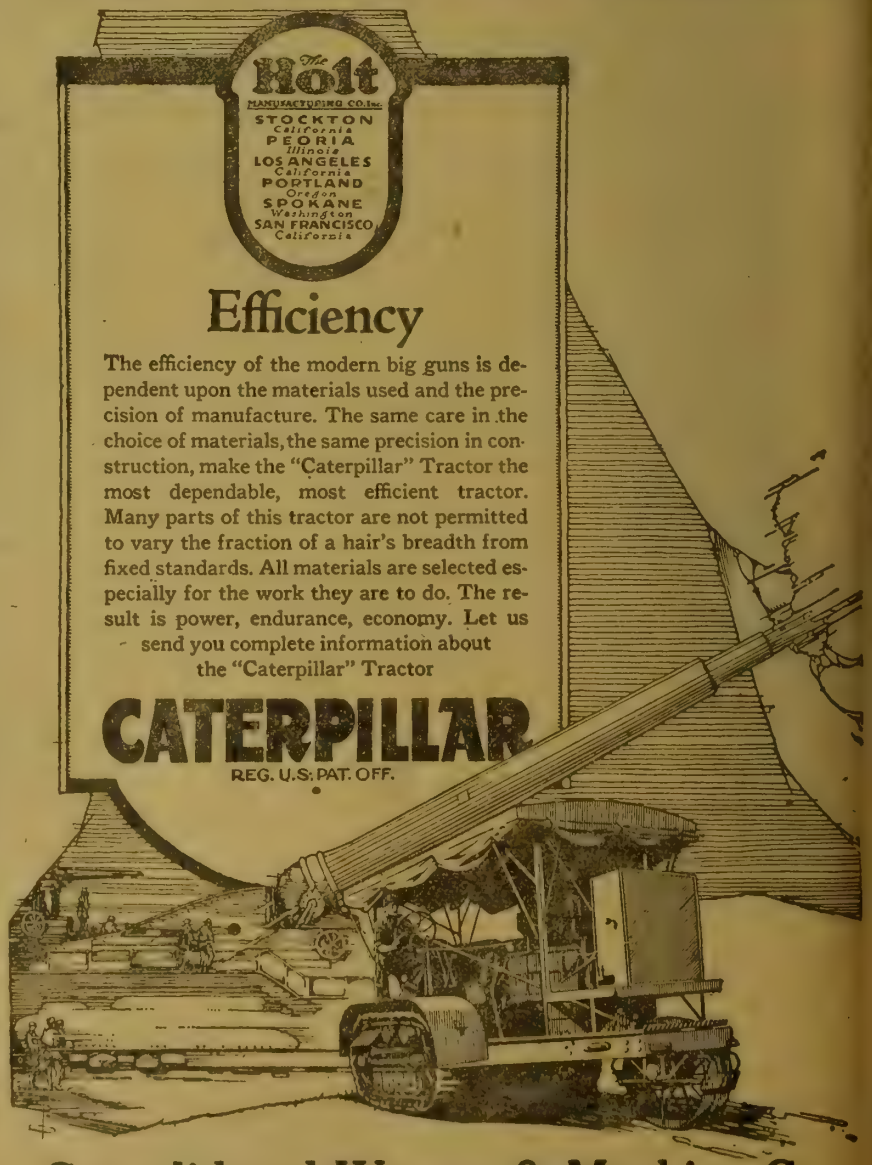

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VOLUME XIV. LEHI, UTAH, SATURDAY, MAY 11, 1918 No. 41

Profitable Egg Production

H. W. Sanborn, Extension Poultryman, U. S. Department of Agriculture and Extension Division U. A. C.

Our government is requesting all to raise and keep poultry this year, as a war necessity, to furnish animal foods.

In responding to our Government's appeal what is required of us to make our poultry profitable?

As a result of our appeal to the people, to raise more poultry this year, we have received numerous letters asking for information on keeping poultry, and many of them expressing their doubt as to their ability to do so profitably.

We wish to state that in every community you will find some one who is keeping poultry profitably and what one person does another can do. It is a question of information of what to do to obtain certain results and then doing them.

We want to say emphatically that profits in poultry keeping depend largely upon production.

It depends upon whether our hens, as a flock, average 50, 75, 100, 125, 150, 175 or even 200 eggs each per year as to our profits or losses. This being the case what is production dependent upon, or what is required of us, to obtain high egg production from our hens?

Production Is Based Upon The Following:

1. Selection of our Breeding Stock:

(a) For constitutional vigor.

It is absolutely necessary that in selecting our breeders that we do so with care, and not breed from the whole flock, good, bad, and indifferent, without any regard being given to whether they have stamina and are healthy, strong, and have never been sick or had any trouble that would lessen their vigor. Vigor is the basis of good poultry culture and without it we will not be able to hatch and raise good vigorous pullets capable of consuming, digesting and assimiliating large quantities of the rich feed required by them to manufacture large quantities of eggs.

(b) For High Production.

Food is our need and in our breeding we should select our breeders for production and make that our aim. Like begets like, and if we wish to raise pullets that are capable of producting high egg yield we should breed from stock that have been high producers.

2. Hatch Early to Produce Fall and Winter Layers.

Early hatched chicks grow faster, mature younger, and are most profitable. They are most profitable because they do mature earlier and lay the fall and winter eggs that bring the highest prices. Not only that but they will have a much larger egg yield for the year, as they will have a much longer laying period.

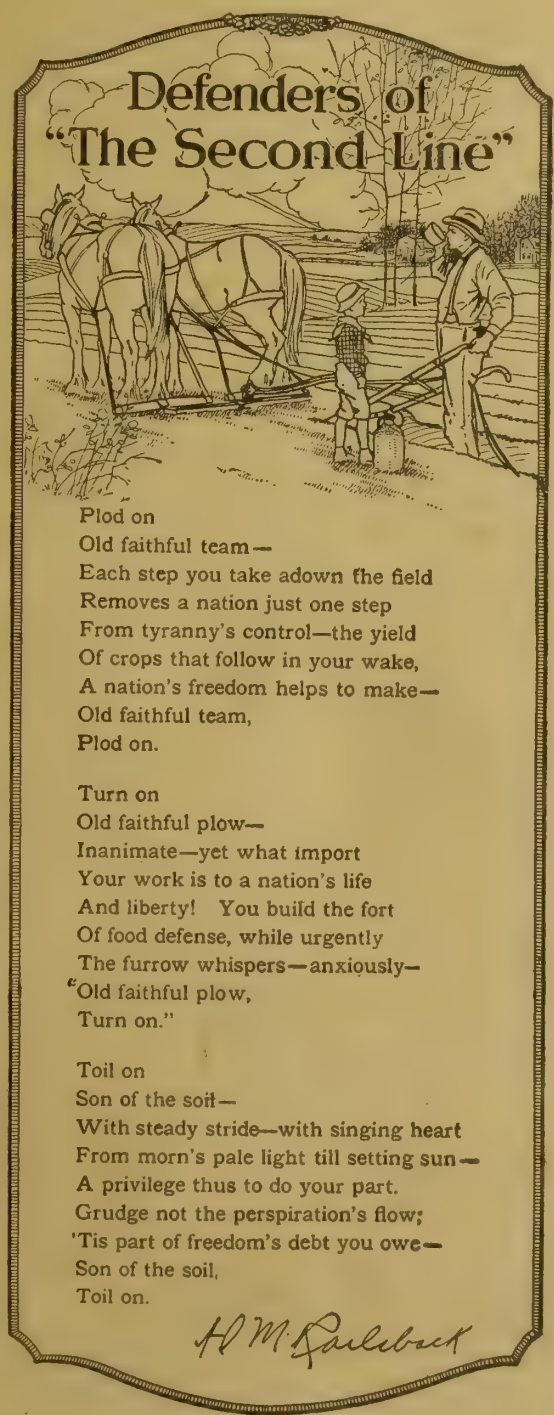
3. Proper Feeding of Chicks.

Chicks should not be fed until at least forty-eight hours old from the time they hatch. In hatching they take the yolk of the egg into their body and if fed too early this yolk is not absorbed by them, digestive troubles set in, and many chicks are lost by feeding too soon.

The best first feed is sour skim milk. They should also have grit, charcoal, and fine oyster shell.

Water should be given them the second day as well as the milk. The first solid feed may be either rolled oats or bran or a mixture of the two. In artificial raising of the chicks this should be fed on heavy paper or cardboard so that the little chicks will see it readily and get the feed we give them. This can be left before them for ten minutes and then removed. Little chicks should not be overfed before their digestive apparatus becomes strong. They should be fed often, about every two to two and one-half hours, five or six times daily. After three or four days the morning and evening feed may be scratched grain fed in the litter. This may be either commercial chick feed obtained from the grain stroes or fine cracked corn. Pin head oatmeal, millet seed, cracked rice, or cracked peas may be used. A mixture is better than one kind alone. After the chicks are twelve days to two weeks old, if they are active and growing properly, and haven't any digestive troubles at that time, we should keep a dry mash before them inlow down chick mash hopper, feeding the scratch grain in the litter liberally night and morning. Where skim milk can be had at a reasonable cost we should continue to furnish it to the chicks. If we do not have skim milk the dry mash should be fifteen to twenty per cent beef scrap. The growing chick's body requires more protein for rapid growth and proper de-

(Continued on page 11)



Irrigation of Small Grains

By L. M. Winsor.

Moisture is one of the main controlling factors in crop production. Too much as well as too little moisture spells partial or total failure. It is important, therefore, that care be exercised in supplying the right amount of moisture to the soil at the right time. And here let me suggest that the time of application is just as important as maintaining the proper quantity of moisture in the soil during the period of growth.

The farmer in the arid West has the advantage of the farmer in the humid East in the fact that he has controll of these important factors to a much greater extent. It is to his advantage, therefore, that he study his crop needs and be able thereby to apply his irrigation water at the right time and in the correct amount.

In the production of grain the preparation of the seed bed is a very important factor, and among other essentials this seed bed at planting time should contain an abundant supply of moisture. It often happens that spring plowing causes a partial or total loss of the moisture in the upper soil so that irrigation or a heavy rain is required before the grain will germinate. This fact has caused a great many of our farmers to irrigate after planting. It has been proved time and time again that this practice is inefficient and conductive to a poor stand and an excessive amount of irrigation due to the baking of the surface and the rapid loss of water from evaporation. Much better results may be obtained by irrigating the dry seed-bed before planting. In this operation a light harrowing should follow the irrigation making a mulch not more than 2 inches deep so that the seed may be placed beneath the mulch in a thoroughly moistened soil. A crop thus planted will develop and mature ahead of a crop planted two weeks earlier by the opposite method.

The mistake that is usually made by farmers who try for the first time, irrigation before planting, is that of stirring the surface too deep after irrigating, thus causing the seed bed to dry out below the depth where the seed is planted, and resulting in an uneven germination. Do not use the disk after irrigating the seed bed but rather use the spring tooth or the spike tooth harrow.

In irrigating the crop it has been a common custom to allow the young grain plants to show signs of burning before irrigating. This method was even advocated by experts on the subject. But it has been proved by careful research and close observation in the field that under ordinary conditions, on a soil which will dry out completely unless irrigated, the proper practice is to do the irrigating during the period of growth between the stooling and heading stages of development. A material decrease in yield will always follow a drying out or burning before the crop is in full head. There should be enough moisture in the soil at the booting stage and on up to the full heading stage to carry it on to maturity and insure complete filling. If the crop becomes dry while it is developing into full head and is, then irrigated, a second growth will invariably result and neither the first nor the second growth can be made to produce a normal yield. The second growth robs the first and the available plant food has been exausted before the second growth reaches maturity.

The fact that grain crops may receive their maximum of water during the early stages of growth is a fortunate condition for the intermountain farmers since the gravity streams from mountain sources are at their maximum during this period, and the streams may thus be released for use on root crops and alfalfa at the period when the streams are lowest and when the water is most needed by these crops.

Care should be exercised at all times to avoid over irrigation especially on soils which have a tendency to become water-logged. Lodging may be avoided by preventing an over development of straw which is due to excessive early irrigation on a soil that is very fertile. The only exception to this rule is where water is applied after the crop has headed out and the irrigation is followed by a heavy wind.

Under no condition should an excessive amount of water be used in a single irrigation. An average soil may be filled to capacity by a six acre inch application of water which is equivalent to a 3 second foot stream running for a period of two hours on one acre of land. Any more than this

(Continued on page 10)

DAIRYING

RAISING GOOD DAIRY CALVES

W. H. Underwood.

In the rearing of a calf for dairy purposes it is much better for the mother and calf that the two shall be separated very soon after the calf is born. The first milk (colostrum) of the mother is quite essential in the beginning of the life of the calf, consequently we leave it with its mother for about 24 hours. At the end of this period the youngster is removed to a clean, well lighted pen where it is out of sight and hearing of the mother. By this method the mother soon forgets the calf and the next problem that arises is its rearing by hand.

One of the difficulties encountered in raising the calf is in teaching it to drink from a pail. Apparently a young calf is born with an instinct to butt and we have all seen a feeder after a struggle with a calf come from the pen with the milk spilled and his person pretty well bespattered. In teaching the calf to drink we have found it a simple matter to back the youngster into a corner, then by placing the left hand over the bridge of the nose and forcing the fingers and thumb into the calf's mouth to force it open and by scooping up a little milk from the other free hand it can easily be poured into the youngster's mouth. It is only necessary to do this three or four times until the calf begins to swallow and drink very nicely.

Regularity in feeding the calf is a very important matter. There should be a definite time as nearly as possible for feeding. On most farms the usual practice is to feed the calf with weeks. This depends somewhat upon whole milk for from four to six the growth of the animal and also upon its general condition, but when the time comes to change to skimmilk it should not be done abruptly. Our plan is to take a week to change from whole to skimmilk. We begin by placing a very small quantity of skimmilk with the whole milk and gradually increase this amount of milk until the calf is receiving a whole feed of skimmilk.

The change from whole to skimmilk is a critical time with the calf and it is very frequently the time when disorders arise that cause serious trouble. If, however, the feeding is carried out carefully and if the skimmilk is at body heat when fed there need be no fear with regard to common troubles in the calf's system.

When it is about a month old the calf begins to eat grain and nibble at hay, and it is a good plan to make a mixture of equal parts by weight of wheat bran and whole oats and keep it in a box before the youngster. Also have a little rack of some clean, well cured alfalfa or clover hay, and it will begin to consume a considerable portion of roughage. When the calf is put entirely on skimmilk we add a little cornmeal to the above mixture of grain. We also add a little soluble blood flour to the skimmilk, about one tablespoonful in each feed. This soluble blood flour is not what is called blood meal.

We are careful not to overfeed the calf at any time and always see that the milk is fresh and at a temperature equal to that of the body. When the calf is seven or eight weeks old we do not allow it to have all the grain it will eat. We feel that it is much better to force it to consume a large amount of suitable roughage such as alfalfa and clover and give only enough grain to keep it in a good growing condition, not permitting it to become fat at any time. In developing a dairy cow it is not fat but flesh that is wanted. The good dairy cow don't become fat. Calves are like cows and some will require more or less feed than others, and we who are raising a calf for future use in the dairy must govern ourselves according to the thriftiness of the calf. During the season of green grass the calf should be allowed the run of good pasture and at all times be provided with pure water in plentiful supply.

It seems needless to say that cleanliness in all things and at all times is a feature of extreme importance in raising a good dairy calf. Many calves are thrown out of condition from no other cause than unclean feeding receptacles and pens. The feeding pails should be cleaned each time after use and it is easy to keep the pen in good condition. Any kind of sound straw makes fine bedding material, and when it becomes soiled it is easily removed and a fresh supply put in.

As previously stated a very critical time in the life of the calf is when it is being changed from whole to skimmilk. The dreaded scours frequently arise at this time. This is a very serious malady and great care should be taken to avoid it. As a corrective lime water placed in the skimmilk is very effective. If a small quantity of lime is slacked with water and allowed to stand until the clear water forms on top this clear water can be skimmed off and a teaspoonful of this placed in the skimmilk at each feed has a very desirable effect. There is another thing that needs to be watched carefully, particularly where a number of calves are kept together, and that is the appearance of lice. A simple and effective remedy is to dissolve a small bar of laundry soap in a pail of water and then, by placing in this about a pint of kerosene, an emulsion can be made that when rubbed well into the calf's hide will act very promptly in the destruction of lice.

It is a splendid idea in raising a calf to handle it frequently. It may seem to be of but little moment for one to spend the time in petting and handling a calf, but right here is where many make a mistake. They let the calf go until it is fully grown and then comes the very great difficulty of controlling the anim l sufficiently to get it into the barn or in "breaking it to milk" later on at the time of freshening. All dairy calves should be handled frequently, and while doing this the owner should realize thoroughly that the future cow is in the process of making and that her temperament later on will very materially depend upon the fondling and handling that the animal has received as a calf and yearling. Besides there is the intense satisfaction of having a very much quieter cow and an animal that will be very much gentler and easier to handle as a mother and milk producer.

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for preparing your seed bed, will increase your crops 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.

MADE IN 12 SIZES, FOR HORSES OR TRACTOR USE, IN 1 AND 3 SECTIONS

1918 crop will bring war prices; make it a record breaker in size by using the Western. Send for our free illustrated catalog, giving full description of the machine and its work, also dealer's name and much other valuable information.
Western Land Roller Co., Box 32 Hastings, Neb.

DISC
UNITED STATES
Self Starter
THE HANDLE'S OWN WEIGHT, as it comes gradually down to "A," puts the Bowl into rapid motion. It requires but slight ADDITIONAL POWER to bring bowl to full speed.

Easiest Running
Requires but 42 turns of crank per minute
Saves your strength to extent of from 600 to 1000 turns a day.
The only Separator that starts the easy way—by "pumping"—which means pressing downward on crank for a quarter turn, then bringing crank back to starting point, repeating several times, before making full turns. In getting up momentum DOWNWARD PRESSURE IS EASIER THAN UPWARD LIFT.

UNITED STATES LIGHTING PLANTS

"U. S. Light—Bright—White—Just Right!"

Daylight all time in home. Will wash, churn, fan, toast, supply electric flat iron, save hundreds of steps, provide water all over house. Operating cost low. A comfort and a joy.

Greatest thing out for the farm — Send for full particulars

VERMONT FARM MACHINE CO.
Factory at Bellows Falls, Vt.
Salt Lake City, Utah. Box 964.
Branch Offices—Portland, Oregon; Oakland, California; Chicago, Ill.

No Worry About Harvest

HAVE you noticed how discussion of the food supply situation seems to center around the number of acres it is possible to plant rather than around the harvesting of those planted acres?

It is an unconscious, but none the less wonderful, tribute to the genius of the inventors of the reaper and binder that the American public takes the harvesting of the greatest grain crop ever planted as a matter of course. The sole question now is, "How many acres can we plant?" The power and help required by the planting will be amply sufficient for the harvest where **Champion, Deering, McCormick, Milwaukee** or **Osborne** binders and binder twine are used.

And, where they are used, the harvest will be complete. No matter whether the grain be tall or short, heavy or light, standing or down, lodged and tangled, an International Harvester binder cuts and binds it all without waste.

It is an easy matter to be fully prepared for harvest. Buy the largest binder you can use. An 8-foot is better than a 7, and a 7 better than a 6 or 5 because the larger sizes conserve labor. Buy a new machine if there is any question about the efficiency of the old one. There is a limit, you know, to the dependability of repaired machines, while a new one is absolutely reliable.

Through our 90 branch houses and over 30,000 dealers, we furnish promptly either new machines or repairs for old ones. Do not hesitate to call on our organization for any help we can give in the harvesting of this year's grain crop—the most important crop ever raised. See the local dealer or write us direct.

International Harvester Company of America
(Incorporated)
Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

PASTURE FOR MILK COWS

Sweet Clover is Found to Have Many Advantages.

One acre kept one animal for five months in experiment conducted by dairy husbandry department. White variety is best.

Sweet clover makes an excellent pasture for milk cows. Tests carried on by the Kansas Agricultural Experiment station show the high feeding value of clover.

There are several varieties of sweet clover but the most profitable variety and the one used in this experiment is the white sweet clover, commonly grown. It is possible to obtain a continuous pasture with sweet clover by allowing it to seed itself each year or by seeding it each winter or spring.

Holstein Cows in Test.

The experiment station test started May 7. Six Holstein cows were turned on to a sweet clover pasture of 3.8 acres. The pasture used was the second year's growth, the field having been seeded the year previous with oats and the clover harvested for hay. The plants made an early start and had a good growth when the cattle were turned in.

The entire number were kept on this field continuously for 40 days, and because the dry season checked the growth of the clover three cows were removed at this time. As the pasture improved later, one cow was returned on August 5, and after that time four cows were pastured continuously until October 1. The cows were kept on the sweet clover pasture day and night. The only food received by the cows outside the pasture was a grain ration composed of corn chop, bran, and oil meal, fed in the proportion of one pound of grain to each four pounds of milk produced per day.

Milk Worth $88 To Acre.

During the period the cows were on the pasture, the total amount of milk produced was 19,393.5 pounds, containing 680.58 pounds of butter fat. The cows consumed 4,602.8 pounds of grain. Figuring the milk produced worth 20 cents a gallon and the grain fed $50 a ton, one acre of pasture produced $88.46 worth of milk. On the butter fat basis, with butter fat at 40 cents per pound, one acre produced $40.85 of fat exclusive of the skim milk.

The total number of days of pasture obtained by all cows in the lot amounted to 618 days, an average of 154.5 days for four cows. At this rate the pasture of 3.8 acres kept four cows for approximately five months, or in other words, one acre of sweet clover pasture kept one cow for five months.

No Trouble From Bloat.

During the time the cows were on the pasture, no trouble was experienced with bloat. Weather conditions were not always favorable. On 13 days during the experiment it rained either part of the day or the entire day.

The cows were weighed each 10 days in order to determine whether they held their weight during the pasture season. The weights of the three cows kept on the pasture for the entire period best serve for a comparison. The average weights of the three cows before turning on the pasture was 1,284 pounds. At the close of the experiment their average weight was 1,304 pounds.

GUARDING COWS AGAINST MISHAPS

E. L. Vincent.

A number of cows in our neighborhood have had trouble lately when bringing in their young. In all of these cases there was the loss of the calf and for some time after the mishap the use of the cow was greatly lessened, if not entirely lost. That, too, at a time when milk was very high in price and the money was needed by the farmer.

None of these accidents probably would have ever happened had it not been for some slip or unusual strain that came to the cows. In one case stepping a foot and a half up into the stable every time the cow passed through the doorway was rechoned to be the cause of the failure to bear the calf successfully. A little time and a load or two of gravel or earth would have saved all the trouble. In one or two other cases it was thought that a fall on slippery ground could be considered the secret of the trouble.

A nice heifer I know of got a shingle nail in her foot and went bad for a long time. Ten minutes picking up the old shingles that had been torn off the barn at shingling time, to fly down into the stockyard, would have saved a great deal of suffering on the part of the heifer and no little anxiety and work on that of the farmer.

We all have these mishaps and they are costly. But the best part of it is that they may almost all be avoided. Is it not a fact that we are not as careful as we might be about caring for our cows and other stock? We get busy about other things and we neglect the little details of the business. We may see them and recognize them as sources of possible danger, but we need to set ourselves about it at once and put them right. A good share of the success we have as farmers comes from our recognizing the value of small things and doing them when they ought to be done. Neglect nothing for the safety of the cows.

FRENCH FEEDSTUFF PRICES

Prices of feedstuffs quoted in the Paris markets late in January of this year follow:

Product	Price per ton
Wheat straw	$53.00 to 56.40
Rye straw	$40.80 to 44.20
Oats straw	47.20 to 50.40
Hay	$68.40 to 73.20
Lucerne (alfalfa)	$69.80 to 74.80

A Gas Engine That Goes

The Nichols-Shepard Oil-Gas Tractor

does not "lay down" on the job. A heavy engine for heavy duty. Successful because simple and built with nothing but work in view.

The Nichols-Shepard Oil-Gas Engine has never been a compromise. It is designed for work—any kind of work that a traction engine should do—and it does it.

It will plow, haul, thresh, or work with the belt with the ease and certainty of steam. It is ready for another job and not the repair shop when it gets through.

Two sizes—25-50 h. p., 35-70 h. p.

One kind—*a Worker.*

Uses gasoline, kerosene, naptha or distillate at all loads.

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines
Battle Creek Michigan

CANNING OUTFITS PAY FOR THEMSELVES
Be Independent! Be Patriotic! Let your garden pay for most of your next year's living.
BUTLER CANNING OUTFITS
Are simple, economical, practical. Operate easier and quicker than old-fashioned methods. Made for home, club or commercial use. Many were disappointed in not getting an outfit last year. Expect larger demand this season. Be safe, investigate now. Write nearest factory for free catalog and prices. Good Deal for Live Agents in Open Territory.
Butler Manufacturing Co.
689 Butler Bldg. 696 5 Ave., S. E.
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72 page catalog mailed upon request

Eight Good Reasons Why You Should Buy a

DE LAVAL CREAM SEPARATOR

GREATER CAPACITY: New capacities have been increased 10%, without increase of speed or effort required in operation.

SKIMS CLOSER: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simpler bowl construction and discs caulked only on the upper side make the bowl easier to wash.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest to turn and least tiring to the operator.

THE MAJORITY CHOICE: More De Lavals are sold every year than all other makes of separators combined. More than 2,325,000 are in daily use—thousands of them for 15 or 20 years.

TIME TESTED: The De Laval was the first cream separator. It has stood the test of time and maintained its original success and leadership for 40 years the world over.

EQUIPPED WITH SPEED INDICATOR: Every New De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures proper speed, full capacity, thorough separation and uniform cream at all times.

SERVICE WHEN YOU NEED IT: The world-wide De Laval organization, with agents and representatives ready to serve users in almost every locality where cows are milked, insures the buyer of a De Laval quick and efficient service whenever he needs it.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR COMPANY
165 Broadway, New York 29 E. Madison Street, Chicago

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

Entered as second class matter in the postoffice at Lehi, Utah.
Published every Saturday by the
DESERET FARMER PUBLISHING CO.
Lehi, Utah.
Subscritpion price, one year.....$1.00
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Change in Address. When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

If you have a good heifer cow, keep her and you will find it profitable for the future market on dairy cows looks good.

The farm horse, after being comparatively idle during the winter, should be brought into active service gradually. Do not spoil a good horse, especially the young ones, by over work after a long rest.

Take a few hours of time and fix up your fences. It may save you time and money to do it. Poor fences allow cattle to destroy your crops. How about your gates, do they sag? A little time repairing them will save time and bother of using a poor gate.

Let the boy or girl raise a pig. If you did not have any young ones to give them buy one and give them the responsibility of caring for it. Can you think of any thing better to develop the young boys and girls on the farm than the care of livestock. It will pay from any point of view to give them some responsibility.

The government has purchased twenty five per cent of the peas, tomatoes and corn canned in the United States. The great amount of food necessary to be shipped abroad for our own men and to help our allies can be realized when such purchases as these are made. The present outlook is that Utah will have one of the largest crops of peas and tomatoes ever produced.

Put your winter clothes and furs away. Thoroughly beat and brush all clothing before putting it away. To keep the moths out use camphor, napthaline balls or some good repellent. If possible line the box or truck with tar paper. All clothing will be higher in price and it will pay to conserve all you have that can be used again.

Right now is the time to start a campaign to kill the fly before he is born. Clean up around the place, do away with the breeding place. Make it a community affair and see that the fly has no chance to live. When we realize the danger of the house fly we will make an effort to not only "swat the fly" but pervent his birth by doing away with the breeding places.

MANURE VALUABLE

Considering the high price of all farm products, manure is becoming more valuable all the time. In the dairy business the cream check, in the feeding of livestock, steers, horses or hogs the sale of the animals are not the only returns. Manure when properly applied to the land will bring increased production, will bring fertility to the farm. Too often we do not value the manure enough to take care of it. It is wasted and our land is starving for it. When we learn the value of manure we will take better care of it.

KEEP A RECORD THIS YEAR

Last fall and winter there was much discussion about the cost of producing certain crops, especially sugar beets. Why not keep a record this year of just what it does cost you to produce your crops. Be fair to yourself and keep the record correct. To over charge or under charge would be unfair. Correct records is what you should have.

When a fair comparison of this or that crop is made it may surprise you which one is the more profitable on your farm.

PUT EVERY ACRE TO WORK

The planting season is on, in some sections it is over. Are there any slacker acres?

How sad we would feel if we knew that a soldier or a child in far-off Belgium, suffered or died for food when we allowed any land to go unplanted. The situation is serious, more so than many of us will admit. Every piece of land should be planted, made productive. There are so many things that can be used for food that all kind and all sizes of land should be planted Some gardners and farmers are planning to produce two crops on the same piece of land, this is much better than to allow any piece of land to go without being planted.

A good scales is an important part of the farm equipment. Every farmer buys and sells and he should have some way of knowing the weights of his products. Guessing stuff off is an unbusiness-like method. Experiments show just how much feed is needed by an animal of a certain weight. If the hay and grain produced on the farm are weighed the farmer will know just about how much live stock he can winter or fatten. It is only by occasional weighing that he can know definitely how much his stock is gaining and whether or not it is being kept at a profit or a loss. There are so many advantages to the owning of a scales that no farmer should be without one.

GOOD PASTURE FOR HOGS

Utah this year is raising a great many more hogs than ever before. To make it profitable one must produce at the least cost. Where a grower has a small piece of alfalfa that can be used as pasture, he has one of the cheapest sources of food for hogs. Brood sows and their litters should have green feed of some kind. Do not make the mistake and think that pork can be produced on pasture alone. It is the combination of good pasture with other feeds that will produce good pork. Good pastures will reduce the grain feed which is so high at the present time.

PROFITABLE IMPROVEMENTS

There is a tendency among many people, under war conditions, to economize, this is alright if it is not carried to extreme. Farmers are giving to Red Cross and other war needs. They are buying Liberty Bonds and Thrift Stamps and backing up the government.

There are improvements on the farm that should be taken care of. If by building a barn he can take better care of his livestock and increase production, why not build a barn. If the cost of feed can be reduced and production increased by building a silo, why not build a silo.

Thousands of acres of land should be drained and made productive. The home should have many modern conveniences to help the women folks in their increased duties.

We believe such improvements are needed and should be made. Do not go to extremes but use good business judgment under war conditions and make the improvements needed.

FARMERS BUY BONDS

The farmers and those living in the rural communities are to be congratulated on the showing they made in the purchasing of bonds of the third Liberty Loan issue. This great showing was made at a time when farmers are spending money for seeding and planting and must wait until harvest for returns. The farmers of Utah are certainly trying to do their part to help win the war.

We believe that victory for democracy and freedom is sure to come but the sooner we awake to the task before us the quicker the job will be over. Too many people are over confident. Every man woman and child has a task to perform, a duty to do. The situation is serious, when people in nearly every community treat the proposition lightly. Our liberty and happiness depends upon the strength of the allied line. The need to do things is imperative. Do not let over confidence or lack of help on your part be the cause of any delay.

RAISE MORE BEEF CATTLE

There is a renewed interest being taken in beef cattle. Our largest crop in this state is hay. What do we do with all of it? Is it feed to live stock on the farm where it is produced—in many places it is not. One small town in Utah last year shipped 300 cars of alfalfa hay, every pound of it should have been fed on the farm or near there so that the manure could have been returned to the land.

Why not feed more beef cattle when the feed is produced here?

It is a poor policy to ship our hay and other feeds away and also our cattle to be fed and marketed by some eastern farmer or feeder. There is money in feeding cattle. Ask those men who are feeding them, nearly every time you will find them enlarging their efforts and increasing the number each year. If more feeding was done at home, there would be more beef cattle raised. Many feeders will mean a better market. A better market will encourage the raising of more beef cattle.

SMILES WITH THRIFT

In every smile there is a good stiff punch. There is nothing in a grouch but waste. Waste breaks down instead of building up the country, and nothing should be encouraged except that which builds.

In all walks of life there should be practised an economy which conserves yet does not weaken. In the administration of the public affairs of our state every dollar necessary to public service, intelligently and economically administered, should be provided, but not one penny for purposes unnecessary.

Needless expenditures drain the people's substance. In this hour of our country's need our public officials should take prompt action looking to the elimination of every condition or influence operating against highest efficiency, whether it be of man-power, food-power or other of the state's resources.

We who remain at home have a task to do, much less exacting than have the boys in the trenches, it is true, but no less important nor imperative. If we are sincere we will chance nothing upon waste, an insidious enemy at home, while our country needs our full strength abroad. And the more cheerfully we go about our task the lighter it will be and the more we will be able to do. Then, too, it will be more agreeable to our own consciences.

Let us 'cut out" waste and "cut in" more thrift and smiles. In each of these later there are good stiff punches and our country needs punches ringing good and true.

Farm Engine Economy

The reason there is not an engine n every farm is not because the far-ner does not realize the tremendous aving of labor effected by the use of gasoline or kero-oil engine. He ould like to have a good one, and very one of his self appointed ad-isers tells him that he cannot afford be without an adequate engine on is farm this season.

The question in the farmer's mind not so much whether he can afford do without it, as whether he can ford to have it. When it comes right own to facts he knows that the initial vestment of the cost price is not all ere is to this engine game. What bout the cost of operation?

If he has read up on the subject he nows, that, in spite of the price of ngine fuel, there is no danger of the pply of such fuel becoming exhaus-d, or even diminished, for untold cen-uries, but "How much is it going to st to run that engine?" We are ad to show to this honestly inquiring an some costs of operation as resented below. The farm engine is rtainly a great boy when he gets work, and he seems to be content do it for very low board wages.

Cost of Operating.

From reports sent in by engine ers, to a large engine manufacturer, is estimated that 25 cents' worth of el will do the following kinds of ork:

Will cut 12 tons of silage, elevating 30 feet.

Will cut 200 to 250 feet poplar lum-er.

Will cut 150 to 200 feet of oak mber.

Will cut 10 to 12 cords of wood.

Will run draw saw, cutting 6 to 8 ords wood.

Will grind 40 to 50 bushels shelled orn.

Will grind 20 to 25 bushels ear corn.

Will grind 20 to 30 bushels wheat.

Will make 2,000 to 3,000 pounds ilk into cheese.

Will pump 1,200 to 1,600 gallons ater.

Will pump water for 80 to 100 head orses.

Will pump water for 400 to 500 ogs.

Will pump water for 500 to 700 heep.

Will shell 300 to 350 bushels corn.

Will cut 25 to 30 tons silage.

Will cut 20 to 25 tons hay fodder.

Will furnish 80 hours of electric ght.

Will run 60 saw gin stand one hour.

Will make 4 to 6 barrels flour.

Will do 5 weeks' washing at 2 hours week.

Will furnish lights for 8 rooms for evenings.

Will grind from 125 to 180 pounds reen bone.

Will run rip saw, band saw and iner all 8 to 10 hours.

Will turn the grindstone, run the mery wheel, forge, lathe and drill r 24 hours.

Will run emery wheel, drilling ma-hine and forge for 8 to 10 hours.

Will pump 30,000 gallons water with entrifugal pump.

Will pick 20 to 30 bags of peas.

Will pump water from 150-foot well ll day.

Will run a medium cutter half a ay.

Will run a medium size saw 9 hours.

Will haddle a 500-foot well machine to 5 hours.

Will pull average broom corn resher half a day.

Will bale 5 tons of straw.

Will run a 750-lb. drill half a day t 250 to 300 feet.

Will run a home water system, fur-ishing water for an 8-room house 10 ays.

Will save your horses two-thirds of he work on a binder for a day.

Will grind 1,000 to 1,200 pounds lfalfa meal.

Will grind 1,200 to 2,000 pounds affir corn in head per day.

Will mix 20 to 30 yards of concrete.

Will elevate 2,000 to 3,000 bushels of corn.

Will run auto-mower 18 hours.

Will run sprayer and handle 2 or 3 leads of hose an day.

Will handle a 600-pound gross weight hoist a day of 10 hours.

Will run a diaphragm pump, handling 2,500 to 3,000 gallons per hour for a day.

Will cut 1,000 to 2,000 shingles.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending May 7th.—Cattle—Receipts, 982; market, steady; choice steers, $13.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $9.00@10.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $8.00@9.00.

Hogs—Receipts, 1,151; market, steady; tops, $17.10; bulk of sales, $17.00.

Sheep—Receipts, 1,255; market, steady; lambs, $17.00; ewes, $9.00@10.50.

Omaha, May 7.—Hogs Receipts, 16,700; steady. Heavy, $16.75@16.85; mixed, $16.80@17.00; light, $17.00@17.20; pigs, $12.00@15.00; bulk of sales, $16.90@17.10.

Cattle—Receipts, 10,500; market, steady. 10c to 15c lower. Native steers, $10.50@17.50; cows and heifers, $9.50@13.50; western steers, $10.00@14.50; Texas steers, $9.90@11.50; range cows and heifers, $8.75@10.75; canners, $7.55@8.75; stockers and feeders, $8.50@13.25; calves, $10.00@12.50; bulls, stags, $9.00@13.00.

Sheep—Receipts, 500; market, steady. Yearlings, $17.50@18.65; wethers, $15.00@17.00; ewes, $14.00@16.50; lambs, $14.50@20.50.

North Salt Lake—Cattle—Receipts, 50; market steady. Choice steers, $12.50@13.00; good steers, $10.00@12.00; fair steers, $7.75@9.50; choice cows and heavy heifers, $8.75@10.00; fair to good cows and heifers, $7.50@8.75; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $7.50@8.25; bologna bulls, $6.50@7.00; veal calves, $8.00@10.00.

Sheep—Receipts, 244; market steady. Good choice grain fed lambs, $16.00@17.50; choice yearling wethers, $13.00@15.00; fat wethers, $12.50@14.00; fat ewes, $10.00@12.00.

Hogs—Receipts, 78; market steady to stronger. Choice smooth fat hogs, 175 and 250 pounds, $17.10.

Remember the Utah Farmer protects you when you mention the Utah Farmer in answering the advertisements.

The Tractor for all the World

ALL year 'round utility characterizes the Cleveland Tractor. It performs its varied duties regularly, season by season. It is a "man-of-all-work."

It plows. It harrows. It plants. It reaps.

And it does all of these things *faster* and *better* than was possible before.

But that isn't all. It does the thousand and one other things that require mechanical power. It pulls your manure spreader. It runs your saw. It operates your pump. It cuts your ensilage. It drags logs and lumber. It pulls road machinery. It does practically everything that horsepower and stationary engines can do. It develops 12 horsepower at the drawbar for hauling and gives 20 horsepower at the pulley for stationary work.

Cleveland Tractor

The Cleveland Tractor plows 3½ miles an hour—eight to ten acres a day—which is equal to the work of *three* good men with *three* 3-horse teams.

It travels on its own endless tracks which it lays down and picks up as it goes along.

It operates easily over gullies, ruts, and uneven ground of all kinds. Because of its 600 square inches of traction surface it goes over sand, gumbo, mud and slippery clay without packing the soil, without sinking, miring or floundering.

The Cleveland weighs less than 3200 pounds and is so small that it can be readily driven under and among small fruit trees.

It steers by the power of its own engine and will turn in a twelve foot circle.

It requires less space to house than a single horse.

The Cleveland Tractor was designed by Rollin H. White, the well known motor truck engineer—and is manufactured under his supervision.

He has designed the track for long service. The sections are constructed to prevent filling or packing with mud and protection is provided to prevent dirt and mud from falling into the track. The sections are joined with hardened steel pins which have their bearings in hardened steel bushings.

Gears are protected by dust-proof, dirt-proof cases and are of the same high quality as those used in the finest trucks. Materials used throughout are of the best.

Every step must be taken this year that will speed up farm work—that will enable machinery to replace muscle—that will help produce—and increase harvests.

The Cleveland Tractor is already bearing a big share of the war burden. Farmers are producing larger crops because of the Cleveland—*and are making greater profits.*

You too can help the nation meet the food emergency—and incidentally make more money for yourself. Write to us *now* for complete information and the name of the nearest Cleveland dealer.

THE CLEVELAND TRACTOR CO., Dept. AO, Cleveland, Ohio, U. S. A.

HOME

MILK

The Best Food We Have.

Give Your Children Milk.

A quart a day for every child, if possible, a pint without fail. Plenty of milk will help give all your children, big and little, the chance for health they ought to have. Buy more milk and less meat and your family will be better fed.

Milk helps your children to grow. Besides well-known food substances it has something special which they must have to grow. Your children can get a little of this from other foods, but not enough. Give your boys and girls milk for their chance to grow.

Milk helps your children to keep well. Look at children who do not get milk, but get tea and coffee instead. Aren't most of them pale and sickly? There are always very many sick children in cities and in countries where milk is scarce. When milk prices go up and mothers begin to economize on milk more children become sick. Do not let your children run this risk. Give them fresh, clean milk and help them to grow up strong and well and win in their fight against disease. Save on other things if you must, but not on milk, your child's best food.

Milk gives your children lime and other salts which they need. There must be plenty of lime in their food, for a great deal of it is needed for their bones and teeth and a little for their blood and all other parts of their bodies. Right food, not drugs, is what children need. Big boys and girls and grown people, as well as children, need lime, because the bones are constantly wearing away little by little and must be replaced.

Milk is the cheapest food for lime. You and your children need its lime.

Milk gives your children the body-building protein ,one of the materials from which their bodies are made. Milk is like eggs and meat in this. This body-building substance, the protein, of milk is not new to you, for curd is milk protein. Cottage cheee is curd separated out from milk. When we drink milk or eat cheese we give our bodies proteins which are changed and become part of our muscles, blood, and other parts of the body. The milk protein is good for everybody and especially good for children. They need a great deal of it because their bodies grow so fast.

Milk gives your children fuel to burn in their bodies. They need the fuel to keep them warm and to help them run and play and work, much as an automobile needs gasoline or a steam engine needs coal. They are so active that they need more fuel for their size than grown people do. The fat and the milk sugar and the protein in the milk all burn up as fuel.

Milk is much cheaper fuel than meat. A quart gives the same amount of fuel as a whole pound of lean meat or as eight eggs. Think of the cost! Isn't the milk far the cheapest? Still less expensive fuel is a bowl of bread and milk or corn meal mush and milk.

Skim milk is good food. It has the lime and protein and sugar of the whole milk. Use it, but use whole milk, too. Skim milk lacks fat and has not so much of the growth substances as has whole milk.

Milk should not be the only food for children of course. They need vegetables, fruits, and cereals. But even the bigger boys and girls should have milk. Milk is good for grown people, too. They need the lime and protein and its other substances. Don't think of it only as a refreshing drink, but as a good nourishing food.

Be sure your milk is clean and fresh. If you live in the city, buy it pasteurized from a clean dairy. In the country see that your cows and milkers are clean and healthy. Keep your milk clean, cold, and covered.

Ways of Using More Milk.

Cereals cooked in milk. Corn meal, oatmeal, and rice are delicious cooked in skimmilk. Use the same amount of milk as you would water for oatmeal and corn meal. For rice, you can well use a good deal more milk—four or even more cups of milk to one of rice. Cook for an hour in a double boiler. This makes a delicious creamy cereal. For milk cereal puddings add sugar or sirup and raisins.

Cornstarch Pudding.

2 cups milk, ¼ cup sugar or ½ cup corn sirup, 4 tablespoons cornstarch (level), pinch of salt, vanilla.

Mix the cornstarch with cold milk, scald the remaining milk, and add the sugar or sirup, salt, and cornstarch. Stir until thick. Cover and cook for 20 minutes. Add vanilla. Serve cold, plain or with fruit. Add a square of chocolate to the milk for chocolate cornstarch.

Creamed Dishes.

Milk toast, cream soups, creamed vegetables, creamed fish, and scalloped dishes are all good ways of putting more milk into the daily food of the family. The milk for all of these is thickened into a sauce, thick or thin.

To make the sauces, melt the fat, stir in the flour, add the milk gradually and cook until thickened, stirring constantly unless you use a double boiler. All measurements are level in these and all other recipes.

Thin White Sauce.

1 cup milk, 1 tablespoon flour, 1 tablespoon fat, ½ teaspoon salt, ⅛ teaspoon pepper.

Medium White Sauce.

1 cup milk, 2 tablespoons flour, 2 tablespoons fat, ½ teaspoon salt, ⅛ teaspoon pepper.

Thick White Sauce.

1 cup milk, 3 tablespoons flour, 3 tablespoons fat, ½ teaspoon salt, ⅛ teaspoon pepper.

For milk toast and with vegetables use the thin sauce. For scalloped or creamed dishes, use the medium sauce. The chief use for the thick sauce is as a binding material in croquettes and loaves.

PLAIN PANCAKE

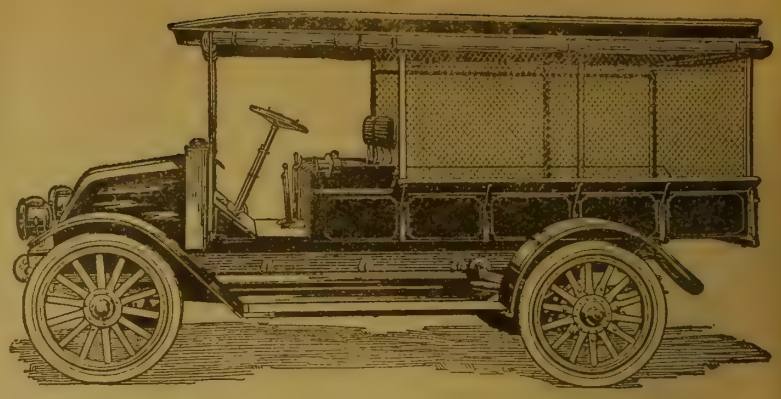
The more eggs and thinner the pancake batter, if this batter is allowed to stand until the bubbles or air we have beaten into it have disappeared, the thinner cake we can make. But if we did this work and added eggs to make it light, why should we let this labor go to thought? Mostly egg, and with but little flour and no milk, for the thinnest of cakes, is a German model, and the French have one equally thin but more fancy.

A plain wheat cake which we may vary in no end of ways is: One egg, one cup of milk, one cup of flour, a pinch of salt, and one teaspoon of baking powder if sweet milk is used, or one teaspoon of soda if sour milk is used. Since sour milk both holds air and generates air with its acid, it makes the lighter pancake. The best thing in making a pancake is skill in quick, light and perfect heating and careful and right temperature in baking, no matter what the mixture is. Sour milk needs to be broken up fine and other work to be done to give the beautiful effects the amateur does not get because the amateur does not put in the work.

A conservation pancake should not only be popular for conservation reasons but because it really is the most wholesome of mixtures. I refer to a bread pancake. Rightly baked this is almost a souffle. It is the simplest of things to make. A stale raised loaf or rolls, or even day or more old baking powder biscuits are good for this pancake, as well as a number of other baked things. Twice cooked or baked, we know these have an advantage dietetically, even though the second baking is not of the type most commended by dietitians. But it is not necessary to use baking powder if we use an egg.

Bread Pancakes.

Crumb up bread and to a pressed down cup full of crumbs allow one cup of milk, more or less, according to the dryness of the bread. By the way, rolls of the French type soon



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Dry Farm Seed Corn

Mr. Strong of Box Elder County, Utah, experimented for 15 years with dryland flint corn, not only did Mr. Strong increase the yield over 100 per cent but he produced a cob only one-half as large as the old type White Flint. Mr. Strong developed a dryland corn of wonderful merit, a heavy yielder and remarkably early for DRY LAND cultivation, you will not be disappointed if you plant a good acreage of Strong's Dryland White Flint.

Order early as our Supply is limited.

Vogeler Seed Co.

SALT LAKE

lose enough of their moisture so that they will keep quite indefinitely for pancakes, and they are ideal for grating. Prepare the bread and milk over night. In the morning beat up an egg —it is best to beat white and yolk separately—and add to the mixture, which should have been so well beaten that every bit of the bread is as fine as meal. It is not necessary to add baking powder, but some people sift a little with some flour, which they imagine to be necessary to thicken the batter. If the bread has no shortening it is best to add a tablespoon of fat of some sort.

We know today that fat on a pan which gets hot enough to smoke is not only a disagreeable thing in the house but it is an irritating thing in the stomach. Things that irritate the stomach sometimes break its lining and when the skins of our bodies are broken anywhere there is danger that our invisible enemies, in the shape of bacteria, will take advantage of the occasion.

THINGS TO REMEMBER IN COOKING POTATOES

Supply is Plentiful, Price is Low, and They Should be Freely Used to Save Wheat.

Potatoes are plentiful and cheap and should be used often, but in variety, to substitute for the wheat.

A few "Don'ts" in Potato Cookery

In boiling potatoes:—

Don't peel the potato unless necessary. Serve them in their "uniforms" and save mineral ash.

Don't fail to pour off the water as soon as the potatoes are done.

Don't cover the potatoes, when done, with a tight lid, but place a clean cloth over them and allow steam to pass off.

Don't fail to try the steaming method with new potatoes.

Don't fail to soak old, wilted potatoes in cold water before cooking.

In baking potatoes:—

Don't have different sized potatoes. Select medium ones.

Don't forget to scrub them with a vegetable brush, if possible.

Don't put them in the oven dripping with cold water. Average conditions allow 45 minutes to an hour for a six ounce potato.

Don't have the oven too hot or the potatoes will crust over and the steam can not be formed, and allowed to escape, and a soggy potato is the result.

Don't fail to serve potatoes as soon as possible after they are done.

Potatoes for baking may be pricked with a fork, the ends cut slightly, or the potatoes greased to make them soft.

To conserve fuel, it might be well to boil potatoes 20 minutes in "jackets" and then bake.—Miriam M. Haynes, Colorado A. C.

REMOVAL OF STAINS

Gertrude McCheyne and Hortense White, U. A. C.

Remove stains while fresh; they are more difficult to remove when old, and often impossible to remove after washing. Know the nature of the stain before treating it, when possible. What removes one stain is apt to set another.

Grease Spots From Woolen Goods—Sponge with warm water and naptha soap. Rinse spot carefully and press, or sponge with gasoline, benzine or chloroform (latter best for tarry substances and is not so inflammable.) Spread the stain right side down(so the foreign substance will not have to soak through the goods) on several thicknesses of soft cloth or on white blotting paper. Change pad as it becomes soiled. Sponge with lintless cloth, from the outside of the spot towards the center; this will help avoid a circle being formed, or wash in warm water with soap solution. (1 c. neutral soap to 2 c. water) or about 5c soap bark, soaked and strained.

Grease Spots on Silk—Make paste of benzine and carbonate of magnesia. Leave until dry. Shake off. Place clean blotter on each side of stain, then apply a warm iron.

Ink Spots—Soak in sour milk or lemon and salt or rub cream of tartar on the dampened spot. The first two will remove stain only from goods which are washed and boiled afterwards.

Delicate Texture Soiled With Oil From Skin—Shake Fuller's Earth, powdered French chalk, or talcum powder over the article and leave for 24 hours. Remove by shaking and careful rubbing.

....Coarse materials such as carpets, rugs, etc., use salt or cornmeal. These substances are also good for cleaning light shawls by rubbing them then shaking them out.

Grass Stains—Use alcohol for articles which will not stand washing. Use ammonia on washable goods.

Fruit Stains—Pour clean boiling water through cotton or linen; warm soap solution with white wool or silk.

Paint Stains—Use turpentine or ether or equal parts of benzol and wood alcohol. There is nothing which will remove old dried stains.

Resinous Substances—Use turpentine, ether, kerosene, chloroform, or alcohol.

Tar—Rub lard, turpentine or chloroform into the stain, then wash in hot water and soap. Repeat if necessary.

Iron Rust—Boil the stained place in solution of 1 t. of agent to 1 pt. water, until the stain disappears, then rinse thoroughly. Or use lemon juice by spreading the stained place over a vessel of actively boiling water and squeeze lemon juice on stain. This does not destroy delicate fabrics. Or use lemon juice and salt or some fruit, as grapefruit,rhubarb juice, etc.

Points To Consider in Remodeling Clothes.

If you do not need to make over clothes for your own family, make them for someone in need or give them to someone who will use them. Our nation cannot afford to have a single article hoarded that could be worn by someone.

1. Is the article worth making over? If remodeling is to be worth while, the finished garment must
   (a) Be attractive
   (b) Have wearing qualities.

Consider these points before beginning.

2. Have pieces clean and well pressed before beginning to cut. Cut garment apart previous to sponging, washing, removing spots, pressing, etc. It is much easier to do any of these things with smaller flat pieces.

3. Do not put unnnecessary labor on remaking, e. g. if pieces of old garments are large enough for recutting, do not take time to rip seams; cut them off.

4. Choose patterns very carefully. Note the size and shape of pieces with which you have to work and choose a pattern and design which gives pieces which will cut from material, e. g. if pieces are not long enough, choose skirt with yoke, tunic skirt or two tier skirt.

5. In making, piecing may often be hidden under decoration if carefully planned. Plan to piece under tucks, pleats, folds, where braid is put on, insertion set in, etc.

6. Place whole pattern on and know just how you are going to get whole garment from pieces before cutting any one piece.

7. In combining materials, consider carefully color and texture of materials for attractive and harmonious results.

Generosity does not consist in giving money or money's worth.... We owe to man man.—Emerson.

Wipe out the past, trust the future, and live a glorious now!—Elizabeth Towne.

"Refreshments will be served"

IT makes little difference whether it's a dance, a school or church social, a Red Cross Chapter meeting, a "get-together" meeting of the Farm Bureau or a big rally—

Chances are Ghirardelli's will be "among those present." And—for very good reason:

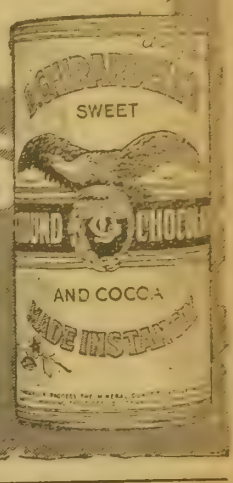
It promotes sociability. It provides added cheer and comfort. It is a delicious, refreshing food-beverage that is always in order at *any* social function.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

D. GHIRARDELLI CO.

Since 1852 San Francisco

Ghirardelli's Ground Chocolate



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One Man One Team

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circulars showing different styles

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Open a Saving or Checing Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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Your Duty

Is to produce every pound of food your soil is capable of yielding.

Plow deep and work your soil to the limit this year of the world's need.

The Yuba 12-20 Ball Tread Tractor costs $2750 cash f.o.b. Benicia. It's a one-man outfit—a producer—a money-maker. Ready for delivery. Shall we ship one to you?

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All standard makes handled. Write us your wants.

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Scissors sharpner fits any sewing machine free upon request.

159 So. State St. Salt Lake City, Utah

The Weed Problem

No Single Feature of Farming Requires Such Universal and Unceasing Attention.

Weeds injure crops both in quantity and quality. They greatly increase the labor involved in farming. Other conditions being equal, the yield of most crops is inversely proportional to the growth of weeds. If farmers in general knew the extent of the loss which they cause—a loss that grows greater each year—they would practice control measures more diligently than most of them do. "The Weed Problem in American Agriculture" is discussed in a separate of the Yearbook of the Department of Agriculture. It discusses weeds, their cost, their habits, their benefits, and their control.

Considering the principal crops in the United States, the publication says, it is estimated that weeds reduce the yield of corn by 10 per cent; tame hay, 3 to 16 per cent potatoes, 6 to 10 per cent; spring grain, 12 to 15 per cent; winter grain, 5 to 9 per cent; tobacco, fruit, and truck crops, 0 to 5 per cent; and pasture, 5 to 50 per cent.

How Weeds Cause Losses.

The extra labor required to keep weeds under control is probably the greatest economic loss which they cause. This labor cost falls most heavily on the intertilled crops. Records collected by the department show that on the average diversified farm the cost of tillage operations, about half of which is necessary for the control of weeds, comprises from 30 to 40 per cent of the total cost of farm operations.

Some weeds, such as wild onions, bitter-weeds, and ragweeds, cause great annoyance to dairymen and milk dealers, for the cows eating this class of weeds give milk of a disagreeable odor and flavor. The loss of cattle and sheep due to poisonous weeds is very great. On the United States national forest ranges alone the loss in 1916 amounted to 6,648 cattle and 16,273 sheep, besides a number of horses, goats, and other animals.

In some sections weeds lower the price of land very materially, and cases have been cited where farms badly infested with such weeds as nut-grass, quack grass, and Canada thistle have been abandoned. Weeds not only result in big financial loss, but also in great personal discomfort, such disease as hay fever being caused by ragweed and other species. Other classes of weeds are responsible for the spread of plant disease and insect pests. The recent rapid spread of white-pine blister rust, which is threatening several hundred million dollars' worth of the most valuable pine forests, is due entirely to the presence of certain forest weeds. Many water weeds cause trouble in drainage and irrigation ditches by their rank growth which is sufficient to stop the flow of water.

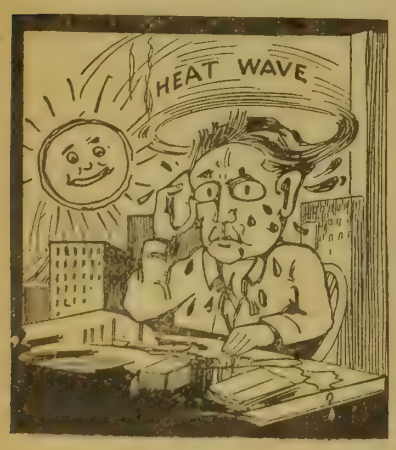
Methods of Controlling Weeds.

Crop rotation and diversification are the greatest foes of weeds, and usually where a single-crop system of farming is practiced weeds are exceedingly troublesome. In many instances where the single-crop system is practiced lands have become so foul with weeds that certain crops can no longer be grown profitably.

To control or eradicate weeds it is first necessary to determine the kind, the character and habits of growth and reproduction, and sufficient about their life history to fix the time when they are most suceptible to treatment. The publication divides weeds into two classes, first the class which because of their habits of growth require several methods of treatment and which includes such weeds as Canada thistle, quack-grass, hawkweeds, nut-grass, Johnson grass, and many others. The second class is composed of annuals, biennials, and such perennials as require no special treatment to kill them. In the control of weeds of this class, which is true of all weeds, it is necessary to prevent their spread from seeds. This can be done by destroying weeds along roadsides, fence rows, in vacant fields, etc., before they go to seed. A systematic rotation of crops also prevents many weeds from seeding. In small grain and hay farming no feature of weed control is more important than the use of clean seed, free from all weed seeds. It is important also to keep on the lookout for the appearance of new weeds, as the spread of many troublesome weeds can be prevented if control measures are employed when they appear.

Co-operation is one of the first essentials of success in any big commercial enterprise Co-operation among the farmers is just as essential for controlling weeds. Weed control is a community problem rather than one for the individual farmer to solve, and without community action the efforts of the individual farmer are usually discouraging. This is true because where weeds are allowed to grow undisturbed they produce sufficient seeds each year to infest the adjacent lands. Agricultural clubs and other farm organizations could perhaps undertake no more important co-operative work than that of controlling weeds. The advantages of community action for the control of weeds, says the publication, can not be too strongly emphasized.

Why Suffer?



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SALT LAKE CITY

Everything for Electricity.

IRRIGATIONS OF SMALL GRAINS

(Continued from page 3)

amount may be considered as waste even though there be no surface run off: If more time is required to cover the acre of land some correction is needed in the method of application, for the excess water is leaching the soil and is being carried away in some under ground drain way. Irrigation is a most important operative and should be given close observation and careful study.

When writing advertisers please mention that you saw the advertisement in the Utah Farmer.

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I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.

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Good Rooms 75c, $1 and up.

The Windsor Hotel Co.

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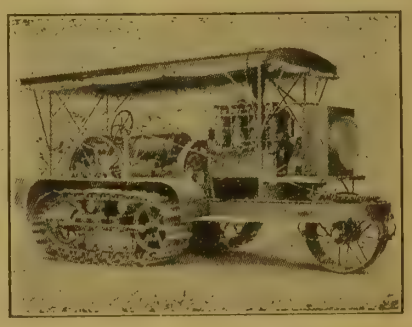
A CATERPILLAR FOR ROAD WORK



Tractor Purchased by Utah County.

The Utah County officials after making several tests have purchased a 75 caterpillar for doing road work, grading, and hauling in Utah County.

Utah County is the third county to buy a tractor of this kind. For good results every county should have one. Several counties in Idaho, California and Montana are using them very successfully.

Road work is seasonable, and usually hard to get the number of teams when needed. One tractor puts the entire power of many horses under the control of one man.

Too often big teams of horses tug or pull unevenly, a tractors never does. The Caterpillar tractor can be worked in ditches or on sides of steep grades.

The tractors are sold by Consolidated Wagon and Machine Company, Utah, Idaho, Wyoming and Nevada.

RELIABLE FARM BARGAINS.

Special Attention to Stockmen.

We have a proposition to offer that has never been offered before. We have several million acres of the finest grazing land in the United States. Right on the railroad. Plenty of water, lots of shade and 12 hours ride from one of the best markets in the United States. For sale. We will sell you this ground at a very low cost, give you two or three years trial before buying and if it does not prove satisfactory you are not required to buy. For further information get in touch with the Farm and Ranch Department.

At East Garland we have a very fine farm containing 70 acres, good stables, small home, granary and other outbuildings, nice orchard; 40 acres under cultivation, 30 acres in pasture land; place can be had for $8000, a small payment down and a long time on the balance with a reasonable rate of interest. If you are looking for a first-class farm, right near the sugar factory, this property will appeal to you. It is located one-half mile from school and church. Telephone and electric lights in the house. Right on the main county road and other conveniences, making it a suitable place for a home.

In Cache valley we have one 71-acre farm right near the station; the property is all under a very high state of cultivation and has been farmed for ten years. Can be had for $125 per acre, 10 per cent down and ten years on the balance. This includes water right.

59 acres right near Tremonton that is panted mostly in alfalfa and has been for a good many years. This property can be had for $160 per acre, small payment down and terms on the balance.

Three 40-acre tracts lying west of Tremonton that we are offering for sale and $140 per acre, 10 per cent down and ten years on the balance.

We have a number of first-class farms for sale in southern Idaho containing 40, 80 and 160 acres, 10 per cent down and ten years on the balance. Also have several first-class farms to exchange for Salt Lake City property.

FARM AND RANCH DEPARTMENT,

KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street.

WE WRITE FIRE INSURANCE.

Office Open Until Sunset.

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

HOMESTEADS

For best homesteads in the west write.

G. A. COLE

Monticello Utah

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.

343 Main Street Salt Lake City

PROFITABLE EGG PRODUCTION

(Continued from page 3)

velopment than is contained in the grains and if we desire to do the best possible with our chicks this is necessary. We should also feed our chicks liberally, in fact the very best we can, as the quickest growth is the most economical, and brings about a better development of the pullets for egg production, which gives us our early maturity and adds profit to the business.

4. The Time to Put Our Pullets Into The Laying House. Their Permanent Quarters.

The house should be cleaned, disinfected and put in good order for winter use before the pullets have started to lay, they should be put in their permanent quarters when they begin to show signs of maturity so that they will become used to their new quarters and begin their laying there. After they have become accustomed to their new quarters, and know where home is, they should be allowed to range as usual where this is possible, but fed in their new house.

5. Proper Housing Provides.

(a) Should be dry.

The laying house should be located on high ground or where there is good drainage. Hens dislike dampness in or around their home.

(b) Provide good ventilation without draughts. Houses should be tight back wall, tight roof and tight end walls with open or partially open front. Hens require plenty of good pure air and do not mind considerable cold, but a close stuffy house always causes trouble sooner or later in one form or other.

(c) Should have southerly or southeasterly exposure. This admits sunlight and helps to keep the house sanitary and the lice and mites do not breed as fast.

Any style of house is all right and any house fulfilling these requirements is good. The essential thing is that poultry houses should be dry, have good ventilation without draughts and admit the sunlight, and, if kept clean and sweet, we will get good results.

6. Feed For Egg Production.

(a) Water.

Good clean water should be kept where the hens can have it all times and care should be taken to see that the drinking vessels never become dry. Lack of water will stop egg production more quickly than any other one thing.

(b) Grit, Oyster Shells, and Charcoal.

These should be kept in hoppers accessable to the hens at all times.

(c) Green Food.

Green food is good and should be furnished when possible. Hens having free range obtain this in the season when it is growing. Where it has to be furnished lawn clippings are good Sprouted oats, mangels, carrots, cabbage, etc., are good. If green food is not available, alfalfa leaves may be kept before them.

(d) Scratch Grain.

The scratch grain may be made up of the available grains obtainable in our own locality and should, where possible, consist of two or more grains with corn furnishing the bulk of the scratch grain. Barley is good. Heavy oats are good—weighing 42 to 45 pounds per bushel. Light oats are a very poor feed and should never be used for poultry.

In some sections, where it is raised, kaffir corn or milo maize may be used as part of the scratch grain. Peas are also good. This scratch grain should be limited to one-half the daily ration which is about two quarts to 25 hens. We like to feed this in the afternoon about two hours before the hens go to roost. It should be scattered in the litter.

(e) Dry Mash.

The dry mash should be fed in self-feeding hoppers and kept before them all the time so that they can eat it at will at any time during the day. This dry mash may be made up of the different ground grains and mill feeds such as bran, shorts, middlings, mixed feed, corn meal, barley chop and beef scrap. This must be one-fourth beef scrap to obtain high egg production. The eggs which the hen manufactures from the food consumed is very much richer in protein than the grains and in order to get high egg yield it is necessary to furnish animal protein in the mash to enable the hen to get this for her manufacture of eggs in large quantities and maximum profits. This is vital and necessary, and it is impossible to obtain high egg production unless we furnish the material required by the hen to manufacture them. There is just one exception to this requirement and that is if the laying hens and pullets can be furnished all the skim milk (sweet or sour) that they can consume. This furnishes the protein and we wish to state that skim milk or buttermilk is one of the best feeds for egg production and if furnished as a drink in unlimited quantity it will not be necessary to furnish beef scrap in the dry mash.

7. Sanitation.

Poultry house should be kept clean and sanitary. Dropping boards should be cleaned often. Daily cleaning is best and only requires a very few minutes. They should be sprayed with some coal tar product, or some good disinfectant, ocassionaly, for keeping down germs and promoting good health and vigor.

8. Parasites.

Hens should be furnished a good dust bath to help in keeping them free from lice. If this is not effective they should be treated for lice. The U. S. Department of Agriculture will send to anyone requesting it Farmers Bulletin 801, entitled "Lice and Mites" on Poultry and it should be obtained.

(b) Mites.

Mites are the worst pest the hens have and should never be allowed in the hen house. Frequent spraying of disinfectants, the same as for sanitation, lends to keep them down, but the most effective method is to paint the roosts and the adjacent wood work with crude oil, doing a thorough job filling in all cracks. This will kill and keep the mites away from the roosts and there will not be any to get on the hens night, when at roost, and suck their blood, thus using the food the hens have digested and need to use in the manufacture of eggs.

In conclusion we want to state, and restate, that profits in poultry keeping depend upon production and production depends upon right method as outlined, if faithfully performed will bring corresponding good results and be profitable. It depends upon us, and in our struggle for increased animal food we should all do what we can to increase production and to so practice good poultry culture to get the maximum yield and return. We can all do this and if we do not get profitable returns it is because we have not met the requirements for high production, is our fault, and should be corrected and proper methods adopted.

Be sure and read the advertisements, it will pay you

The Feeding of Hogs

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Feed High Protein Tankage in addition to the grain, and it will make for rapid and solid growth. Order from your dealer and get the benefit of an early start.

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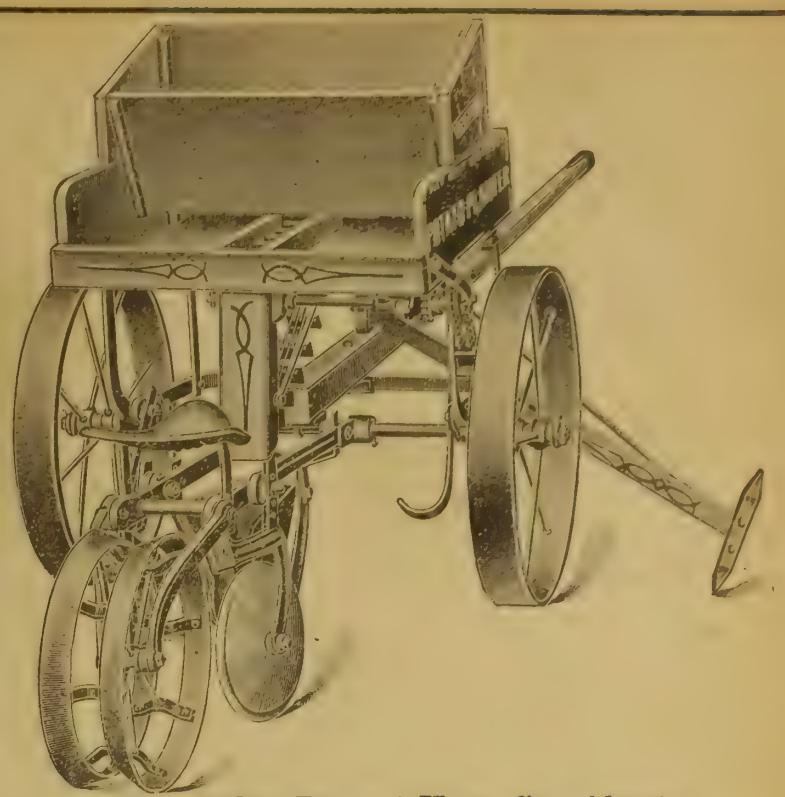

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Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

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Henager's Business College
Salt Lake City, Utah.

BEEF ON HIGH PRICED LAND

(Continued from page 1)

of cattle for a year if handled in corn alfalfa and good pasture.

On many farms there is break land along the small streams which never can be profitably cultivated. This is used for the pasture. In this way the carrying capacity of the farm is increased and in many cases doubled. If the producing power of the land is doubled in terms of cows and calves, then the cost must be cut in half. If the past it cost 12c to produce a pound of beef then it should now cost but 6c. Again, it took two years before to make a 1,500-pound steer, whereas the men who are in this beef production on the high priced land produce a 1,000-pound baby beef in about 14 months instead of two years where, under the old system, they produced only 900 pounds. This 1,000 pounds is produced cheaper than the 900 under the old system. When the calf is weaned, which is about the time he is 9 months old, he is a "corker," he having had all the milk that his mother gave besides being fed. Many of the farmers who are using the "silage, alfalfa, corn method." as they term it, say that they carry many more cows on this feed than I have outlined. It is only a reversion to a cheap feed proposition and a matter of maintaining the cows and not trying to have them look sleek and nice when they come through the winter as in the past.

With cheaper feed we can again have cheaper beef, perhaps not as cheap, ever again as it was in times past but relatively cheap in camparison with the present high prices.

Another important thing in the production of beef, is to have an animal of good quality. Pure bred if possibly, if not use the best pure bred bull you can buy and in this way help to reduce the cost of production. Pure bred animals will grow quicker and make better gains when given the same feed and attention tnan the mongrel or scrub.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

Charles F. Marvin, Chief.

Weekly weather, crop and range report, Salt Lake City, Utah, May 1, 1918.

All vegetation growth was slow during the past week except in extreme southern Utah, principally on account of the cold nights, though the need for rain was also a factor in many localities. Farm work, however, is generally ahead of the average. There was some further injury to fruits by frost, but apples and pears are not in full bloom in most sections, and are not yet seriously damaged. The seeding of small grains is about completed, the planting of beets is well along, and corn and potato planting has begun. Warmth and moisture are needed for rapid crop development. In general range feed is now plentiful and improving, except in the higher districts, where it has hardly started as yet; but in southern Utah and eastern Nevada it will not long continue to thrive without more rain. Lambing and shearing are in progress throughout the region, and some sheep are moving to the hills. Stock continues thrifty.

Castle Dale, Utah.—Range condition improving.

Escalante, Utah.—Range growing well.

Idaho Falls, Idaho.—Range condition excellent.

Manti, Utah.—Range condition fair.

Milford, Utah.—Range condition improving.

Thompsons, Utah.—Fair.

Watson, Utah.—Fair.

Deseret, Utah.—Ranges dry, but grass plentiful; cattle improving some.

Duchesne, Utah.—Stock o. k.; shearing continues.

Escalante, Utah.—Feed growing well on lower ranges; stock in good condition; winter looses below average.

Logan, Utah.—Range backward; cattle good, progressing nicely.

Milford, Utah.—Range improving, sheep and cattle doing well.

Modena, Utah.—Feed good for time of year, but rain is needed, shearing started on 29th.

Montpelior, Idaho.—Low temperature retarding growth, no green feed, but feeding conditions good.

Pocatello, Idaho.—Range good, but grass slow on account of cold nights; lambing good with strong lambs; cattle in good condiiont.

Provo, Utah.—Lower grazing lands dry, vegetation backward, streams relatively small, no lambing yet.

Richfield, Utah.—Range conditions good; sheep and cattle doing fine.

St. George, Utah.—Cattle improving, shearing progressing, sheep in good condition.

Thompsons, Utah.—Shearing finished; feed fair.

Panquitch, Utah.—Cattle and sheep are improving but thin yet.

CONTAGIOUS ABORTION AMONG ANIMALS CAUSING BIG LOSSES

Utah Experiment Station Issues Circular on Its Prevention, Control, and Treatment.

Valuable information for livestock men is contained in Utah Agricultural Experiment Station Circular No. 28, "Contagious Abortion in Mares and Cows." Dr. H. J. Frederick, Utah Experiment Station Veterinarian and Professor of Veterinary Science at the Utah Agricultural College is the author. The State Board of Horse Commissioners co-operated in the publication of the circular.

Dr. Frederick has made a very careful study of contagious abortion in Utah as well as a thorough study of all known methods of prevention, control, and treatment. In this little booklet, which is well illustrated, he has presented just the things the

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practical stockmen wants to know about the disease. Contagious abortion, according to the author, has been known in Utah since 1896. Since that time it has spread very rapidly and is without doubt now prevalent in every locality in the State consituting one of the greatest losses to the livestock industry in Utah. Great as this loss is, most people take it as a natural condition among animals which cannot be controlled and as a result it has been unresisted in its spread.

Up to the present there has been no specific cure perfected. The circular merely contains methods of prevention, control, and treatment. Many calves and colts are lost every year from this disease. This loss can be greatly reduced and in a few years entirely overcome if all the stockmen of the State would follow the instructions given by Dr. Frederick. It is recommended that if aborting cows are unprofitable they should be sold for beef—never for breeding purposes—but aborting animals that are otherwise profitable should not in most cases be sold. After two or three abortions animals usually overcome the disease and are thereafter immune. By proper care the disease can be eradicated from an infected herd. Owners of herds free from the disease should be sure that any new stock brought into the herd is free from the disease.

All stockmen should be interested in this circular, a free copy of which may be obtained from the Utah Experiment Station, Logan, Utah.

FEED FOR WINTERING BEEF CATTLE

(Continued from page 1)

Department of Agriculture indicates that the average long-two-year-old range steer in the sates of Oregon, Washington and Idaho weighs 900 to 1,000 pounds. This kind of a steer is the product of a reasonably good sire and dam, has had good grass for three summers and has been fed for a short period at least for two and generally three winters. The fellow who buys no feed and grows none for his cattle, but who depends upon a bountiful nature to care for and conserve his interests, fails to make such weight by 100 to 250 pounds.

Quick maturity, rapid turning of capital, heavy gains early in life when gains cost least in feeds, are foundamentals in all branches of animal husbandry, and beef cattle production does not furnish an exception. Why not, therefore, pay more attention to winter keep? It is the consensus of opinion of well-informed beef cattle men that a year can be saved by the average beef cattle producer in growing and finishing his steers. The long yearlings can be made to weigh 50 to 100 pounds more than the weights indicated above for long-two-year-olds.

If such results are to be attained, attention must be given to breeding. The herd should consist of thrifty cows and pure-bred bulls of size, thickness, depth and neatiness should head the herd. The next problem and the most often neglected is that of winter feed and care. Ordinarily, some shelter such as trees, shed or other windbreak, should be provided. If the steers are to have good weight as yearlings, they must have no set-back at any time. Losses are only regained at a heavy feed cost, and are necessarily expensive for the beef producer. The later summer grass fat is an important factor in successful winter keep, and must be retained. Meadows and waste of grain fields may carry the herd for days and possibly weeks.

Use Alfalfa and Wild Hay

Then alfalfa, clover and wild hay should be freely used to maintain growth, retain vigor and promote thrift and well-doing. In some cases, particularly for thin cows and for calves and young st ers that need be kept making good gains, concentrates such as cottonseed meal, barley, bran and other feeds of similar nature will be fed with profit. We are realizing in the west today as never before the value of succulent feed for winter. Succulence during the winter months gives us an all-year-'round pasture system of maintenance. Breeding animals are kept in better bloom, are more thrifty and take better care of their calves on succulent or compared with dry feed. Root crops or silage are valuable in this connection, with modern practice strongly favoring the silo. Silage crops successful for this purpose are corn, peas and oats, wheat and peas, barley, etc. For four years in succession the University of Idaho breeding beef herd and young stuff have been wintered largely on silage. It would seem almost impossible, after four years' use of silage, to keep the herd properly if no silage were available. Peas and oats silage has been fed in large quantities with especial success.

It has been found at the University of Idaho that a field pea straw, a once little used by-product of the field pea growing industry, has a distinct value and usefulness for silage. On occount of the shortage of crops available for use in a silo during the past year, two silos were filled with a mixture, the basis of which was field pea straw and this was mixed from ¼ to 1-3 of corn by bulk. The mixture was cut fine, thoroughly wetted and well packed in the silo.

The siloing process that ensued was similar to that taking place in corn and an excellent silage, especially well adapted to the feeding of sheep, beef and dairy cattle, resulted from the mixture indicated above. In two or three places in the silo it was found that insufficient water had been used or the proportion of corn was too low. This resulted in a drier and less palatable feeding material and there was considerable waste. On the whole, however, the results were entirely satisfactory and the herd of sixty head of purebred beef cattle was maintained on this kind of silage for more than six weeks.

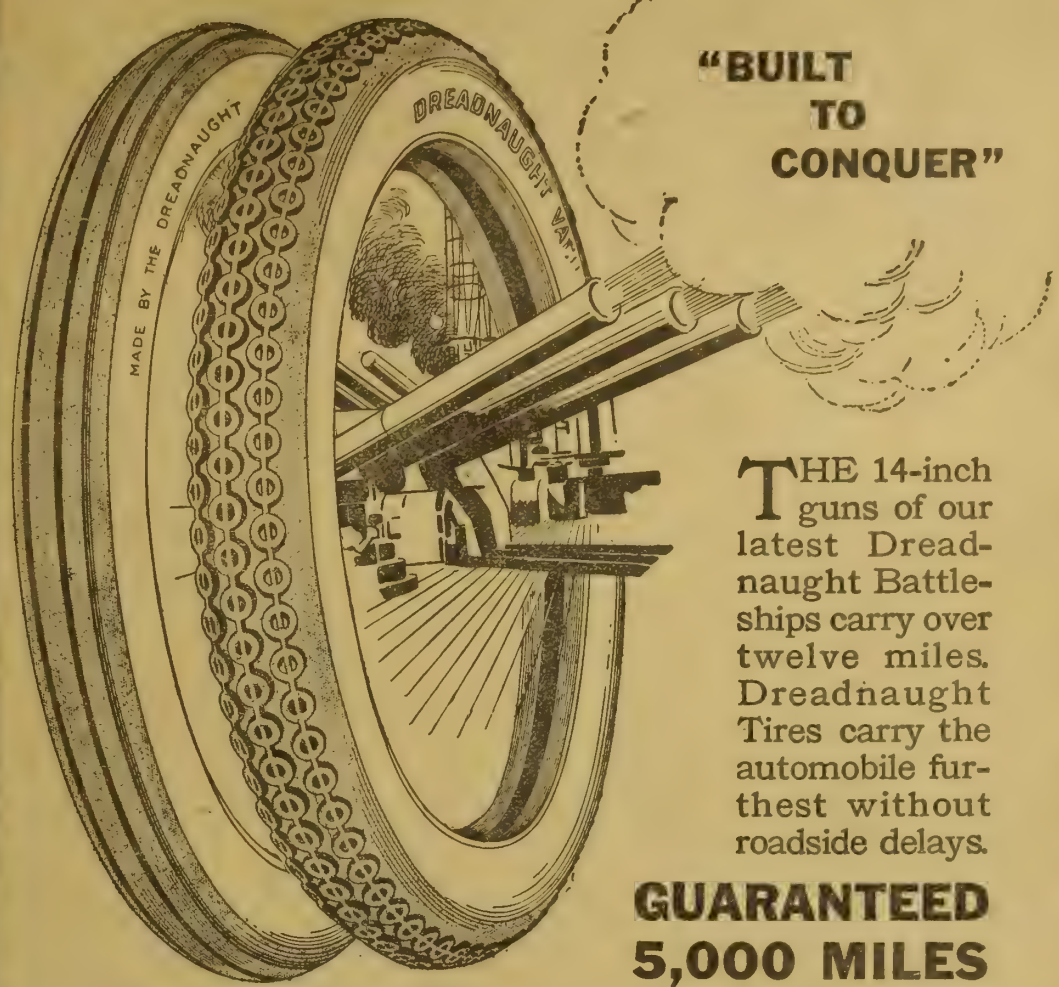
Every pound of food that you raise on your farm and save for future use is a pound more to sustain your family when these foods are scarce. It may be that you will not have to buy the expensive foods that city people find indispensable to their living. If so you are extremely fortunate. Then save the surplus for your own family and to sell to your city friends who are generally glad to buy from the producer.

THE COAL QUESTION

"I see where some of the coal experts are advising people not to buy great quantities of coal at a time."

"Is that advice economy or sarcasm?"—Balitmore American.

DREADNAUGHT TIRES



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HARDWARE—AUTO ACCESSORIES
SALT LAKE CITY, UTAH.

POULTRY

MY POULTRY SIDELINE

Some years ago I heard Professor Warren of Cornell University give one of his first lectures on scientific farm management. One point he made and emphasized above all others was that wisely selected sidelines were an essential to maximum returns from the farm. I was not prepared to agree with the professor at that time, principally because we were then hearing so much of specialized agriculture. Now I am in full agreement with Professor Warren and my change of heart has brought more profit to myself than is liable to give satisfaction to the professor. I was just one of the several hundred boys in an agricultural college that he was visiting. My conversion is most directly due to my own experience as a farmer.

When we started on the farm, dairying was our main line; in fact it was designed to be almost the only line. Now dairy cows do not account for quite half of the total farm income. Pigs are a natural sideline to dairying and we have them. Fall wheat and potatoes have been profitably developed as cash crops. But best and most profitable of all is our poultry sideline. It has proven an ideal addition to the dairy farm.

Our first year we entered 130 pullets. They were pure-bred Leghorns and Barred Plymouth Rocks of the very best bred-to-lay strains. We had not spared money in purchasing our hatching eggs. We had hatched out enough chickens to have 250 to 300 pullets in the fall. Disease, due to overfeeding, got the most of the first lot and the neighbor's cat made away with 75 fine pullets of the second lot before we were able to get the cat. When fall came and we had only 130 pullets left, we thought we had some excuse for being discouraged with the business.

Once the chickens started laying all our discontent with the poultry business vanished. We got first eggs in early October. By December the egg yield was running from 40 to 50 per cent, in January it passed 60 per cent, and in March 70 per cent. From then on the percentage declined, but there was a good, profitable production of eggs right up to September. We kept careful account of all the feed used by the pullets and found that for the first laying year, dating from Oct. 1st to the end of the following September, the bill for grain, charcoal, oyster shell, grain feed, and skimmilk, the latter credited to the cows at 30 cents a hundredweight, totaled almost $3.00 a bird. Everything was charged at the highest market price. The yield was around 170 eggs per bird and the receipts totalled six dollars each, a profit from the 130 pullets of $390. The eggs were not sold at fancy prices; a wholesaler in the city of Toronto got the lot. I have heard that 100 hens may be fairly compared with one cow as profit makers, but we have never yet had a cow that did as well as those hens.

This three-dollar estimate covers only the feed. In addition the labor involved and the interest on the investment should be considered. The labor we kept at a minimum. The whole flock were run in one 20-foot house, their dry mash was fed in hoppers, and they had grain scattered in the litter twice a day. Only in the coldest part of the winter did they get a wet mash and even then I'm not sure that it added anything to the egg yield. We had no dropping board to clean. The manure fell to the floor and froze where it fell. Only at infrequent intervals was it necessary to clean the house, about once in three months in the winter time. The house was constructed for $100, labor and all; our incubator cost $43 and eggs $60, so the charge against investment is not heavy.

I have not considered the cost of hatching and rearing the pullets to laying age. As near as we could estimate it took one ton of feed to carry 100 pullets from the shell to a laying age. Here, too, we kept labor at a minimum. We had a big 400-egg incubator which represented very little more labor than several smaller ones would have done and the chickens were brooded in flocks of 300 with a coal burning brooder. We consider both the incubator and brooder a necessity if poultry is to be a worthwhile sideline. When the cockerels were 8 to 12 weeks old they were disposed of as broilers. The money realized from the broilers goes a long way toward paying the cost of rearing the pullets and when we sell the pullets as breeders at the end of their laying year, we actually realize a profit on the renewing of the flock. I might mention, too, that with more experience and a shotgun always ready for stray cats, the mortality among the chicks has been less.

We now have only one breed and that a special purpose breed, the Leghorn. We never had any use for dual-purpose cows and we have found that the same ruling applies in the poultry world, the special purpose fowl is a profitable fowl. In fact what success we have had in poultry has been due to following the lessons of our dairy training. We have gotten the best of stock, we have given them regular attention, and we have fed them to capacity.

Our dairy herd is still up to full strength. The money we make from poultry is perhaps made a little easier than the profits that come from dairying, but the two are at their best when worked together. In no way can skimmilk be disposed of to better advantage than through poultry. Our good egg yields and the satisfactory growth of our chickens we attribute in large measure to abundant supplies of sour skimmilk. We have never had to buy expensive beef scrap and we believe the eggs are more fertile in spring than they would be if beef scrap were fed. The work nicks in well with dariying; so well, in fact, that it represents practically that much extra profit without any extra expenditure for labor and this is our idea of a good sideline, one that does not increase unduly the outlay for either labor or equipment. This winter we have 200 pullets and in spite of the high cost of feed, the profits per bird will be right up to our first standard.—F. E. Ellis.

FEEDING GROWING CHICKS

Some Timely Suggestions That Will Insure Thrifty Broods.

After the chicks are 10 days old a good growing mash, composed of 2 parts by weight of bran, 2 parts middlings, 1 part corn meal, 1 part low-grade wheat flour or red-dog middlings, and 10 per cent sifted beef scrap, may be placed in a hopper and left before them all the time. The mash may be fed either wet or dry; if wet, only enough moisture, either milk or water, should be added to make the feed crumbly, but in no sense sloppy. When this growing mash or mixture is not used a hopper containing bran should be accessible to the chickens at all times.

After the chickens are two months old they may be fed four times daily with good results. After they are three months old three feedings a day are enough.

When one has only a few chickens it is less trouble to purchase the prepared chick feeds, but where a considerable number are reared it is sometimes cheaper to buy the finely cracked grains and mix them together. Some chick feeds contain a large quantity of grit and may contain grains of poor quality, so that they should be carefully examined, and a guaranty as to quality secured with the purchase.

Sour Milk Will Hasten Growth.

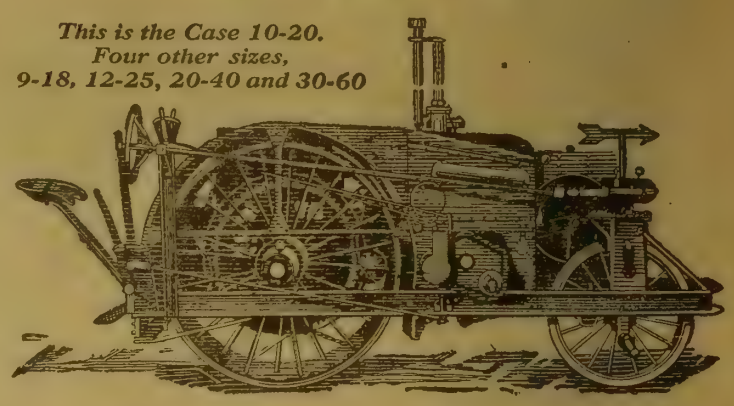
As soon as the chickens will eat the whole wheat—usually in about eight weeks—cracked corn, and other grains, the small-sized chick feed can be eliminated. In addition to the above feeds the chicken's growth can be hastened if they are given sour milk, skim milk, or buttermilk to drink. Growing chickens kept on a good range may be given all their feed in a hopper, mixing 2 parts by weight of cracked corn with 1 part of wheat, or equal parts of cracked corn, wheat, and oats in one hopper and the dry mash for chickens in another. The beefscrap may be left out of the dry mash and fed in a separate hopper, so that the chickens can eat all of this feed they desire. If the beef scrap is to be fed separately it is advisable to wait until the chicks ar 10 days old, although some poultrymen put the beef scrap before the young chickens at the start without bad results.

Chickens confined to small yard should always be supplied with gree feed, such as lettuce, sprouted oat alfalfa, or clover, but the best place t raise chickens successfully is on good range where no extra green fee is required. Where the chickens ar kept in small bare yards, fine charcoe grit and oyster shell should be kep before the chickens all of the tim and cracked or ground bone may b fed. The bone is not necessary fo chickens that have a good range.

SHE WANTS YARN

Mary had a little lamb,
But didn't give a darn;
Instead of fleece as white as snov
She wanted khaki yarn.
—Western Newspaper Union.

CASE
KEROSENE TRACTORS



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THIS is a picture of the famous Case 10-20 Kerosene Tractor, the model that has been purchased by thousands of successful satisfied farmers.

It pulls three 14-inch plows anywhere a team can continuously pull one plow. It is the most powerful tractor in the 5000 pound class. It delivers 14 7-10 per cent more drawbar horsepower than rated.

It embodies the latest and best engineering principles, being built by the J. I. Case Threshing Machine Company, famous among farmers for 76 years. So it is not an experimental type made by a concern unacquainted with farm needs.

It has a 4-cylinder Case valve-in-head motor and burns kerosene successfully and economically. An efficient air strainer prevents dust and grit entering cylinders.

In plowing, all wheels travel on unplowed ground. The combined tire width of drivers is 32 inches. There is absolutely no side draft and no soil packing.

Under belt, this Case 10-20 drives a 20 x 36 Case Thresher with all equipment; a Case No. 16 Silo Filler, and other machines requiring similar power.

You cannot afford to buy any tractor before you learn the advantages of this Case 10-20. Inquire of a Case dealer or write to us for a catalog.

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Some good spring litters. Richard Defende rand Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.
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White Leghorns, Brown Leghorns, $12.00 per 100.
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I have three or four registered and grade heifers to spare of good breeding.
Priced from $60 to $175.
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I have about 3,000 lbs. of U. S. Army beans, choice seed, price 16 cents per lb. They used to be called "Mex. Pinto" but they are to good for the name. More should be raised. Send orders with cash to
FARMERS CASH UNION
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LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Calalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

RAISE TOMATOES

Tomatoes are very valuable foods. They are excellent when served fresh on the table. They may be canned without trouble or expense and used later. It is one of the foods that should be produced in large quantities on farms because of its value as a food and its adaptability for saving in various ways.

POULTRY NOTES

In the spring it pays to observe the condition of the drainage on the poultry range and around the houses. Frequently a few lines of tile will place the ground in better condition for the birds after every rain and especially improve the range in the spring when the frost is coming from the ground. An undrained poultry range increases the danger of illness in the flock.

* * *

We have found boiled oats a very satisfactory grain feed for the hens considering the high price of all feeds. The oats which have cooked on the stove all night become plump like large kernels of wheat. We believe that these boiled oats are easily digested by the birds and we throw them into the litter in the poultry houses in the same manner as we would use a mixture of scratch grain. The hens enjoy them much more than the dry oats and they help to cut down the high cost of feeding the flock.

* * *

A windbreak on the poultry range is of the greatest value, and protection from the wind should be considered in the building of all kinds of poultry houses. In a recent severe wind storm one of our eight by ten colony houses was carried about twenty feet and turned wrong side up, while houses which were slightly protected from the path of the wind were not disturbed.

* * *

When making out the garden seed order it will be no mistake to include mangels. It is surprising how many barrels of this vegetable can be raised in a small corner of the garden and they will reduce the expense of feeding the flock and keep the birds healthful next winter. When the temperature was far below zero, we sliced mangels and boiled them for the hens. They were then eaten before becoming chilled and this helped to prevent the devitalizing effect of extreme cold weather which often injures a flock of laying hens.

* * *

Gather eggs frequently if they are to be used for incubation. Chilled eggs will not hatch and it is simply a waste of valuable eggs to attempt to hatch them. The value of every egg should be emphasized this year and also the fact that there is little patriotism in wasting eggs in careless attempts to hatch chicks. The foundation of successful hatching is in carefully saving the best appearing eggs from mature and vigorous breeding stock.

* * *

The raspberry patch will make a fine range for young poultry. The dense shade from the canes will form a protection from hawks and the amount of fertility added to the soil by the poultry will be of value to the berries. The birds will keep down the growth of weeds an do little, if any, damage to the fruit. We have never had raspberries injured in any way by allowing the poultry to use the patch for a range.

* * *

A little co-operation in the owning of an incubator may prove profitable among some neighbors. If a large machine is purchased by two neighbors the chicks can be divided or if a small machine is used, one can have the first hatch and the other the second. This form of co-operation is hardly practical, however, unless neither party can afford to buy a machine of his own. The work and risk of hatching chicks may cause misunderstandings and such partnerships are only successful among the very best of friends.

* * *

If day-old chicks are purchased, the brooding equipment should be in order before the chicks arrive at the express office. Otherwise the chicks may remain too long in the shipping boxes and it is best to remove them as soon as possible. When buying chicks in our community we have the brooder stove burning vigorously and well regulated before going over in the car to the hatchery. Then the chicks spend but a short time in the box before they are allowed to run and scratch in the litter and sand on the brooder floor. Always inquire the exact hour of hatching from the operator of the incubator so that the chicks will not be fed too soon. We find that chicks do the best when they receive no food until about sixty hours after hatching.—R. G. Kirby.

THE SOY BEAN

Considerable interest has been taken this year in soy beans, the following suggestions are given by the North Carolina Agriculture Experiment Station:

Preparation For Planting.

Good preparation of the soil is of cardinal importance with soy beans; otherwise, weeds are likely to choke out the young plants. The most successful growers plow the land early and deep, and then work with disk and harrow until a firm seed bed, with the upper two or three inches loose and mellow, is secured. The young plants of soy beans are unable to push their way through a hard crust; so, to insure a good stand, the seed should be lightly covered with loose mellow soil.

Time of Planting.

Soy beans are sown any time after danger of severe frosts is over, from early spring to midsummer. Two crops of the early varieties may be grown in a single season. But the late varieties are preferable and should be planted about the same time or a little after corn.

Seeding and Cultivation.

Soy beans are usually planted in rows, whether for seed or hay purposes; yet, if the land is exceptionally free from weeds they may be sown broadcast or drilled for hay. The general practice is to plant in rows 4 feet apart, with the plants 2 to 3 inches in the row, and hilled as high as possible to aid in drainage, which is very important at present in many instances in this section. In rows, from 20 to 30 pounds of seed per acre are required; when sown broadcast or drilled 60 to 90 pounds. The planting should be shallow, preferably one inch and not to exceed two inches. Row planting is generally done with a cotton, corn or bean planter, or by hand. Where drilled, the ordinary grain drill is used. The distance between the rows can be adjusted as desired with the grain drill by covering the feed cups not in use.

The seed germinate from three to five days under proper soil conditions. As soon as the seedling plants appear above the ground, cultivation may be gin, and usually at least three cultivations are given.

Save energy by doing farm work with a gasoline engine whenever it is possible. A good engine will perform any work to which it is adapted much cheaper than it can be by hand or frequently by horsepower.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah

BABY chicks; eggs for hatching; all varieties. I make deliveries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

DAY OLD CHIX
Wise economy is quality not price, we sell cheap when quality is the main consideration.
ARCADY PLACE HENNERY
is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.
A. T. SMURTHWAITE
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Black Diamond Dehorning Pencil.
Every pencil will dehorn 50 head from ten days to one month old for $1.00. Forfeit of $5.00 on any calf if it fails to dehorn.
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Corn and Potatoes

For Bumper Crops get our acclimated Dry Farm Grown White Flint Corn and Irish Cobbler Seed Potatoes. Write for Prices Today.

Porter-Walton Co.

Seed and Nursery Specialists

Salt Lake City

MORE WORK AND LESS TALK

John Spratt.

In looking over my daily paper I find so many articles gotten up by as many different people and it is amusing to see what fool notions some of them have about what we farmers should and could do if we only had their brains with our strength. As it is we just have to plug along the best we can. Common horse sense is good to have and it is a pity some of these people who are doing so much talking are so short on even horse sense. The farmers are doing all they can and getting very little help from the government or anybody else. If we win this war it will be done by the boys at the front and our laboring men at home and not by these wise guys who are burning up the roads and useful gasoline that would be better used in a tractor to plow up some of the idle ground owned by speculators who will not farm it themselves nor lease to any one else to farm unless they get all the crop for the use of this land.

With all the rest of our taxes this idle land should be taxed at just the same value as the well improved land surrounding it then these speculators would work or get out and let some one who will work have the land. Many are willing to farm if they could only get the land to work on. There is land adjoining me that is idle and is not much good for pasture which I have tried to lease for the past four years and I know of several others who have tried to get the same land. I pay $15 a year taxes on my 160 acres and this man pays $20 on his 160. I continue to improve the value of his land while he gets the benefit. The people are short of the food that could be raised on this idle ground while the dog in the manger keeps out the chap who could use the hay.

A whole lot of these fellows who are holding this kind of land are calling us slackers because we don't pay them all we make for their unpatriotic land. What we need is more work and less talk, more road work on our bum roads and less on our Lincoln highway, more farmers and fewer tourists. Build roads for the farmers to get their produce to market and give them first rights to the roads and if there is not room for both let the tourist take the ditch or stay at home. We need more plain business and cut out the pleasure until times are better and feed and gas are more plentiful. There is plenty of land and plenty of people to do the work if they were only put in on the job instead of going around with their wise looks and poor advice. Talk does no one any good and gets nowhere while the talkers eat up good grub that should go to the ones who do work and can't get it for want of the price.

———o———

ELECTRIC PUMP EFFICIENT FOR FARM SERVICE

Power Cost is Low and it is Invaluable Aid in Case of Fire.

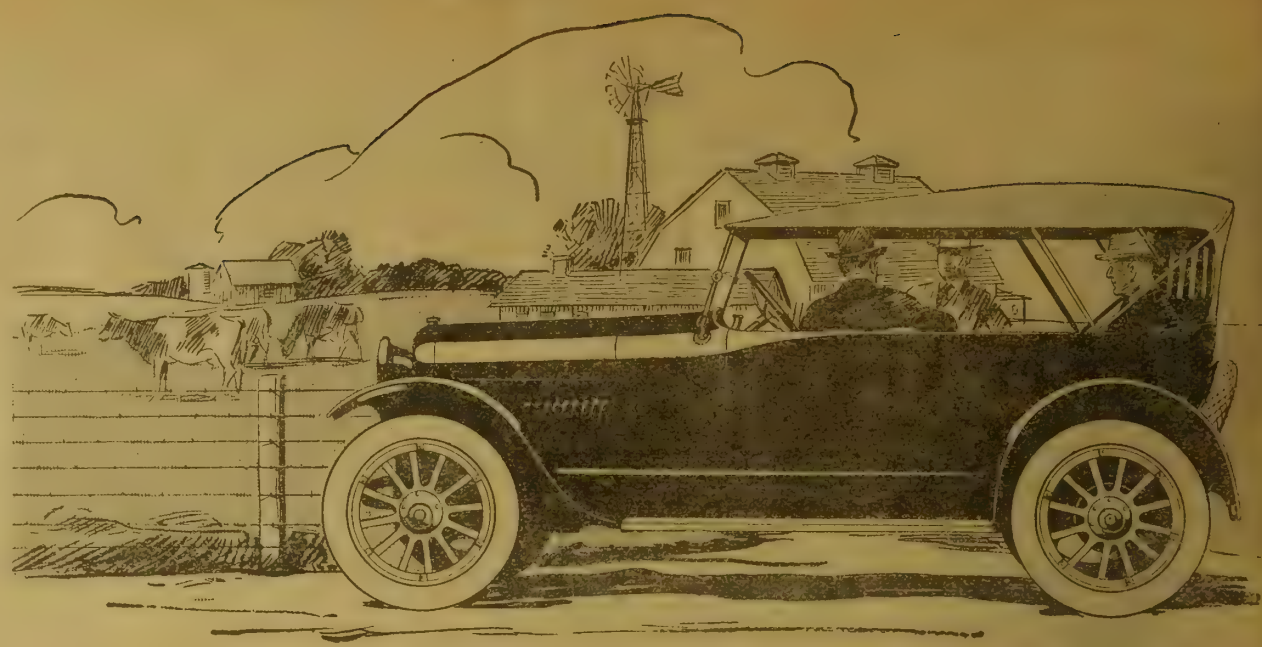
By its great flexibility, the electric motor used on the farm for general power service may be quickly turned to pumping work. It has overload capacity, constant speed, portability and may be controlled from any point. It is economical in space and power, and may be instantly thrown into most effective service in case of fire, which means a reduction in insurance rates. Of the yearly fire loss in this country, more than 50 per cent occurs in the rural districts.

The single-phase induction motor has proven especially adapted to this class of work, having marked ability to start under load and hold up to the work. A complete electric pumping set, for house and fire service, compact, available for any emergency, small enough to be placed anywhere, costs about one-tenth that of a windmill. By simplest devices it may be arranged to hold the tank water, at constant level, and yet be automatically adjusted for high-pressure fire service to its full capacity.

When used for water supply and pressure service alone, as from shallow or deep wells, the cost of pumping, on the basis of 10 cents per kilowatt hour, for example, with a suction lift of 22 feet and pumping against pressure of 50 pounds per square inch is 10 cents per 1000 gallons pumped, at rate of 720 gallons per hour. For deep well service, with total head of 150 feet, the cost would be 20 cents per thousand gallons pumped, at about the same rate per hour.—Wm. S. Aldrich, Colorado A. C.

———o———

"The American eagle—" began the grandiloquent man. "Never mind the eagle now," interrupted Senator Sorghum. "Let's talk about flying machines."—Washington Star.



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The Most Beautiful Car in America

The Modern Farmer and His Car

Once upon a time, agriculture was a mere gamble with Fate. Ground was broken—seed planted—and the farmer spent the rest of his time hoping that the elements would take him into partnership.

All of that has changed now. The modern farmer has become a *business* man.

He employs the scientific information which is supplied him by our Government. He makes a study of his own local problems and plans his crops accordingly. He thinks in terms of markets as well as products, and, above all, he uses thoroughly efficient mechanical equipment.

He buys a motor car because sound analysis has convinced him that he can't afford to get along without one. Furthermore, he buys a good car—a *quality* car—because experience has demonstrated that inferior equipment is never economical.

Here, in a nutshell, you will find the reason why more than 70% of Paige production is sold in farming communities. It's a matter of cold blooded business judgment—the deliberate preference of intelligent men for a car that measures up to their requirements.

And here, incidentally, is the most convincing reason why *your* next car should be a Paige.

PAIGE-DETROIT MOTOR CAR COMPANY
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ROSS SILO FILLERS with STEEL BLOWER AND CUTTING CYLINDER

The Ross Cylinder type Silo Fillers No. 18 and 20 with 6 Fan "DISTRIBUTION LIFT" LOW SPEED "STEEL" BLOWER are The Silo Fillers that operate successfully with 10-20 and 12-24 Tractors.

No Silo too high or requirements so great but what the ROSS Silo Filler will do the work with ease.

Reasons for this fully explained in ROSS Catalog. No limit to our guarantee because there is no limit to THE ROSS.

For jobbing work and extra heavy neighborhood work these Silo Fillers have no equal. Individual Guarantee with every machine. Our proposition is especially interesting to Early Buyers.

THE E. W. ROSS COMPANY Box 144 SPRINGFIELD, OHIO 68 Years' Experience

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WATER SUPPLY

Figure the cost of your water supply per year on the basis of *service*—not first cost. When you buy an Eclipse Wood Windmill you get the most reliable water supply at the smallest cost. Eclipse mills after

38 Years of Service

are still pumping water—*with no repair expense*. Go to your dealer and ask him about the Eclipse—its powerful superior construction, long life and many other features. He's ready to sell and serve you.

FAIRBANKS, MORSE & CO.
Chicago, Illinois *Manufacturers*

$1.65 A YEAR

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 42 LEHI AND SALT LAKE CITY, UTAH. MAY 18, 1918

The Livestock Opportunities In Utah

Dr. W. E. Carroll, Utah Agricultural College.

Utah is by natural endowments and force of necessity primarily a livestock state. By far the greater part of the area of the State can never be cultivated due to its broken character or lack of sufficient rainfall or irrigation water. In spite of these conditions this vast area produces feed enough to support thousands of head of high class cattle and sheep. And strangely enough, cattle and sheep seem to be about the only (or at present the most profitable) means of harvesting this feed.

Much of this excellent feed is in the higher altitudes on the summer range, where cool, pure water, cool nights and plenty of shade abound—a combination which is unequalled for growth, development and fattening of cattle and sheep.

Not all farmers of the State have access to these favorable range conditions, and yet there are many other systems of livestock farming open, so that livestock operations should be made to contribute rather largely to the profits of the large majority of farms of the State.

The following are some of the advantages of keeping livestock on the farm:

1. The fertility of the soil is more easily maintained where livestock are kept. Animals live largely on the organic portions of plants, leaving most of the mineral or ash to pass through their bodies. This can be returned to the soil and is the plant food so necessary to the production of large crops. The return of this plant food is not possible when the crops are sold off the farm.

2. Feed otherwise wasted and much unmarketable material can be converted into cash by the use of livestock. Stubble fields, beet tops, straws, fodders, and low grade hays can all be utilized effectively in feeding livestock when they would be total waste if no livestock were available to consume them. This is also true of the feeds which grow in waste corners, on canal and ditch banks and along fence lines.

3. Livestock farming is an indication of intelligence and progress. Livestock sections the world over are recognized as the most progressive sections of the State or country.

4. Profits on the average are greater under a system of livestock farming than where no livestock are kept. There is the opportunity for a double profit: one on the growing of the crops and another on the marketing of them through livestock.

The income from many systems of livestock

DR. W. E. CARROLL.

farming is better distributed than that from farming without livestock. This is an advantage in meeting bills from month to month.

5. One of the chief advantages of livestock farming over other systems is that the labor is more evenly distributed throughout the year and it also offers a market for winter labor. The farmer without livestock is forced to "shut up shop" in the fall and remain closed till planting time. How long would a mercantile business last in these days of competition which was forced to close its doors nearly half the year? Is it not clear that the livestock farmer has a decided advantage in this more even distribution of labor?

6. An advantage too often not considered is the effect on the boys and girls on the farm of having the companionship of these dumb friends. Is it too much to assume that this companionship will result in a broadened interest in, and a deepened sympathy for all living things which can be developed in no other way? Be that as it may, it is true that fewer boys and girls are lured away from good livestock farms into the uncertainties and temptations of the city.

For the general farmer there are many avenues open into the profits of livestock farming. One which can be and should be more uniformly entered is the fattening of some class of livestock. Many crops which must be grown in the rotation on a general farm, fit well into the ration of fattening livestock. A car load or two of either cattle, sheep, or hogs fattened during the winter season will be found a profitable market for the summer's crops as well as for the surplus labor so common in the winter. Continued practice of this will keep up the fertility of the soil and bring many of the advantages mentioned above as belonging to a system of livestock farming.

The marketing end of the feeding "game" seems to be pretty well solved for the farmers of Utah and near by sections. The reorganization and development of the Stock Yards and Packing Industry at Salt Lake City and Ogden assure an open and competitive market for all the livestock fattened by the farmers of this section.

With the depletion of the world's supply of livestock which is taking place during these days of destruction, the future is full of promise. When the devastation ceases and the Stars and Stripes make the world "a decent and safe place to live in," the nations must be supplied with livestock and livestock products and their depleted flocks and herds must be restored. This is a great responsibility and will rest largely upon the farmers and stock growers of this country. With this as a future market and war demands as a present market there seems nothing but success awaiting the man who intelligently handles his livestock business.

A CHEERFUL THOUGHT

Be cheerful. Mental depression checks digestion. Poor digestion wastes food. Wasted food helps the enemy. Cheerfulness is conservation.

Tested and Accepted

Stockmen throughout the West are adopting Sunripe Stock Feed as the economical and profitable feed for their stock.

SUNRIPE

Stock Feed

a scientifically balanced ration of grain and gain products, and cotton seed meal.

Send for booklet "Feeding for Results." It's FREE.

Utah Cereal Food Co.
Ogden, Utah.

THIS TAG PREVENTS LOSS

If you prevent the loss of a single steer, by tagging your stock with Perfect Ear Tags, you'll save the cost of all the tags you use. The Perfect Ear Tag is commanding attention of all stockmen. It is light in weight—made of aluminum; non-corrosive; non-poisonous; readily attached with one operation; has liberal room for name and address of owner, number, etc.

FOR CATTLE, SHEEP AND HOGS

SALT LAKE STAMP CO.
SALT LAKE CITY, UTAH

Send for Free Samples

Without obligation to me, please send FREE Samples of PERFECT EAR TAGS, and Price List.

Name .....
Address .....(4-18-8)

In addition to its own resources of $8,600,000, this bank has back of it the resources and facilities of the Federal Reserve System, amounting to more than $3,176,454,000.

Walker Brothers
Bankers
Salt Lake City.

SUGAR BEETS

GREATER SUGAR OUT PUT IS VITAL

R. E. Miller.

From reports that I have been able to obtain sugar is essential and as large a crop as possible must be produced.

Farmers are to receive this year the highest price ever paid for sugar beets and it should be an unducement to them to do just a little better farming a little more care in thinning and cultivation. The higher price will pay for the extra effort as increased yields will follow.

Many have already done their first cultivation and ready for thinning.

This first cultivation will help to kill the weeds that have already and the mulch thus formed will help to retard the loss of moisture. There is many advantages to the soil and growing crop if good cultivation is practiced. Remember the land process as you make it produce, the right kind of cultivator is important.

After the first cultivations and thinning has been done the young beets will start to form and the small roots will seek the moisture below. They should be allowed to do this until their ability to go deeper has been exhausted, and their irrigation should be applied in quantities and at such periods as will cause the beet to build out in diameter, thus large tonnage can be secured. Beets should not be watered to early or too often.

The recent rains in most sections of the beet growing communities will greatly help to secure a good stand of beets. Thinning will soon be on and it is then that the grower must be on the job all the time. Indifference or carelessness in thinning can easily reduce the yield one fourth in the tonnage produced. New help will be used this year and they should be carefully instructed in the best way to thin and see that it is done for a loss of a few tons mean a loss of much money with beets selling at $10.00. Always leave the strong plants and pull out the weaker ones. Some seed seems to have stronger vitality than others, and these beets have an advantage over the others because their roots have spread out and have already began taking food out of the soil. It pays to always leave the stronger plants. Many of the thinners are willing to do the work the best possible way but they need help so the grower must be on the job all the time if he expects to get the best results.

WEST CACHE SUGAR COMPANY

A controlling interest in the West Cache Sugar Company has been sold to Denver and Salt Lake people. At a recent meeting new directors were elected. Joseph F. Featherstone who has been with the company the past two years as agricultural supertindent has been chosen as general manager. He has had several years experience in the sugar business. He says that the same policy toward growers will be continued, and that the farmers are planting an increased acreage for the company this year. The company is not connected with any other sugar company.

ANGLE WORMS

Provo, Utah.

Utah Farmer:

Gentemen:—Are angle worms considered harmful to crops or gardens or do they build up the soil?

L. W. Clark.

Answered by W. W. Henderson.

Earth worms are not considered to be of any economic importance to crops, gardens, or to the soil. They feed upon decayed vegetable matter and perhaps do add slightly to the fertility of the soil. But this is so small as to be worthy of little consideration. They do not eat living tissue and consequently do not devour any crops. Some observers give them credit for working down the soil and reducing it to a finer constituency. The only harm that they can possibly do is in places where moisture is scarce and where they perforate the soil with their burrows and cause it to dry out sooner.

SIMPLE REMEDY

"I have so much on my hands now I don't know what to do."

"Why not try a little soap and water?"

REPUBLIC

The All-Around Motor Truck

For every day in the year service—for dependability and lowest operating cost—for light or heavy hauling—put your confidence in the Republic.

Whether you want a machine for light run-about work on the farm or for hauling heavy loads of hay, grain or produce, you will find a truck to fit your needs in the Republic line. There's a ¾ ton Republic and a 6-ton Republic and a lot of Republics in between.

Write us for further information.

INTER-MOUNTAIN OLDSMOBILE CO.
43 W. 4TH SOUTH ST. TEL. WASATCH 4560

Salt Lake City, Utah.

More Than Half of Our Power Is Hitched to Uncle Sam's War Machine

The other half of our power permits every individual to attain wartime efficiency, saving time, food, labor and money.

COAL IS A BIG FACTOR

Water power is a faithful ally of the United States at this time when great demands are being made upon the coal supply. Electric energy provided by the water power plants of the Utah Power & Light Company saved the people of Utah 1,000,000 tons of coal last year. Even greater savings are to be effected in 1918, forming a big contribution to national efficiency. Besides conserving the available supply our energy is stimulating the output of the mines. Coal mines have 6,857 horse power connnected to our lines. In addition 11,000 horse power is represented in connections used for cooking.

MUNITIONS ARE VITAL

In the successful conduct of war, munitions are indispensable. In Utah and southern Idaho electric power equivalent to 64,020 horses is engaged in this industry. Power from our lines in producing powder for use on the battle fields of Europe. It is increasing the output of metal mines and converting it in the mills and smelters, to tanglible weapons against the enemy.

FOOD WILL WIN

Factories producing food have exactly 6,031 horse power connected to our transmission system. Power from our lines is speeding the production of sugar cured meats, canned goods, flour and cereals as well as other products necessary to the welfare of the fighting men.

CLOTHING IS NEEDED

Our fighting men in Europe as well as the forces at home must have clothes. Utah has not reached the height of her possibilities in the manufacture of clothing. Nevertheless the woolen mills of the state have connected 85 horse power to the lines of this company.

GREATER LAND PRODUCTION

To keep the factories supplied with products to meet the increased demands of war, agricultural production must be increased. The power of 6,329 horses has been put to work on the farms of Utah and Idaho. Power from our lines is used in irrigation as well as in the manufacture of farm implements.

TRANSPORTATION SYSTEMS

In war, transportation systems must move like clockwork, and electric energy is doing its bit in efficient operation. Electric energy of 24,607 horse power is engaged in the transportation so necessary to the successful conduct of war.

RAPID COMMUNICATION

As necessary at home as it is at the front, communication must be rapid and uninterrupted. Electric energy is the life of it. Our power is linked to the national system.

125,493 HORSE POWER

Western industries directly related to the war have 125,493 horse power connected to our lines, while 106,300 horse power furthers the efficiency of the forces at home.

Yours For
Efficient Public Service,

Utah Power & Light Co.

ESTABLISHED 1894

PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

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ONE DOLLAR A YEAR

FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, MAY 18, 1918 No. 42

Fighting Weeds On the Farm

H. T. Delp. (Through the Leaves)

A weed is any plant which is out of lace. It is a parasite on our crop ields which drives the eagles from ur bank account and ruins our farms. he tactics of the weed are worked ay and night and persistently purues a man's only hopes for success on e farm, good clean crops. The weed ccomplishes its end by working its vil above the soil, in the soil and on e market. Its effect is both tem orary and permanent.

Any plant, whether it be a wild lant or a cultivated one may become weed in the crop we are attempting grow. Oats, either wild or tame, ay so speckle our wheat fields that e are ashamed to be the owner. odder in the alfalfa may ruin the tand, decrease the yield and practially prohibit a respectable job of harsting. All kinds of weeds may rob ur corn, beets and other crops of eir own daily food thereby hindering eir growth so they are unable to roduce the good yield which was nce hoped for.

Weeds take the only food in the soil om our crops. They not only rerd, hamper and finally entirely heck the growth of the crops this ear, but the valuable plant food they ke from the soil is gone forever, and orse still, they grow and multiply eir army to come back with renewd vigor to attack our crops next year nless we take preventative steps hile they are in the preventing form, at is, growing above the ground. Veeds in general are vigorous and ersistent or they could not crowd out ur crops.

Weeds drain the soil of valuable ater which belongs to our crops. So nportant is this fact in crop producon in parts of the U. S. that the allnportant purpose of cultivation is id to be weed killing. Weeds are alays on hand when plants are strivg and suffering for water and they t their share of what is to be had. hey require just as much water to roduce a pound of dry matter as does valuable field crop, but the farmer ceives nothing in return for his ant food and water, except disapointment.

Then when the crop is threshed d hauled to the market in the fall is quite a disappointment, a slight sgrace and oft times a great financial s when the elevator man gives a ce dockage for foreign seed and maged or shrunken grain. The lue of the grain for seed is lowered entirely lost.

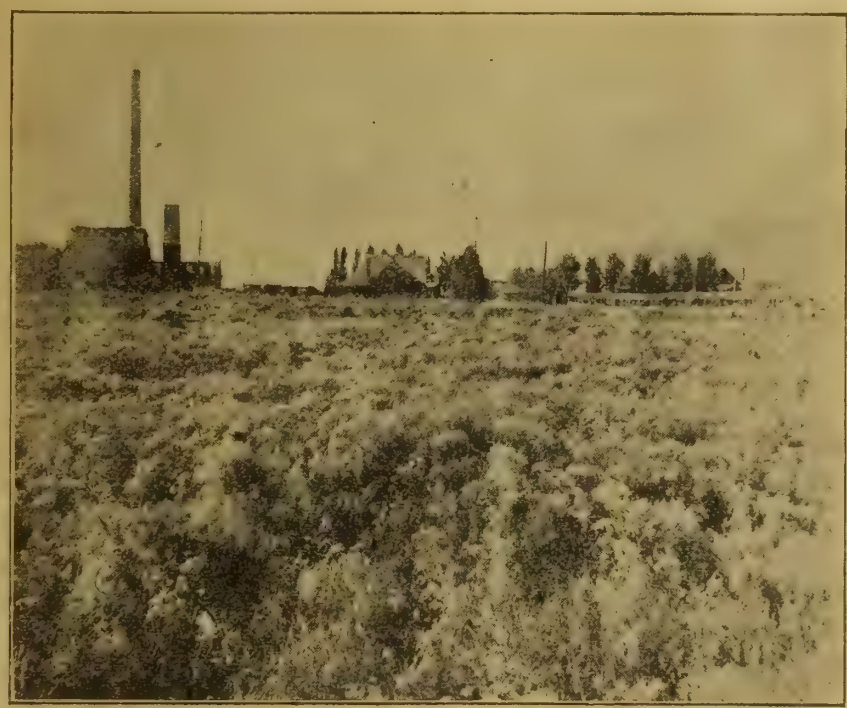
Weeds often shade the young growg crops and deprive the little plant the sunlight so essential to sturdy owth. Weeds take up valuable ace in the field and work many her evils. In fact the only good orthy of mention which I think of the organic matter added to the il when a crop of weeds is plowed nder in preparing a seed bed. But en then we are planting another op of weeds to attack our following ops.

We can easily see what an important emy we have in the weed, so it is up us to fight it with all our forces. In e first place we should watch our ed to see that we do not carry adtional weeds on our farm. We must ow early and deep. The harrow and sk must be used frequently and thoroughly when the small weeds begin to show above ground and before our crops sprout up far. It is then we can kill a dozen weeds at one stroke where we could only kill one weed later in the season.

Rotation and cultivaion is a fine combination of forces in fighting weeds.

When planning tactics for weed fighting in this part of the country

(Continued on page 10)



A FARM OVER-RUN WITH WEEDS

The Simplicity of the Tractor

K. J. T. Ekblaw.

The respectful awe with which so many people gaze on a tractor reminds one of the fe ing he had when he saw the first automobile—a feeling which made one say to himself: "Well, it's a wonderful thing! Must take an awful smart man to run it!" But no one pays any attention to that now, when it has been demonstrated that driving an automobile is more easily learned and as easily done as piloting a team of spirited horses. The complexity of the automobile vanishes when one finds out that it can be started, steered and stopped with a few simple twists of the wrist; the average man soon finds out what makes it start, how it goes, and how it can be stopped, and the natural curiosity he possesse soon makes him familiar with the engine, the clutch, the transmission, the brakes, in fact, with the whole of the operating mechanism. Probably the thing of which the average automobile owner has much difficulty in solving the mysteries is the so-called "one-man top."

Now, it must be the same way with the tractor. The only thing that worries us now, is that the familiarity with the tractor will not grow fast enough. This year thousands of tractors are going to be used where hundreds were used before, not only because we want to use them, but because we have to use them if we are going to raise enough crops to meet the tremendous demand for increased production that has already struck us.

The various schools and colleges are fully alive to the gravity of the situation ,and the number of special tractor courses is greater than ever, while the attendance at these courses, in spite of the shortage of men, is as great or greater than in normal times. The tractor manufacturers themselves are doing a wonderful service in conducting the numerous schools of instruction in every section of the country, where any one contemplating the operation—not necessarily the purchase—of a tractor is given the valuable fundamental training so necessary to successful operation.

In years past it was no unusual thing for a purchaser of a tractor to insist upon a week or ten days of personal instruction from some representative of the manufacturer from whom the machine was obtained, but now such a thing is impossible. The drain upon expert factory operators, as a result of the war's demand for experienced mechanics, has left the manufacturer with a working force all too scant, and he simply does not have a force of demonstrators large enough to meet the requirements of individual purchasers. The dealer will, of course, have to give more time to this kind of work, but upon the farmer himself will fall the greatest share of responsibility in learning to operate his tractor.

The tractor is a wonderful machine, no doubt of that, and it is not surprising that the average layman is impressed with its power and possibilities, and feels that as a consequence it must of necessity be a complex and intricate machine. However, just let him mount to the driver's seat, and give him a few instructions. Remember the delightful feeling you had when you first held the steering wheel of the automobile, when you slipped into low, let in the clutch, and felt the car begin to move? Then, as you went from low to high, and the car gained momentum and sped down the road—someway or other you managed to keep going without difficulty, and in a few minutes you felt as if you had been an expert chauffeur since early youth. Remember it? Well, that's the way with a tractor. The very first furrow turned with a

(Continued on page 15)

Asks for Generous Giving
Governor Makes Appeal

A PROCLAMATION

Nearly a year ago the good people of Utah generously contributed more than half a million dollars to the American Red Cross.

This half million has been expended for the welfare of American soldiers at home and abroad, in the training camp, on the firing line and in the hospital. It has also been used for the relief of dependents of soldiers and sailors. Some of it has been used to relieve the distress of the armies of our allies, of the dependents of those gallant soldiers and of the civilians left destitute by the cruel ravages of war.

The half million contributed by Utah to this worthy cause was a part of one hunded million dollars donated by the loyal and patriotic citizens of the United States. This great fund is now practically exhausted in the administration of the great relief work of the American Red Cross.

The time has come for the replenishing of this great mercy fund. The second hundred million dollars must be raised.

Now, therefore, I, Simon Bamberger, governor of the state of Utah, in conformance with the proclamation of the president of the United States, do hereby proclaim and set aside the

WEEK BEGINNING MAY 20, AS RED CROSS WEEK

during which the people of the state of Utah will be asked to contribute generously to the American Red Cross. It is of the utmost importance that the wonderful work of mercy of the American Red Cross continues without interruption, which necessitates contributions on the part of all good citizens. It is important, too, that the wonderful war work record of Utah be maintained and that in the Red Cross drive, as always, Utah shall remain at the front.

I therefore call upon every man, woman and child to make a material contribution to the Red Cross, a contribution that means a sacrifice. I also call upon all good citizens of Utah to devote a material portion of their time and energy to assisting the committees in charge of the soliciting of funds, to the end not only that our contribution from Utah may be large, but also that our list of contributors may be long. I call upon all good citizens and upon the press and the pulpit to carry this message to every section of the state.

DAIRYING

THE DAIRYMAN'S WAR OBLIGATIONS AND OPPORTUNITY

All individuals and all industries have war problems to solve and war duties to perform. Perplexities that were unknown in the past are faced today by every person and every business—and opportunities for patriotic service are found that were never known before.

The dairy industry is not an exception. Its problems are difficult but its privilege is great—for by solving its problems it will do much to help win the war. * * *

The dairyman's war obligations are to maintain and increase herds, to utilize more effectively milk by-products that have been wasted or only partly used as human food, and to apply to the industry, if possible, improvements in methods of feeding and management whereby production may be economically increased.

Our opportunity lies in the enormously increased demand for milk and all milk products caused by the war, largely for export. This is no time for the far seeing dairy farmer to think of reducing his herd except by getting rid of the unprofitable cows. That he should do in peace or war. But the tremendous slaughter of dairy cattle in Europe because of the lack of meat and no feed to give them is going to afford the man who can look ahead a wonderful opportunity for profit in the future if he can hold onto his herd and increase its efficiency. In such times as these it is always the men of shallow vision who bolt the track. Of course, the scarcity of farm help is a serious factor in the problem but that can be greatly helped by a deeper study into the economy of doing farm work.

But few of us dairy farmers have ever really addressed ourselves in earnest to the question of better management of our labor. The profit of so doing has not been enough to get us down close and hard to the problem. We want to do business just as we have always done it. But now grim necessity has taken charge of the matter and we must study how to save labor and how to make labor more effective. One of the best things we can do is to get rid of spending costly labor on unprofitable cows. There's a big leak right at that point. Another is in the use of labor saving machinery, and the right care of machinery and tools when we get them. But high above all stands the imperative decree: "Hold on to your cows! Don't throw away your future opportunity for a momentary gain." If you want to see what the future protends, look over these figures. The use of milk ranges under these heads: Butter, cheese, milk or drinking, condensed milk, and ice cream. In 1914 we imported $15,000,000 in dairy products and exported $2,966,000. In 1917 we imported $8,000,000 and exported to the amount of $49,000,000.

That tells the story of our coming opportunity. At the close of the war, if we keep our herds unimpaired, we will meet with still larger demand for our dairy products, for there will be, comparatively speaking, no cows in Europe to produce milk products. So let us look at the question on its larger side if we would be wise to our own salvation.—The Northwest Dairyman.

WEED OUT SLACKER COWS

Profits Grow Rapidly as Milk Production Increases.

Income from dairy cows advances at a remarkable rate as milk production increases. This is why poor producers should be weeded from the dairy herd, particularly at this time when more milk is needed when feed is in demand, and when labor is scarce. Tabulations of 5,587 cow testing association records gathered by the United States Department of Agriculture from various parts of the country, covering a period of four years, show that as the average butterfat production increased from 150 to 200 pounds the income over cost of feed advanced from $21 to $34; that is, a gain of 50 pounds, or 33 1-3 per cent, in production gave an increased income of 62 per cent over cost of feed. The next gain of 50 pounds raised the income over cost of feed to $50, the next to $63, the next to $74, the next to $87, the next to $100, and the last to $118.

As the butterfat production increased from 150 pounds to 300 pounds, the income over cost of feed advanced from $20 to $63; in other words, as production doubled income over feed cost advanced three times. When the butterfat production increased from 150 pounds to 450 pounds—that is, trebled—the income over cost of feed advanced from $21 to $100 or almost five times as much.

At this rate of increase, when only cost of feed is considered, one cow that produced 450 pounds of butterfat a year would show as much income over cost of feed as 20 cows whose average production was 100 pounds.

A study of the records, says the Department of Agriculture, showed that the cost of roughage was about the same for all the cows, regardless of production. The cost of grain was considerably higher for the more productive cows than for the low producers, but it was much lower per pound of butterfat. The increased income, however, though it should be credited in part to better feeding, was evidently due more largely to better cows.

TWO KINDS OF COWS

There are two kinds of cows on our farms to-day,
Just two kinds of cows and no more, I say.
Not Jersey, or Guernsey, Ayrshire or Holstein,
For it isn't the breed of cows that I mean.

Not the fat, or the lean, or the large, or the small,
Nor the ones that stand in the up-to-date stall.
No, the two kinds of cows on our farms that I mean
Are the cows that lift and the cows that lean.

The lifter is one that brings large returns.
The leaner costs more for her keep than she earns.
Wherever you go you will find the breeds' masses
Are always divided in just these two classes.

And, strangely enough, you will find, as I've seen,
There are about ten lifters to twenty that lean.
And the dairyman finds by testing and weighing
That these noble lifters do all of the paying.

Hoard's Dairyman.

BULL ASSOCIATION

An organization of far reaching influence in improving the quality of Jersey cows and in making dairying more profitable is the Hyrum Jersey Breeding Association organized last week. This association is one of the first of it's kind in the West, and has for its purpose the upgrading and improving the dairy herds of its members. This is accomplished through the co-operative ownership, use, and exchange of high-class purebred sires.

The Hyrum Jersey Breeding Association organized with four blocks or sections, each block being supplied with a purebred Jersey sire of excellent breeding. The plan calls for an exchange of these sires between the different blocks every year.

Advantages of this association lie in the fact that with an investment in only one animal, each member will in time have the use of every sire in the association without additional expense. Again, these sires will be kept in the community until their true worth as breeders, as shown by the production of their daughters, is known. The association sires that prove their ability to stamp their off spring with superior dairy qualities will thus be saved to the community and used for the entire period of their usefulness.

These associations are proving of great value to communities where they are located, not only as mentioned above, but also in stimulating interest in community dairying in general.

The association has been capitalized at 800 dollars, this just covering the value of the four bulls owned by the association. In order to allow small herds to come into the association on an equitable basis with larger herds shares have been issued at $5.00 per share, members purchasing one share for each cow or heifer of breeding age.

THE VALUE OF GOOD FENCES

No farm can be called well improved or well equipped unless it is well fenced. It is impossible to utilize profitably all the waste growth of fields and odd corners without fences and animals to eat the waste. In many sections of the country there are still thousands of acres sparsely wooded and brush land that would support thousands of domestic animals if this idle land were only fenced. Now it is producing no revenue; with fencing, it would produce much revenue.

Sheep at the present time are the most profitable of all domestic animals, and one main reason why so few farmers keep sheep is that not enough of their land is fenced with woven wire. Sheep do not require luxuriant grass and clover pastures like cattle, hogs and horses, but they can make a good living on sprouts, small brush, weeds and general farm waste, upon which other animals would not thrive. It will almost pay any farmer to fence with woven wire and keep a flock of sheep. The sheep will soon clean up the land and pay for the fencing, while a good woven wire fence that will turn sheep is also good for cattle, horses and hogs.

Many farmers last year and this year are holding back on the purchasing of new woven wire on account of recent advances in price. Fencing prices of course have advanced, as almost all other commodities have advanced. However, woven wire fencing has advanced in price at this writing only about twenty per cent, while the prices of animals and animal products have advanced thirty to fifty per cent. Hence, purchasing high priced fencing for the higher priced animals is not bad business management by any means. In fact it is a good business management, for it is not possible to produce the good animals economically and see them or their products at the present handsome prices without good fencing so that the animals can make a good share of their living on otherwise wasted field forage.

To the farmer who keeps, or would like to keep, a good number of animals, nothing so improves the earning power of land as good fences. Standard feeds are very high priced and will no doubt continue so for some time to come. With the fields well fenced, enough value in standard feeds can often be saved in one year to pay for the fencing. One of our neighbors, for example, last summer had a field in wheat and the wheat crop was damaged; only a part of it was harvested and threshed. But the wheat field was fenced with woven wire, and a drove of pigs and lambs were turned in to clean up the waste. The man estimated that the gain with the pigs alone nearly paid for the fencing. With every field on the farm much good forage can be saved and utilized by animals at some season of the year if the field is adequately fenced to turn large and small animals. During this winter our sheep have made practically all of their living in a hilly brush pasture, while without woven wire fencing they could not have used this pasture, and the cost of feeding them would have been great.

As the silo is a means of nearly doubling the value of the corn crop as a home feed, so is woven wire fencing for utilizing field forage that would otherwise waste, and which is not marketable if it could be saved. Hence, fencing a field is equivalent to increasing its productive capacity, and earning power. If we farmers are ever to be called good business men and become prosperous, we must plan to utilize every bit of waste on the farm, turning that waste into more condensed and more valuable, cash marketable products. Good fencing will aid in this very materially.—H. H.

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Use of Tractor Increases Farm Efficiency

By Prof. A. M. Ten Eyck.

The United States would be placed t a great disadvantage, as a military ower, were there not tractors to andle the increased work on the rm. Already nearly 1,500,000 horses nd mules have been shipped to the ring line in Europe, and the work ie absent animals left unfinished will ave to be completed by the tractor the work is done at all. There are ow 35,000 tractors in use on the farm, nd while the exigencies of larger ood production incident to war press eavily not only upon every acre of nd available for cultivation, but al- upon every manufacturing institu- on ,and particularly upon the plants iven over to the building of farm achinery, the tractor can acquit it- elf creditably and measure up to the reat crisis that now confronts the ation. The number of tractors now the field ought to be doubled to ake the work of providing ample upplies of foodstuffs sure.

The most forceful argument in favor f the tractor is that the cost of ractor horse-power at the drawbar is nly about one-third as much as animal ower. Compared with the tractor he horse or mule is low in power ef- ciency. A horse delivers only from wo to seven per cent of the energy ontained in the feed he eats and he vill pull only about one-tenth his veight at an average speed of one and half to two miles per hour during working day of 10 hours. A horse nay pull as much as one-half his veight, developing four or five horse- ower for a short time.

Tractors Most Efficient.

Under certain conditions this elastic vorking power of a horse gives him ome advantages over the tractor, but he tractor is more efficient in hand- ing work where a steady pull is re- uired. A gas engine will deliver 15 o 18 per cent of the energy in the uel burned, and, therefore, the effici- ncy of the tractor is more than louble that of the horse. The tractor vill develop a pulling power equal to rom one-third to two-fifths of its own veight. The cost of tractor horse- ower is reduced almost 50 per cent vhen the machine is used for belt vork, because the tractor will deliver nearly twice the power at the belt hat it does at the drawbar, for the eason that approximately one-half the nachine's power is required to propel ts own weight. On the other hand, vhen used for belt work animal horse- ower does not increase.

Man Labor Saved.

More manual labor is required where relatively small units of animal power must be used at a slow rate. For a considerable part of the year some of the horses on the farm must remain idle, because on the average farm short active periods of farm work is the rule, and this requires the keep- ing of enough horses to take care of the work during the most pressing season. Very little time is required to take proper care of the tractor, compared with the continuous atten- tion that must be given to animals. Expensive shelter must be provided for horses, they must be fed and led to the water trough regularly, curried, brushed and taken out for exercise when not at work. The team must be harnessed before it can be hitched for work. Usually the efficiency of the horse is at its lowest ebb when the busy season brings its numerous jobs, needing immediate attention, and the very time when the most work is to be done, as, for example, during the time that the crops are being har- vested, or in the early spring.

The working efficiency of the horse not only repreciates after the animal has reached a certain age, but the farmer frequently sustains consider- able loss when his horses are injured or die from disease.

Tractor Always Ready.

At any time in the year or at any time in the day or night, a good farm tractor is ready for work. With rea- sonable attention on the part of the operator, it will start under a full load on a moment's notice. If the rush of work is sufficiently pressing the trac- tor will go up against the toughest job on the farm, and stay up against it for 24 hours in the day. Its effici- ency is not affected in the least by the heat of summer or the cold of winter. The iron horse of the farm requires no grooming and does not have to be fed and watered when not in operation. The fuel and oil neces- sary for running a tractor are not products of the soil in the sense that foodstuffs are. One-fifth of the space needed to stable horses supplying the same power and store an adequate supply of feed for them is all that is required to properly shelter a tractor, together with the fuel and oil neces- sary to run the machine one year.

Does The Work At The Right Time.

Perhaps the most important factor in successful farming is having the work done at exactly the right time. The tractor mobilizes itself practical- ly and is always ready to tackle the job. Therefore, this machine enables the farmer not only to do his work at the proper time, but it will do the work better than horses and at a much less cost. At the present price of feed and labor, suitable land may be plowed with a tractor for one-half the cost per acre which the farmer would have to pay to have the land plowed with animal power. Wherever the tractor can properly be used to take the place of horses, the machine will excel in every respect, and the ex- penes entailed will be considerably less.

A large item in the cost of growing crops is the hired help. By replacing one-half his work horses with a good tractor, it is not too much to affirm that the wideawake farmer can re- duce his operating expenses full 50 per cent. Of course, the machine should be carefully selected with pro- per regard for the number of acres to be cultivated, the soil conditions, and the crops to be grown. A small farm owner may often do enough outside work with his tractor to reimburse him for all his tractor operating ex- penses. The dearth of farm help is now so great that it has become im- perative for the farmer to utilize mechanical power to the fullest pos- sible extent. In this way, he may not only materially reduce his operating expenses, but he insures himself the relief and pleasure which naturally accompanies the knowledge of in- dividual work well done.

THE WEAK LINK

We often find fault with ourselves because the work does not hump along as speedily as it ought to do. In a series of complementary operations, each one dependent on the other, the slowest of them necessarily determines the speed at which the whole job can be accomplished. If while threshing grain the pitcher is slow and cannot keep up with the cutter, then the whole operation is delayed. The fault in the pitcher does not stop with him, but is automatically passed on to and affects the four or five other men as well.

Almost every operation in farming is similar, but the picking out of the limiting factor or the lazy pitcher is not so easy. Every operation or set of operations is interlocking, and if the farmer looks out for the slowest one in the series and speeds it up he will accomplish much towards the easy working and profit earning capacity of his place. Foremost on the list of the precautions to look out for at this time of year, when the spring work comes on with a rush, is the care of horses and spanning them up into effi- cient teams. The horses are the farm- er's fighting front and he must person- ally supervise the feeding of them.

No horse can regularly perform hard work in the spring plowing if it is rushed into the stable by some lazy deck hand half an hour before bell time. It will pay every farmer with hard work to do to feed oats to the horses. No desirable hand will re- main long if he has to drive a team of underfed scrubbers. When hard work is going on how many teams do we see free from sore shoulders which if not attended to at once soon puts the horse out of action and perhaps disor- ganizes the whole work. Whenever there is a sore shoulder there is a cause and it is generally the collar; no amount of attention to the shoulder will avail unless the cause is removed.

Many farmers habitually work short of full horse strength. Rather than buy an extra horse or two they will get along using smaller implements. The more horses one man can work conveniently, the more econocically is the man's labor utilized. This year, with the dearth of agricultural labor, it behooves every farmer to subject each operation to careful scrutiny to see if horses, implements, efficiency, cannot make up for the lack of hands.—Field and Farm.

INCOME FROM 1000 SHEEP

A correspondent asks us 'how much money may reasonably be ex- pected as the gross income of a flock of 1,000 sheep with wool at 50 cents and lambs at $9.00 each in the state of Idaho." There is only one sound basis on which to operate for the man who is in the sheep business to stay. That is, to carry over sufficient ewe lambs each year so that the entire flock will be replaced at the end of five years. By this method the bankruptcy item of depreciation is escaped. The average useful breed- ing age of a crossbred ewe is five years. Starting with two-year-old ewes, at seven years they are done from a range standpoint. Therefore, 20 per cent of the flock must always be yearling ewes. On this basis a band of 1,000 sheep should consist of 25 rams, 200 yearling ewes and 775 breeding ewes. The annual loss of sheep from natural causes is 6 per cent, and the loss on 775 breeding ewes would be 46, so the breeding flock must be further reduced to 729 head. Thus there remains that many ewes that may lamb each year. As- sume, for instance, that an 85 per cent lamb crop is saved, though that is above the average, we have a re- turn of 619 lambs. If 200 of them are retained to add to the flock, that will permit the sale of 200 ewes seven years old, minus the 60 that have died on the 6 per cent loss basis. This would leave 140 ewes and 419 lambs to be disposed of. The lambs at $9 per head would return $3,771. One hundred forty old ewes at $8 would return $1,120. Thus the gross re- turns from mutton would be $4,891.

Now as to the wool. If the sheep shear eight pounds at 50 cents, the in- come is $4 per sheep. The number of sheep to be shorn would be 1,000 head minus the 6 per cent loss, or 940 head. At $4 each, the return from wool would be $3,760. To this should be added the return from pelts. The 60 dead sheep would return say 30 pelts, as some are not skinned, and those that die after shearing are not worth skinning. On a basis of 50- cent wool the pelts would be worth $3 each, or $90. As the pelt value is due to the wool on it, this must be added to the receipts from wool, mak- ing the total income from that source $3,850. Thus the gross income from a flock of 1,000 sheep on a basis of 50-cent wool and $9-lambs would be $8,741. Therefore, 44 per cent of the income is derived from wool and 56 per cent from mutton. The average income per sheep would be $8.74.

We agree that most sheepmen do not operate on this basis. As a rule, they purchase a flock of young ewes, run them as long as they will breed, and then dispose of all the old ewes and go out and buy another flock and start over. When they go out to buy they find they did not get within 70 per cent enough out of their old ewes to replace them with young ones. As a consequence, they often have to borrow 70 per cent of the money need- ed to make the purchase, while if operating on a basis of carrying over 20 per cent of their ewe lambs each year, they always have a flock of the same age as they started with, and in the long run are ahead.—National Wool Grower.

When the calf is two weeks old, grain and bright clean hay should be offered; the quantity fed should be increased as the calf's appetite de- mands.

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When will we learn one of the greatest lessons in farming ,to have enough livestock on the farm to eat up all the feed stuff we produce. Market your crops on four legs rather than four wheels.

There is only one time to stop fighting the rats and mice and that is when they are all dead. Every rat will cost you five dollars or more to feed him. We have no food to waste, so kill the rats.

Keep a record of all your farm business this year. You will have to report to the government and you ought to know the cost of running your farm.

How about that silo, are you going to build one this year? If you plan to have one, prepare to plant your corn now, you can build the silo after a while, some time before the harvest season, when you are not rushed. Corn is easily grown and makes a splendid ration with alfalfa hay.

The quickest and most economical way to increase the quality of our live stock (unless we buy pure bred to start with) is to buy pure bred bulls. It is only a matter of a few years until we will have good grade stock if we use pure bred bulls. If we don't swat or do away with the grade bulls we can not expect any improvement in our live stock. Let us boost the movement for pure bred sires.

To the dairyman a pair of scales are just as essential as a saw to is to a carpenter. Without the scales it is impossible to tell anything about the profits or losses on each cow, and many a dairyman's lack of success is based entirely on the fact that he has more cows in his herd which are not paying for their food than cows which are really netting a profit. Get a pair of scales and keep a record. The results will astonish you.

WATER SUPPLY FOR BARNYARDS

One of the commendable things to be found in any well arranged barnyard is a good supply of water for all the livestock. It should be so arranged and piped into corrals that all animals have access to it. The cattle, sheep, hogs, or chickens should all have a chance to get plenty of water during this hot weather.

Plan so that the water will run, and not stand in troughs or corrals. You know how a good drink of fresh cool water pleases you on a hot day—well, give the cattle such a privilege.

DON'T FORGET YOUR SILO

In every case, a sufficient acreage to provide crops to fill the silo should be provided by beef-cattle and dairy farmers. This will assure that the silo investment will yield its proper annual return and prevent losses coming from giving the cattle more expensive feeds. The cheapness with which cattle can be fitted for market or carried through the winter with silage or milk produced insures that well-filled silos will be a paying investment.

It is a good farm practice to put more acreage to silage crops than it is estimated under ordinary conditions will be necessary to fill the silo.

CARE OF THINGS

Some people have a way of making their machinery and implements last longer than others, and in nearly every case it is because they take care of them. It is just as easy to take care of them as not. When you have finished using a tool or implement it should be put away—taken care of. Have a place for every thing and see that they are kept in their place. Look them over and if their is something that needs repairing, no matter how small, attend to it. Oil the machinery, to help keep it in good order. A little paint will help the lasting qualities of nearly any machine. Above all protect your implements from the sun, rain and winter storms. It is the proper care that you give your machinery and tools that makes them last, extend their service for a much longer time.

TAKE CARE OF WASTE WATER

Warmer weather will soon melt the snow and bring down an increased supply of water. Are the ditches prepared to take care of it. If ditches are not cleaned out and ready to take care of this water there is sure to be some damage done. In many of our towns there are ordinances that compell people to care for waste water.

Crops and streets are sure to be damaged unless the large ditches and laterals are able to carry the rush of water that comes with the first warm weather.

When the water is first turned into a ditch some one should follow the steam and remove leaves and trash the water will gather. Hundreds of dollars would be saved annually if a little more care and attention was given to waste water and to the ditches when the rush of water comes in the spring.

AIMLESSNESS

The trouble with a great many men, in all walks of life, is aimlessness. They have no definite aim, no standard, toward which they are striving. The merchant has not pictured in his mind a finer, larger, more progressive store—toward which he is always working.

The manufacturer puts out the same old machine year after year as though improvements were unnecessary.

The farmer does not have in view a definite plan for farm betterment including clean fields. A No. 1 fences, good buildings, etc.—in short an ideal, practical farm.

The minute any one makes up his mind fully to attain to some definite improvement, some definite advance, that minute progress has begun.

We must think these better things, settle them in our minds and then strive toward them. We have an aim in view. That once attained we will, of course, have another and thus have entered upon a career of systematic progress. This is life. To stand still is to die.

There is no end to progression. What is considered alright today, is behind the times tomorrow you must think, read, plan and act if you are one of the leaders.

FIGHT THE WEEDS EARLY

The loss to farmers due to weeds runs in the hundreds of millions of dollars each year in this country. The time to go after the weeds and destroy them is while they are young. They can be killed much easier while tender and small.

Every weed permitted to go to seed can do a great deal of damage, for the seeds are easily scattered. Every weed seems to produce seeds in abundance and when the soils is filled with these seeds new crops come on for several years as they do not all germinate the first season.

Go after the weeds just as soon as they appear above the ground. Cultivate your ground and kill the weeds at the same time. If you allow the weeds to get the start of you it is so much harder to kill them. Go after them early and do not be content until you have them under control.

Every acre should be made to produce a maximum crop and they can not do it if you allow weeds to grow. Right now is the time to fight all kinds of weeds.

HELP THE RED CROSS

Again we are asked to give and for a worthy cause. Beginning May 20th a nation-wide drive for $100,000,000 to be used in continuing the relief work in Europe by the American Red Cross War Council. The great relief work done by the Red Cross is known to every one in the state now. What they have done for Belgium and France is a credit to any organization. They have helped the farmers of these countries by supplying them with implements and secured livestock to take the place of those killed by the Germans. They helped the farmers to restore a portion at least of their farming industry. For this kind of work and the many others that the Red Cross is doing we are asked to contribute.

Already many of our boys over in France are writing home and telling of the great work of the Red Cross. Our boys accept of the service of the Red Cross feeling that it comes from their folks at home and not with the feeling that it is charity but knowing that it is furnished by their own people.

Who would not give to help care for the wounded, of course our government is doing its share, but there is a service that the Red Cross gives that can only come from such an organization. We can afford to give, we should share of our money, to help such a worthy organization.

HOW WE CAN ALL HELP

There are so many ways to help in this great war, that every one can find something to do. Every American feels like he should join the army and go to the front to defend our country against the Germans and too many feel they are not doing their part by remaining at home. To feel thus, shows a fine spirit of patriotism.

In this great war everyone can find way to serve. For every man at the front must be fed, must be supplied with amunition and other supplies. Those remaining at home must produce and manufacture all things necessary to carry on the war and are not counted less patriotic nor less useful to the nation than those who join the service and train for fighting in France.

The social and business fabric of the country must be kept intact, there must be those who provide the things with which the soldiers are fed and clothed and make a place for them when they return. There must be some one to "keep the home fires burning.

The farmer has been told time and again that when he operates his farm efficiently, thus increasing his production of foodstuffs, he is doing as much to defeat the enemies of democracy as are the khaki-clad men "over there," for without food they could not continue the fight. And so he is. No nation can carry on a war with soldiers alone. The great army of workers that till the fields, that fill the marts of trade and commerce, are none the less useful. So if it is not our lot to be called to the ranks as warriors, we can help nevertheless, and that right where we are.

Utah's Experimenters In Agriculture

WILLIAM WILLIAMS HENDERSON.

W. W. Henderson, State entomologist and entomologist for the Utah Experiment Station is a man who has had valuable training. Wide practical experience coupled with equally wide study has given a great breadth of vision. Like most men Professor Henderson acquired his training by sheer effort. In addition, however, fortune has favored him by splendid opportunities to secure first-hand information. Utah has capitalized this native ability and broad experience in her station entomologist.

In 1879 William Henderson was born in Cache Valley where he spent his boyhood. While yet a youth, his father took a large general farm in Idaho. Here the young man grew into a good farmer. He studied at the Brigham Young College under such men as Supt. E. G. Gowans, Mosiah Hall, W. J. Kerr, George Thomas, and other inspirational and practical educators. When he completed his high school course in 1900 he was chosen class valedictorian. Three years later, when he "took" his B. S. degree from the same school, he was appointed instructor in biology at the B. Y. C.

After teaching a year Mr. Henderson studied at Chicago, mostly in the Hull Biological Laboratories, famous the world over for technique. Leaving Chicago, he studied insect classification at Cornell University. He was so successful here that the Bureau of Entomology of the U. S. Department of Agriculture sought him. This offer was later repeated three times, but he chose to return to Utah when in 1905 he was awarded his Master's degree. In 1910 he accepted the principalship of Weber Stake Academy, in which position he remained for four years. Upon his father's death in 1914, he left school work to take charge of the farm in Idaho. In 1917 he was appointed Professor of Entomology and Zoology at the Utah Agricultural College and Entomologist for the Experiment Station.

In March of that year he went to Berkeley to study cytology, embryology, and entomological practices. He made extended visits to Leland Standford University and to Pomona college where he studied their methods in insect work. During the vacation he was honored with an appointment to a commission which made an insect survey of California. This "break of luck" afforded an unusual opportunity for field work in all parts of that greatly diversified state. During the survey, Professor Henderson by energetic application was able to add much to his already large collection of insects. In August he reported to Logan ready and anxious to begin work.

Utah's field in entomology is by no means small. It is divided naturally into three phases: (1) survey work, to find out just what injury is being done and by what insects; (2) investigational work, to find out control methods for these insects; and (3) inspection work, to make sure that regulations regarding the importation of nursery and other stock into the State and regarding insect control are enforced. The problem is not easy. It is so hung with various phases of life history, feeding habits, technique of classification, and efficiency of insecticides or of cultural methods, that it is intricate. Just now Professor Henderson is devoting himself to three of these problems: namely grasshoppers, alfalfa seed insects, and rodent pests. Grasshoppers do considerable injury in the State at intervals. This can be largely avoided by the application of inexpensive cultural methods. Much alfalfa seed is lost every year due to injury by thrips or chalcis fly. Let us hope that some control method is soon found. Gophers, ground squirrels, field mice, and jack rabbits eat crops from enormous areas each year. Knowledge of their control is paramount in some sections of Utah. In addition to this experimental work, Professor Henderson is soon to attack other problems. He is already in touch with crop inspectors and county agents in respect to survey, control, and inspection work.

Important as this work is, it is only the beginning. Alfalfa insects other than seed pests are to be taken up next. Pests of other farm crops, fruit crops, and garden crops are to be studied as rapidly as equipment and workmen permit. That much is to be hoped for is unquestionable; in order to believe that much will be accomplished, a person needs only to know Professor Henderson and his departmental staff.

Professor Henderson has written considerable in various magazines and journals of the country. He belongs to various educational and scientific associations. Great as is his entomological work, his worth to Utah is greater still, for he has both breadth and depth, imparting to all around him an inspiration to deeper as well as to more profitable lives.

You May Stay at Home —but You Can Help Win the War

YOU—"*The Man with the Plow*"—may look far afield, your thoughts may be of the boys in the trenches, you may even feel a strange tugging at the elbow, but your task just now is to plow and plant and produce. *Your* fight is in the "supporting line." And from that line must come the strength of the

AMERICAN ✚ RED CROSS

—The great organization of mercy, whose activities know no bound in territory, no limit in service.

The atrocities of our enemies have made war's suffering doubly great, but that suffering is being relieved by the Red Cross. In Belgium, in France, in Serbia, in Armenia—wherever war has spread its misery, the Red Cross is at work; nursing the sick and wounded, feeding and clothing the destitute, rebuilding devasted lands—even preparing crippled soldiers for new lives of greatest usefulness and independence. And for this great work your money is needed.

Your Red Cross is an all American, largely volunteer, organization, authorized by Congress, headed by President Wilson, audited by the War Department, enthusiastically approved by your Army, your Navy, and your Allies.

The work covers both military and civilian relief in every war-torn Allied country and full reports of all expenditures are continually being published, or are available through the Chapters.

Every cent of every dollar received for the Red Cross War Fund is spent for war relief. All administration costs and relief work for other than war purposes (such as the Halifax and Guatemala disasters) are taken care of out of membership dues, and the interest which accrues from the banking of the War Fund has made actually available for war relief at least one dollar and two cents for every dollar contributed.

Utah's Quota for the Red Cross Is $500,000

Week Beginning May 20th Is Red Cross Week

The Red Cross work is now known to every man, woman and child of the state. Every one must help. We must again demonstrate. our patriotism, loyalty and generosity

This space contributed for the Winning of the War by THE PUBLISHER OF THE UTAH FARMER

HOME

COTTAGE CHEESE

Cuts meat bills in half.

Has the same food value as meat.

Saves meat for our soldiers and the Allies.

Puts to good use billions of pounds of skimmilk and buttermilk now largely wasted.

Is a really nourishing food when eaten as a substantial dish as well as a salad or relish.

It is most appetizing and has always been a low-priced food.

MILK IS IN SEASON

The first law of conservation is—**Use Home Supplies in Season.** Milk is in season, milk is both meat and drink, milk furnishes easy energy to the system, milk has a hundred uses—it may be served as a beverage, a soup, the foundation of the main dish, or turned into a salad in the form of cream cheese, or converted into a dessert. The housekeeper who has an abundance of milk and eggs is rich in resources.

Where skim milk is plentiful use it in making graham or bran breads, it gives a soft texture to any bread that contains branny material.

Cooking rice, mush or oatmeal with milk not only adds to the food value but improves the dish.

This is the season for cream soups—cream of onion, potato, bean, oyster plant, pea, celery, tomato, corn, spinach, asparagus and a dozen more. In these soups you can use canned vegetables and vegetables not so good for use in other ways, such as coarse celery or potatoes not good enough for baking. Serve these nourishing soups with a light meal.

Make the best use now of dishes made with white sauce. This is the basis of milk gravies, cream soups, croquettes, souffles, scalloped dishes and certain desserts such as corntarch or tapioca pudding. Substitute cornstarch, rice or corn flour for wheat flour in making cream sauce. Cook fat and cornstarch thoroughly before adding the milk. A brown sauce may be made by browning the fat and the cornstarch before adding the liquid.

For the main dish at dinner or supper at this season combine milk and eggs or milk and cheese and eggs. Use eggs and milk in making cornbread and wheatless muffins and in desserts. Serve no meat, or less meat when such combinations are made.

PIE ANY MAN WILL LIKE

It's Different, Too; Make It With Cottage Cheese.

A good pie will make any man happy. Try this new cottage cheese pie, and make the extra crust into tart cups for luncheon today, advises the United States Department of Agriculture home-demonstration worker now in.

Conservation Crust.
(for two pies)

¾ cup corn meal, corn flour or other substitue, ¾ cup wheat flour, 1 teaspoon salt, ¾ teaspoon baking powder, 3 tablespoons shortening, cold water to mix (about ½ cup).

Sift together the dry ingredients; cut in the shortening, blending it thoroughly with the dry materials. Mix with very cold water to a rather stiff dough. Roll as thin as can be handled. Line two pie tins and use the trimmings to crossbar the tops if desired. This crust may be partly baked before filling the pie, if the nature of the filling makes it desirable.

Cottage Cheese Pie.

1 cup cottage cheese, 2-3 cup sugar, 2-3 cup milk, 2 eggs yolks, beaten, 1 tablespoon melted fat, salt, ¼ teaspoon vanilla.

Mix the ingredients in the order given. Bake the pie in one crust. Cool it slightly and cover it with meringue made by adding 2 tablespoons of sugar and ½ teaspoon vanilla to the beaten whites of 2 eggs and brown it in a slow oven.

Cottage Cheese Tart.

1 1-3 cups of cottage cheese, whites of 2 eggs beaten stiff, 1-3 cup of heavy cream, whipped, 3 tablespoons of sugar, 2 teaspons of lemon juice, few gratings of lemon rind, 2 to 4 tablespoons of milk.

Soften the cheese with the milk. If the cheese is very acid, neutralize part of the acidity with a good pinch of soda dissolved in the milk. Add part of the whipped cream. Add the flavoring, which should be very delicate. Fold in the beaten whites. Heap lightly into ready cooked delicately browned pastry cases, made by baking pie crust in muffin tins on the bottom of inverted pie tins. Garnish the top of the tart with the rest of the whipped cream, and with fresh or candied fruit if desired. This makes two small one-crust pies or tarts.

Variations:

Cinnamon may be substituted for lemon in the above recipe. Fresh, dried or canned fruits may be folded into the filling just before serving, or the top may be garnished with jelly or marmalade or with fresh fruit lightly dusted with powdered sugar.

HOT MILK DRINKS

Hot milk is the most restful of drinks when one is tired and a sleep-inviting drink before going to bed. Hot milk is an agreeable change to offer children and a real addition to the supper meal. Why not hot milk between meals instead of the customary piece of bread? Bring the milk to a simmer but don't allow it to boil.

Cocoa—It is truism that children should have milk, yet some dislike it. Cocoa, the universal favorite, is a solution. Cocoa and bread is a good supper. For children less cocoa can be used than the recipe calls for, they like it just as well.

1 teaspoon cocoa, 1 teaspoon sugar, ½ cup water and ½ cup milk or 1 cup milk.

Mix sugar and cocoa and stir in enough boiling water to make a paste. Add one-half cup boiling water, cook 15 minutes. Add milk, heat and serve. If all milk is used, boil the cocoa and sugar with just enough water to make a thin paste. Then add the milk.

Egg Broth—This hot drink is a meal in itself. It is especially useful in the diet of babies over a year old and for invalids.

1 egg, ½ teaspoon sugar, 1 teaspoon butter, 1 pint hot milk, ½ teaspoon salt.

Beat egg and sugar together; add hot milk and butter and beat thoroughly. Add salt and serve at once.

UNUSUAL PIES UNUSUALLY GOOD

War long ago uncovered the sacred American pie, now the bottom crust as known to our mothers has disappeared, and the latest offering of "Yankee ingenuity" is rice pie crust. Rice has a natural affinty for the things that usually constitute pie fillings, and this new camouflage from the first camoufleur—woman—is good for the duration of the war.

Rice Pie Crust.

Line a greased pie pan with cold boiled rice, bringing the rice well over the edge of the pan and shaping it with a spoon dipped in milk. Bake the crust in a moderate oven until it is slightly brown. Use the crust like any pastry for a one-crust pie.

Sour Milk Pie.

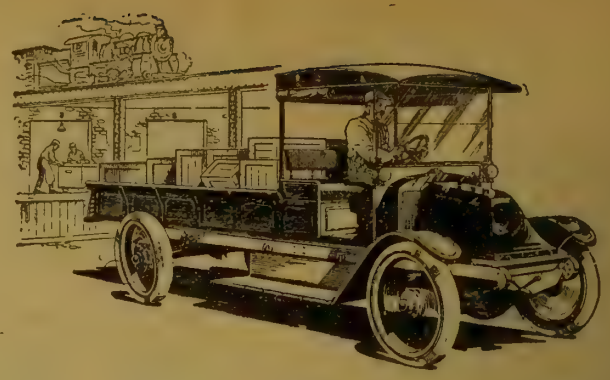
1 cup buttermilk or thick clabbered milk, 2 tablespoons cornstarch, mixed with 4 tablespoons cold water, ¾ cup maple syrup, 2 egg yolks, beaten, 1 lemon, juice and grated rind, 1 tablespoon melted butter.

Heat the milk in a double boiler. When it is warm, add the cornstarch mixed with cold water. Cook the mixture until it is thick, and add the other ingredients. Cook the mixture until it is clear. Turn it into a baked crust made with rice, cover it with meringue, and bake it in a slow oven for 25 minutes.

Meringue.

Whites of 2 eggs, 4 tablespoons maple syrup, ¼ teaspoon vanilla.

Beat the egg whites until they are



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The International motor truck keeps your customers satisfied.

There is a limit to the amount of work horses can do. That limit changes with the seasons, with the weather, and with the conditions of the streets and roads. Horse deliveries and horse hauling mean disappointed customers at times, or customers satisfied at ruinous expense.

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Its service is not affected by seasons or weather and very little by street and road conditions. You can make a schedule and keep it throughout the year when you use an **International motor truck.** What is that worth to you? Write us and we will tell you.

Four Models

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Special bodies for any business.

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PROVO IMPLEMENT & MOTOR COMPANY, PROVO, UTAH.
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230 SOUTH, 6TH WEST, SALT LAKE CITY, UTAH.

Dry Farm Seed Corn

Mr. Strong of Box Elder County, Utah, experimented for 15 years with dryland flint corn, not only did Mr. Strong increase the yield over 100 per cent but he produced a cob only one-half as large as the old type White Flint. Mr. Strong developed a dryland corn of wonderful merit, a heavy yielder and remarkably early for DRY LAND cultivation, you will not be disappointed if you plant a good acreage of Strong's Dryland White Flint.

Order early as our Supply is limited.

Vogeler Seed Co.

SALT LAKE

stiff, add the syrup gradually, and then the vanilla.

Cottage Cheese Pie.

1 cup cottage cheese, ½ cup maple syrup, 2-3 cup milk, yolk of 2 eggs, beaten, 2 tablespoons melted butter, salt, ½ teaspoon vanilla.

Mix the ingredients in the order given. Bake the pie in one crust made of rice. Cool it slightly, cover it with meringue, and brown it in a slow oven.

Lemon Cheese Pie.

1 cup cottage cheese, ½ cup honey or ¾ cup corn syrup, yolk of 1 egg, beaten 2-3 cup milk, 2 tablespoons butter, 2 tablespoons cornstarch, juice and grated rind of 1 lemon.

Heat the milk, add the sweetening and the cornstarch, and cook the mixture until it is thick, stirring it constantly. Then add the egg, and cook the mixture until the egg thickens. Add the cheese, the butter, the juice and the rind of the lemon. Pour the mixture into a well-baked crust made with rice. Cover it with meringue, and crown it in a slow oven.

PAINTED FURNITURE

The vogue of painted furniture is not only undiminished, but is every day gaining fresh converts, as it is so wonderfully well adapted to both cottage and mansion. For that and many other reasons it is destined to become a perpetual fashion. It appeals to the love of color that is born in everyone, and which is never quite outgrown.

Its chief attractions lie in its adaptability to all classes of surroundings and settings and the possibilities of color harmonies.

Some of the most elaborate and exclusive hotels have adopted painted furniture in their scheme of decoration, as its beauty and sanitary qualities have commended it for this use. The Hotel Traymore, one of the show places of Atlantic City, has had all of its solid mahogany bedroom furniture decorated in this manner. Those who have seen it can vouch for the distinction lent to every interior where it is used.

In the shops are shown a variety of painted furniture for the home suitable for almost every purpose. They vary from gorgeous creation in lacquer or enamel with hand-painted decorations to white, gray, and cream colored pieces in simple designs. Some of the most dainty sets are entirely uncramented. Others, particularly the bedroom pieces, have decorations of rosebuds or other flowers that can be duplicated in the various hangings and draperies. Most of the painted furniture now shown in the stores are period reproductions, or, at least, adaptations of period pieces.

The daintily painted breakfast room suites find a most agreeable use in producing the light, cheery effects so much desired in that part of the home. The drop-leaf table, with china closet, chairs, and perhaps a wheel tray, present possibilities for producing the desired morning atmosphere that can be produced in no other way.

The possibilities of the attainment of desires in this respect are several. Many attractive finished designs have been developed by the manufacturers. These vary all the way from soft neutral tints, without further decoration, to the most elaborate trimmings on more pronounced colors. Another possibility lies in purchasing furniture of the sort needed, but having only a primer coat and having it finished in keeping with the desired scheme of decoration.

The adaptability of old family furniture to this type of treatment is ideal and many heavy pieces can by proper painting be made again most acceptable in the house furnishings. Often there is a lot of sentiment attached to these old pieces. It will seem like old times to have them back again. Like good friends, they improve with age.—DuPont Magazine.

Kill All Flies! They Spread Disease

Placed anywhere, Daisy Fly Killer attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over, will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer

Sold by dealers, or 6 sent by express, prepaid, $1.00.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

NO TIME FOR PROFITEERING

President William M. Jardine.

Winning the war and making money are ideas diametrically opposed. In the huge war preparations some will unavoidably make money but it will be made out of the blood of their fellow men.

Our business now must be to win this fight and we must relegate the background personal ambitions and desires. We ought to measure our actions in terms of what we are doing towards winning the war.

We must come to this. The hope of the world lies in us. We are the only nation left which can hope to defeat the German military machine.

We must sense our own personal responsibilities. We are eating too much white bread, wearing too many fine clothes, driving too luxurious automobiles. We must come to the point where we are willing to share the suffering and sacrificing of our Allies in every respect.

We all want to see the fight won, but we must come to the point where we realize that to win it will require the last full measure of devotion from each and every one of us. We must learn to do as they have been compelled to do in England and France if we are to avoid the terrible fate that has overtaken those countries, and if the hope which the world places in us is not to be placed in vain.

ALL CAN TELL HOW TO DO IT

Our farmers are certainly a class of blessed people these days. Not only are they delegated to raise all the foodstuffs for the United States and allies, or as much of it as is possible by a 100 per cent efficiency method, but they are the recipients of more advice than any other class of people on earth. One department of the food administration comes along and urges the farmer to produce every pound of sugar beets possible. Then along comes the wheat man and advises Mr. Farmer to raise wheat on every foot of available ground on the farm. Good advice, indeed, but it does not end here. The vegetable man advises vegetables and the fruit enthusiast advises fruit. Then comes the substitute man with a plan to eclipse them all and advises the farmer to raise substitutes and save the wheat. Now if the farmer had his land in layers and could take all the advice offered he might be all right, but he can't.

The latest advice to the farmer is for the substitute. One writer urges the production of large quantities of white flint corn for Utah and claims that 9,500 acres of this corn will produce the substitutes for 25 per cent of our wheat production. It is argued that an acre of white flint corn will produce 40 bushels of corn to the acre. However, if we place the average yield of wheat at 28 bushels per acre we will get approximately the same amount of foodstuffs per acre, so that after all it is merely a case of the farmer's choice. The only real good point in this advice is the cultivation of small plots that otherwise might go to waste.

After going over the whole list of separate "advices" we believe the wisest thing for the farmer to do is to study the food problem for himself and then hold counsel with himself and produce that which he can excel in. The general result, we are prone to believe, will be better in very particular.

To our way of thinking the farmer who succeeds best will be the man who studies out his own problems and accepts advice only as it fits into his individual case. Our "desk" farmers have increased so rapidly of late it is very hard to even follow the trend of their arguments and woe will follow in the footsteps of the farmer who tries to put the greater amount of their advice into practice.—Provo Post.

Spend a Profitable Vacation

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Exceptional opportunities are offered in HOME ECONOMICS, Professor Alice Ravenhill an international authority on nutrition and child study delivers a course of lectures on the Physical Development in childhood and supervises the work in the Practice House, which will be open to a limited number of advanced students.

TRAINING COURSES in music for supervisors of music.

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SPECIAL WORK IN POULTRY MANAGEMENT to help meet the nation's call for increased poultry production.

OTHER COURSES OF INSTRUCTION—Accounting, Agriculture, Botany, Chemistry, Economics, Education, English, French, Geology, History, Library Science, Mathematics, Nature Study, Physics, Education, Physiology, Psychology, Public Speaking, Physical Sociology, Spanish, Stenography, Typewriting, Wood Carving, Zoology.

Lectures by prominent Eastern lecturers.

Write for further information to

Director of The Summer Quarter
Utah Agricultural College
Logan, Utah

GRATIFY YOUR SWEET TOOTH

You Can Save Sugar Without Sacrifice, Says Expert.

Hortense White, U. A. C.

Most people have a sweet tooth and find sugar conservation a task. How to save sugar without sacrificing our sweet tooth is told here in a series of tried recipes where sugar substitutes are used.

All sugar substitues instead of part sugar may be used in the following recipes decreasing the liquid accordingly. Substitute syrup, molasses, or honey in your old tried recipes, omitting one quarter cup of liquid and conserve sugar. Indications are that we will be 30,000 tons short of sugar for the coming season. It will take every individual effort to have sufficient for our army and allies:

Chocolate Cornstarch Pudding.

2 cups milk, 3 T. cornstarch, ¼ t. salt, 2 T. sugar, 2 T. corn syrup (light), 1 square chocolate, ½ t. vanilla.

Melt chocolate; scald 1½ cups milk; add syrup. Mix dry ingredients; add ½ cup cold milk; add gradually to scalded milk, and then add all liquid to melted chocolate. Cook 20 minutes in a double boiler, stirring until thickened; add vanilla, pour into molds which have been dipped in cold water. Chill.

Cocoanut Pudding.

1 pint milk, 4 T. cornstarch, ½ cup cocoanut, ½ cup corn syrup (light), ½ t. vanilla.

To cornstarch add ¼ cup of milk (cold), to make a smooth mixture. Scald remainder of the milk; add cornstarch mixture and corn syrup, stirring constantly. Add cocoanut and cook in a double boiler for 40 minutes. Add vanilla. Pour into molds which have been dipped in cold water. Chill.

Cocoanut Bread Pudding

2 cups soft bread crumbs, 1-3 cup corn syrup (light), 1 egg, 1 cup cocoanut, 1 cup scalded milk, 1 cup hot water.

Mix the syrup, scalded milk and water together. Pour gradually over the beaten egg. Put the cocoanut and bread crumbs in layers in a buttered baking dish. Pour the liquid over it and bake in a slow oven until firm.

Nut Molasses Bars.

½ cup fat, ½ cup boiling water, ½ cup brown sugar, ½ cup molasses, 1 t. soda, 2-3 cups flour, ½ t. ginger, ⅛ t. cloves, 1 t. salt, ½ cup English walnuts.

Pour boiling water over fat; add sugar and molasses; sift together dry ingredients. Add the liquids. Chill. Cut in strips about 3½ by 1 inch. Sprinkle with cocoanut and walnuts. Bake about 12 minutes in a moderate oven.

Oatmeal Cookies.

1¾ cups flour, 2 cups rolled oats, ½ cup brown sugar, ¾ t. cinnamon, ½ t. ginger, ½ t. cloves, salt, 2½ t. baking powder, ¼ t. nutmeg, ½ cup corn syrup (dark), ½ cup milk, ½ cup vegetable fat, ¾ cup raisins, seeded and cut into halves.

Sift together dry ingredients, add raisins and oatmeal. To the corn syrup and melted fat, add milk and brown sugar. Add all together and stir well. Bake for about 15 minutes in a moderate oven.

Bran Cookies.

1⅞ cups flour, 2 cups bran, ½ cup brown sugar, ½ t. cinnamon, ¼ t. cloves, ¼ t. nutmeg, ½ t. salt, 2½ t. baking powder, ½ cup corn syrup (dark), ½ cup milk, ½ cup fat, ¾ cup raisins seeded and cut into halves.

Sift together dry ingredients. Add bran, raisins, and brown sugar. Mix milk, corn syrup and melted fat. Add liquid gradually. Bake about 14 minutes.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending May 14th—Cattle—receipts, 1,484; market, steady; choice steers, $13.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $9.00@10.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $8.00@9.00.

Hogs—Receipts, 1,024; market, steady; tops, $16.90; bulk of sales, $16.90.

Sheep—Receipts, 5,251; market steady; lambs, $17.00; ewes, $9.00@10.50.

North Salt Lake, May 14.—Cattle—Receipts, none; market steady. Choice steers, $12.00@13.50; good steers, $10.00@12.00; fair steers, $7.75@9.50; choice cows and heavy heifers, $8.75@10.00; fair to good cows and heifers, $7.50@8.75; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $7.50@8.25; bologna bulls, $6.50@7.00; veal calves, $8.00@10.00.

Sheep—Receipts, none; market steady. Good, choice grain-fed lambs, $16.00@17.50; choice yearling wethers, $13.00@15.00; fat wethers, $12.50@14.00; fat ewes, $10.00@12.00.

Hogs—Receipts, none; market steady. Choice smooth fat hogs, 175 to 250 pounds, $16.90.

Omaha, May 14.—Hogs—Receipts, 12,800; market 50c higher. Heavy, $16.85@16.95; mixed, $17.00@17.10; light, $17.05@17.25; pigs, $12.00@16.00; bulk of sales, $17.00@17.10.

Cattle—Receipts, 6400; market strong to 10c higher. Native steers, $10.00@17.60; cows and heifers, $7.75@14.00; western steers, $9.50@14.50; Texas steers, $9.00@12.25; range cows and heifers, $9.00@11.50; canners, $7.50@9.00; stockers and feeders, $6.00@13.00; calves, $10.00@13.00; bulls, stags, etc., $9.00@13.00.

Sheep—Receipts, 7600; market steady to lower. Yearlings, $17.50@18.50; wethers, $15.00@16.75; ewes, $14.00@16.00; lambs, $19.00@20.00.

FIGHTING WEEDS ON THE FARM

(Continued from page 3)

one cannot find a better means of attack, without a special and expensive means, than to grow sugar beets. Their field requirements are just naturally opposed to the growth of weeds and when beets are tended properly one has the weed problem minimized for the present and future. Each year the weed worry should grow less if we practice a rotation having in it beets as the money and cultivated crop. Let us not cry over spilt milk but put our shoulder to the wheel and push.

KEEP THE TRACTOR BUSY.

Owners of tractors which are not kept busy through the spring plowing and seeding season will perform a patriotic neighborly duty by granting use of these outfits to neighbors, who may be short of labor or hands to prepare seed beds. A reasonable rate of hire for the tractor would enable the tractors to make a return during otherwise idle periods, but, most important, will make it possible for others at reasonable expenditure to have a full acreage and add to the Nation's important food supplies. The same plan might be followed, with regard to horses and various farm machines which should not be allowed to remain idle when a food-producing neighbor can keep them busy on victory crop.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RANCH BARGAIN

240 acres good smooth land, 100 acres in cultivation, puts up 170 tons of hay, 9 room house, barn, and other out buildings, creek runs through ranch, plenty willows for stock shelter, decreed water right, 3 miles from County Seat town, also lease paid up for 1918 on 320 acres of school land, ($50) per acre for the 240 acre ranch, 100 cows with calves at ($80) per head, 190 two year old heifers ($75) per head, 30 head yearlings at ($30) per head, all implements and machinery necessary to run ranch included.

FEDERAL LAND COMPANY
Ogden Utah

50 ACRE FARM

I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.

W. C. ALBERTSON
625 Dooly Building
Salt Lake City, Utah.

Windsor Hotel

LOCATED IN THE HEART OF THE CITY

225 So. Main St.

125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.

FREE BUS SERVICE To and From all Depots

All Cars Stop In Front of Our House

A home like place for local people where you will meet friends.

Good Rooms 75c, $1 and up.

The Windsor Hotel Co.
M. A. Scott.

RELIABLE FARM BARGAINS.

Special Attention to Stockmen.

We have a proposition to offer to sheepmen or cattlemen that has never been offered before. We have for sale several million acres of the finest grazing land in the United States, on the railroad, plenty of water, lots of shade and only 12 hours' ride from one of the best markets in the country. We will sell you this ground at a very low cost—from $3.00 to $12.00 per acre—give you ample time to try land before buying, and, if it does not prove satisfactory, you are not required to take land. For further information, call or write. It will be a pleasure for us to explain this proposition to you.

In Cache valley we have one 71-acre farm a quarter of a mile from the railroad station. The property is all under a very high state of cultivation and has been farmed for ten years. Can be had for $125 per acre, 10 per cent down and ten years on the balance. This includes water right and paid up to date. Will exchange for Salt Lake City property.

We have for sale 60 acres of very choice land. This property is located in the best part of the Bear River valley. It now has 40 acres of alfalfa and 20 acres of grain. We can sell this for $160 per acre, on very easy terms.

Three 40-acre tracts lying west of Tremonton that we are offering for sale and $140 per acre, 10 per cent down and ten years on the balance.

We have a number of first-class farms for sale in southern Idaho containing 40, 80 and 160 acres, 10 per cent down and ten years on the balance. Also have several first-class farms to exchange for Salt Lake City property.

FARM AND RANCH DEPARTMENT,
KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street.
Was. 963.
WE WRITE FIRE INSURANCE.
Office Open Until Sunset.

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

HOMESTEADS

For best homesteads in the west write.

G. A. COLE

Monticello Utah

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

SIT DOWN To do Your WASHING

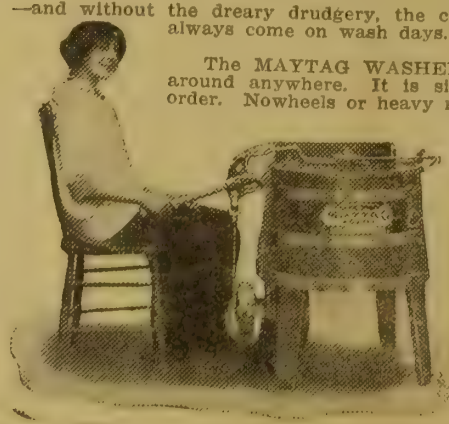
Don't stand up at that back-breaking, heart-breaking toil when

The Maytag Washer

will make every wash day a holiday.

We want you to try the MAYTAG for four wash days free—wash everything you've got—blankets, curtains, everything. Then if you can get along without it—send it back. Isn't that enough? Is there anything more we can do to prove MAYTAG value?

Beautifully clean clothes—spotless—a day's washing done in an hour—and without the dreary drudgery, the crossness and exhaustion that always come on wash days.



The MAYTAG WASHER is light—you can move it around anywhere. It is simple—nothing to get out of order. Nowheels or heavy machinery on top to be lifted when you lift the lid. On the MAYTAG it is all underneath—out of the way.

The MAYTAG washes everything—injures nothing costs little—

Call and let us show you how it works—or better still, let us send you one and try it yourself.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

PUTTING THE BINDER IN ORDER

E. V. Laughlin.

It is a wise farmer who sees to it that the binder is in good order several days before grain cutting time. When the fields are ready for cutting one can seldom summon sufficient patience to overhaul his machine and do all the little things that need to be done if it is to be in the best shape. This brief word of admonition is written as a reminder that the days are soon here when there will be scant time to undertake the repairs that can only be done thoroughly when there seems to be plenty of time ahead.

It saves a great deal of time and worry if those parts of the binder that are about worn out or are on the verge of breaking are fully renewed. Every farmer should go over his machine carefully and recall the experiences of the previous season. Unless the machine is almost brand new it will be recalled that there are certain parts that were beginning to give trouble. Probably it's the neckyoke that pulls loose, or the clips of the single trees that persist in coming off, or some nut that simply will not hold its grip. All of these should be remedied until good as new. There may be quite a lot of blacksmith work that may mean the possible dismantling of the machine. When the fields are ripe for the harvesting it is an exceptional farmer who would have the patience to check his work while these improvements are attended to. The time to attend to them is a week or 10 days in advance when the demands for immediate action are not insistent.

Experience has taught the writer that the following are items to be considered particularly in this initial work:

Are all the nuts and washers in shape so that they will not rattle off when work begins? Are the belts in the best possible state of repair with respect to slats, rivets, buckles, etc? Are there torn places that need mending, or worn spots that will tear in a few hours after the binder gets in motion—inspections that should be made very critically. Are there wheels and other important parts that are so badly worn that good service cannot be expected? What is the condition of the sickle—does it need new sections or do any of them rattle suspiciously? Will the knotter do its work without monopolizing the first day in the field?

There are other items, of course, that will need attention—items known to each particular owner. The main thing is that the machine should be gone over thoroughly before it is time to send it into the field. A stitch in time saves nine applies with a great deal of force to the owner of a binder that has been used for several seasons.

GET THE CODLING MOTH BEFORE IT GETS THE APPLE

Utah Experiment Station Circular Gives Control Method.

A circular which should be of much interest to apple growers has just been issued by the Utah Agricultural Experiment Station. In past years the Experiment Station has done considerable work on the codling moth from which Professor Hagan, the author of this circular, has summarized the essential information for controlling the pest.

The first spray should be applied three to five days after the petals begin to fall, with the sole object of filling each calyx cup with the poison, for it is here that the worm which does the damage enters the apple. This should be followed ten days later by a second syraying. This will complete filling the calyx cups that are not open as early as the first syraying. The spray recommended by Professor Hagan is "arsenate of lead—about three pounds of paste or one and one-half pounds of powder to 50 gallons of water." Since the blossoms usually point outward, the spray should be driven down from the top, in from the side, and up from the bottom.

If the spraying has been done properly an examination somewhat later in the season should not show more than ten per cent wormy apples. If more than ten per cent are found wormy, a second syraying should be applied about the first of August.

The trees should be banded about the first of July, which is about the time that the larvae begin coming down from the tree. The band provides a hiding place for the larvae, under which they crawl and remain. The bands should be removed about every eight days and the worms killed.

A free copy of the circular giving more detailed information on the subject may be obtained from the Utah Experiment Station, Logan, Utah.

ORDER FARM MACHINERY EARLY

Recent reports from the implement dealers to the United States Department of Agriculture show that there is a vital necessity for farmers ordering their agricultural implements very early this year. The factories have plenty of farm machinery, but they hestitate in distributing it to their transfer houses at various points until they have some idea of the amount of business. If the orders for implements are sent in late, there is likely to be congestion of traffic and great delay in seeding and also again in the fall at threshing time when it would be a very serious matter if there was any delay in the delivery of harvesting machinery.

Under normal conditions it takes several weeks, and sometimes months, to obtain farm implements from the factories. The machinery is delayed at terminal and transfer points and also in the handling and assembling at destination.

To alleviate these conditions, which are likely to be aggravated this year, it is well for farmers to inform their dealers at the earliest possible moment what they desire in the line of farm machinery during the 1918 crop season. This will facilitate the movement on the railroads as well as enable the implement dealers to place orders for ample supplies. Not a grain of foodstuffs should be lost this year on account of the imperative need of the Allies and ourselves, and it is a patriotic duty for every citizen to do all he can to encourage the ordering of farm implements as early as possible.

DRAIN WATER-LOGGED LANDS

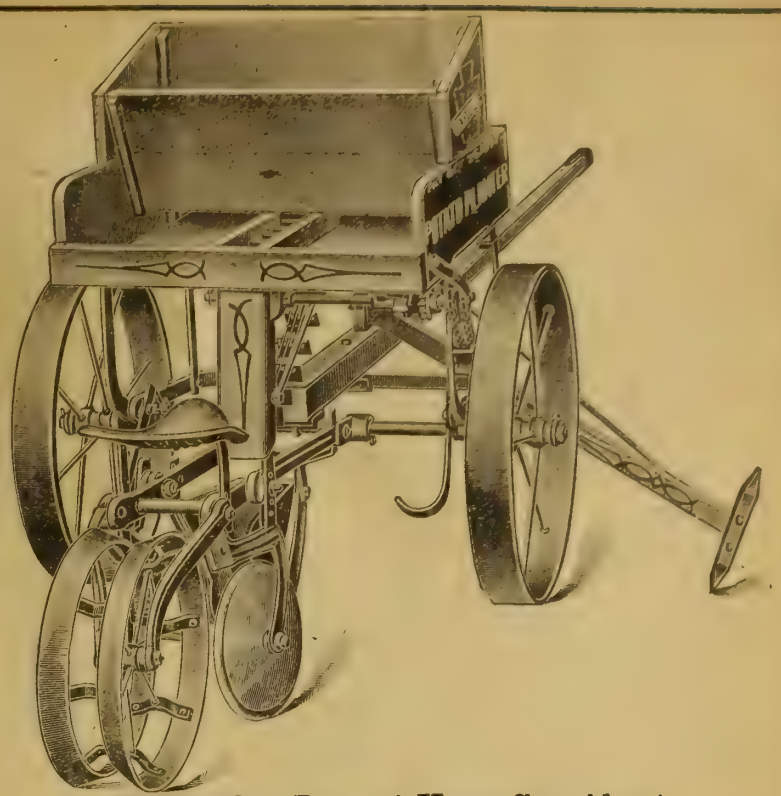
Better Suited to Quick Increase of Crop Areas Than New Projects.

In most of the older irrigated valleys of the West there are large areas of waterlogged and practically useless lands which were formerly highly productive. For a number of reasons these lands are more suited to the quick increase of cropped areas than are new projects, either irrigation or dry farming. Some of these reasons, the drainage specialists of the United States Department of Agriculture state, are:

1. The transportation facilities, both highway and railroad, are provided in the older sections.
2. The lands are largely held by the men who did farm them and would do so again if they were drained.
3. The cost of drainage is usually much smaller than the cost of putting water on new land.
4. There is no danger of the loss of crops by drought, whereas that is an ever-present danger in those areas where the greatest expansion in dry farming is possible.
5. Except in the case of badly alkalied lands, less time will be required for getting the land to the point of maximum productiveness.

Thus it would appear that an impetus should be given to the drainage of irrigated lands at this time when a large increase in our production our production of crops is essential to the successful prosecution of the war.

Every encouragement should be given to this work, especially where large districts are being formed, as the work may be done more economically over large areas.



Read What Present Users Say About

Keystone Potato Planter

Merriam Park, Minn.

Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—I have owned one of your Keystone Potato Planters for five years and must say that the planter saves me from $3 to $5 per acre on seed potatoes. I plant from 40 to 60 acres each year for myself and neigbors.

Yours truly
LOUIS MILLER.
Jerome, Idaho.

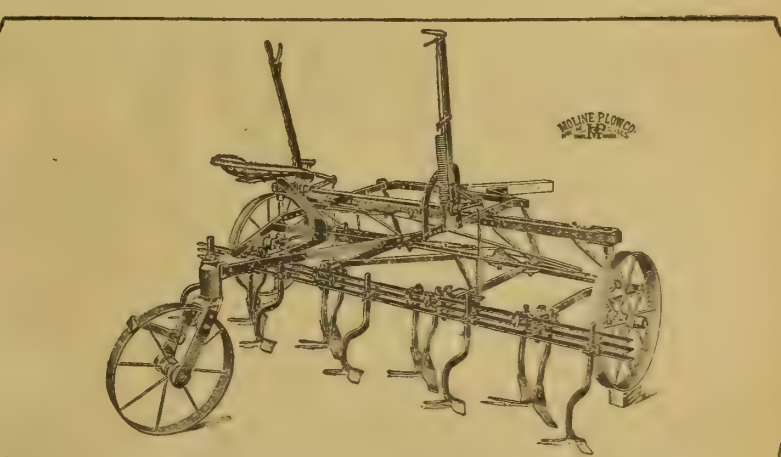
Mr. A. J. Platt, Sterling, Ill.

Dear Sir:—Personally, I think the "KEYSTONE" Potato Planter a decided success, and your representative here should be able to sell a great many of them. The machine is cheaper than other planters and does the work better and they should have a great sale. Its simplicity recommends it and the fact that a perfect stand of potatoes can be secured is a big thing in its favor.

W. S. GUIEFORD.

"NOT 60% ACCURATE BUT 100% CORRECT" is the record of Keystone Potato Planter.

MILLER-CAHOON COMPANY
GENERAL AGENTS
IDAHO FALLS, IDAHO MURRAY, UTAH



For Cultivating Beets or Beans

Use a Moline Beet Cultivator No. 6

WITH a Moline Beet Cultivator No. 6 you cultivate beets or beans two, three or four rows at a time, doing thorough work and covering a great amount of ground with little effort. The cultivator is easily handled, instantly responsive to the driver's control, and provided with a variety of adjustments that make it perfectly adapted for work under any conditions and in any kind of soil.

It is controlled entirely by pushing forward upon foot levers that pivot the wheels and guide the tool bar simultaneously. The tool bar is swung from the main frame so that it is free instantly to move in either direction. The combination of wheel and tool bar control gives the most responsive and flexible control system yet devised, making it possible to cultivate four rows at a time in a thorough manner without injury to the plants.

The ease with which the machine is handled is due in a large measure to its construction, which is almost entirely of steel, giving maximum strength with minimum weight. Draft is light, the connecting bars between the tool bar and the main frame being directly in the line of draft, subjecting the tool bar to maximum pull.

Two levers are used for raising or lowering the tool bar, operating either together or independently. Two levers are provided as at times it is necessary to force one end of tool bar deeper than the other.

Your Moline Dealer will be glad to show you this cultivator. See him or write us for full information.

MOLINE LINE

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

MOLINE PLOW CO. MOLINE, ILLINOIS
MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

LIVE STOCK

FEED AND CARE OF THE BROOD SOW

Howard B. Francis.

Healthy and vigorous spring pigs are the basis of success in converting the corn crop into pork. Every effort possible should be made to have the brood sows in condition to farrow large litters of well developed pigs and to furnish sufficient nourishment to give them a good start in life.

Success depends on good management from the beginning and special attention during critical times.

Use of breeding animals of the proper type will go a long way toward good results.

Selection of Brood Sows.

Make your selection for brood sows carefully, selecting those with good length and depth of body, strong back, plenty of bone, somewhat upstanding, feminine in appearance, smooth of body, and if possible, from sows of known producing qualities; for instance, personally I would prefer the second or third choice gilt from a noted line of brood sows, to the first choice gilt from others.

Exercise good judgment and great care in the selection of your boar, for in one way he is only half of the herd, but if he is a common or mediocre animal he may prove to be practically all of your herd.

Very seldom do you hear of a breeder of reputation disposing of a herd boar unless there are outside conditions that enter into the consideration.

Careless methods cause failures, even though royal blooded stock is selected, in fact, blood lines can mean nothing without good care.

A great amount of care should be given the sow and her litter, in the way of housing and feeding.

The sow should be provided with a well arranged house or farrowing pen, one with plenty of sunlight, with only enough straw to make the sow and her litter comfortable.

Quite often we find large losses in pigs from having too much straw in the pens, as the pigs may get lost in it and become chilled or injured by the sow.

Individual Houses Best.

We prefer the individual house or pen for the sow at farrowing time, as we believe the sow does better when she is away from other sows; however, it is more inconvenient to feed and care for her than in a well arranged hog barn.

If you have ever had the interesting experience of sows farrowing in adjoining pens in a hog house, when perhaps one of them is more or less nervous or has a squealing pig, you will surely appreciate the quiet and seclusion of the individual pen.

Cultivate an interest in the swine and give them more than passing attention.

If the brood sow is fed only on corn she will become lazy, fat and just move around enough to get her feed, and drop back to the sleeping quarters. She may look very nice to the eye, but she may be a failure in producing vigorous, robust pigs, and won't compare with her sister who had to hustle for her living.

A few days before she is due to farrow, she is put in a pen by herself through the night, but in the daytime is let out for exercise.

After she makes her nest, we make it a point to be around day and night. If the weather is cold a jug may be filled with hot water and wraped with sacks.

As soon as the little fellows arrive we dry them, mark them and put them in a basket, where they will soon get close to the warm jug. After all arrive, we put them with the sow, and see that each one gets a good fill.

Then they are returned to the basket for something like an hour, when they are again put to the sow.

This can well be done for the first half day or until the sow is all through and lies quiet. Many a pig can be saved by close attention the first day or two.

As a rule the saw is fed nothing the first day, but given a drink of warm water with a few handfuls of bran added.

Never give cold water to a sow after farrowing.

If the litter nurses well and then sleeps, let them alone; they are doing all right; but if they are uneasy and keep tugging away at the sow be careful. Many times it is advisable to remove the very sharp teeth of the new-born pig, particularly so in cases of large litters or where some of the pigs are stronger than others.

If it is found necessary to do this, do it right away, because a very large per cent of the trouble from teeth will be started inside of a day.

Farrowing Time.

The care given the brood sow during the first week after farrowing may determine whether you win or lose. Don't kill the litter by overfeeding the first week. Well do I remember a litter of nine fine pigs that were literally killed by kindness in overfeeding the sow.

It is impossible to give feed formula that will apply in all cases, feed for results, namely, for the sow to furnish enough milk for the pigs and to regulate her bowels properly.

A really good brood sow is a prolific milker and care must be exercised about farrowing time to avoid the use of feeds which tend greatly to stimulate the flow of milk. Here is where bran is excellent.

After the pigs reach the age of five or six days, the mother's feed should be gradually increased in strength. Gradually substitute middlings for the bran, and after another week substitute milk for water used in moistening it. Continue the corn as before, for when the pigs are three or four weeks old they will be making a heavy demand on their mother; and even with the very best of feed and care it is next to impossible to prevent a good brood sow from suckling down. It is not an uncommon occurrence to have large sows lose as much as 200 pounds in ten weeks suckling a large litter, in spite of the best care and feed that can be given both sow and pigs.

Clover or alfalfa pastures supply the best possible supplementary feed for the brood sow and litter. Exercise for the pigs is just as necessary as for the sow.

Young pigs are inveterate pirates, and the bigger the pig the bigger the thief. After the pigs reach the age of six weeks or more it is sometimes advisable to run two or three litters together. This is not good practice unless a creep is arranged where the little pigs may eat shelled corn and drink skimmilk, or a good slop of middlings, fed sweet, and unmolested by the sow. Usually the most profitable pig is the one that makes the most rapid gains.

"Keep them gaining" is a slogan which nearly every producer in these times could most profitably adopt. A stunted pig will sometimes develop into a good-looking hog, but it is inevitable that during the stunting process he is losing his owner money. A pig that has been kept growing from birth unquestionably will make heavier gains from a given amount of feed than the pig which has been stunted from lack of sufficient food of the proper kind at some period of its existence. And do not overlook the

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

protein requirements of the growing pig.

Weaning Time.

Before weaning and even after weaning, if skimmilk is available the protein requirements are pretty well taken care of, but all of our feeding grains are deficient in this essential, and it must be supplied or you must be rated as an inefficient producer.

Tankage, self-fed, can be profitably supplied to every hog on the farm regardless of age, provided of course, that they are receiving a liberal grain ration. Weaning pigs is usually considered to be a very simple matter and so it is. But here is a plan that should be more generally practiced. It will repay many times its cost in the time and labor required to accomplish it. Every litter is likely to have some pigs which from one cause or another are smaller and less vigorous than the others, and here is your opportunity to even up the litter.

At the age of eight or nine weeks the pigs should be eating well and one half or more of the larger ones should be taken from the sow and removed to a place some distance from her. This will give the smaller pigs a chance to fill up, which they never before enjoyed. Within a week or ten days the weaklings will have in many instances fully overcome their handicap and a uniform litter will be the result. This plan also is beneficial to the sow, and udder troubles, which often occur from the sudden weaning of a large litter will be avoided.

In conclusion: Guard rails should always be provided in a farrowing pen to keep the sow from squeezing the pigs against the wall. Avoid the use of too much bedding, change it frequently. Supply an abundance of good feed in as great a variety as possible, plenty of good clear water, some mineral nutrients, lots of sunshine and kindness. And above all, consider your pig-raising efforts in the light of a dignified, patriotic duty, which not only will pay you satisfactory dividends, but at the same time will go far in aiding to win the war.

MANAGEMENT OF THE BOAR

W. F. Purdue.

Many a man has paid a good price for a boar that suited him in every respect, and then, by improper care, practically destroyed his worth as a breeder. A very serious mistake, though a common one, is to confine him in a close pen where he has very little exercise, while at the same time he is fed upon the richest and most fattening food that the farm affords. Lack of activity and virility quickly follow this sort of treatment. Another very poor plan is to turn the boar with a bunch of hogs, gilts and stock hogs, where he is constantly fighting, fretting and teasing until he becomes shabby, unthrifty and the most ungainly hog on the farm.

A common sense, rational method must be pursued and these extremes avoided, if the best possible results are to be secured. While too close confinement is to be shunned at all times, it is not so bad as to permit the boar to roam with other hogs over the farm. A comfortable pen should be provided for the animal with a fair-sized lot or pasture adjoining, and he should then be fed a variety of nutritious food, which is more than dry corn and thin slop. The majority of farmers are too apt to feed their breeding animals too much corn. The boar should always be in a good thrifty condition, but if he is over fat he will be clumsy and not a sure breeder.

It is a disputed question as to the age at which the boar should begin service. It is a fact, however, that many an animal is ruined by too early use. It is unwise to permit a boar to be with a sow until at least eight months old, and then only in exceptional cases. We cannot expect vigorous progency from immature sires. If the boar has been properly kept moderate service will not injure him at a year old and he will be at his best as a sire from 18 months to five years of age, when he is matured and fully developed and possesses every advantage over and immature pig. Invariably the largest and strongest litters are obtained from old sows bred to aged boars. An aged boar is generally considered a very unpleasant animal to have on the place, especially if he becomes vicious and is inclined to use his tusks, he is worse than a bull or a stallion. None of these animals are intended for pets. A fence that will keep the other hogs on the farm in their proper place will not do for the boar, for if the opportunity ever offers he soon becomes unruly and hard to manage.

The right and proper plan is to keep him in an enclosure right from the start that will afford him no practice in the art of breaking out. It is also a good plan, if conditions will permit, to have his quarters isolated from those of other pigs, especially sows and sow pigs; he will usually be more quiet and gentle, although much depends upon his natural disposition of the animal.

We realize that it is of little use to recommend to all farmers who raise or purchase choice boar pigs that they keep them 18 months or two years before using them, as not very many men are willing to do so. Yet any one who will properly keep his boar for that length of time before putting him to service will find his value as a breeder greatly enhanced by good care.

In a great many localities the farmers keep only a few brood sows and it means quite an expense for each man to keep a boar; in this case it is much better for three or four farmers to club together and keep one boar, or one man may own him and the others can pay a reasonable service fee. Properly managed one boar will usually answer the purpose as well as three or four for that many farmers, and if so, the cost of keep is reduced to the minimum and the temptation to use a scrub or immature pig is removed, thereby insuring an improved class of hogs in that locality.

POTATOES GOOD STOCK FEED IF FED WITH GRAINS

Experiments at Oregon Show Highest Gains From Steamed Potatoes and Barley.

Raw potatoes fed alone will barely maintain weight in hogs. Potatoes should always be fed with some grain in hog feeding, and are much better when cooked or steamed.

Two series of experiments with potatoes show how they compare with grain. The Wisconsin Station fed hogs weighing approximately 260 pounds each on a ration of 4 pounds corn and 11.4 pounds potatoes, making gains of 1½ pounds per day. Hogs fed corn alone required 440 pounds corn for 100 pounds gain. Those fed potatoes required 262 pounds of corn and 786 pounds of potatoes. It took 442 pounds of cooked potatoes to equal 100 pounds corn.

The Oregon Station obtained slightly better results, using steamed potatoes and barley. Hogs getting 2.6 pounds barley and 15.8 pounds steamed potatoes made the same daily gains as hogs getting 7.1 pounds barley. The gain was 1.66 pounds per day. Hogs getting 4 pounds barley and 12 pounds raw potatoes gained 1.44 pounds per day, and those getting 4.2 pounds barley and 13.4 pounds steamed potatoes gained 1.86 pounds per day. This last ration shows the highest gain, and is cheaper than the all barley ration, but is not as cheap as that with the high allowance of potatoes at present prices.

With barley at $3.50 per hundred, raw potatoes at 65c, and steamed potatoes at 75c per hundred, the costs of gains would be as follows:

Ration	Barley	Potatoes	Cost per pound gain
1	2.6	15.8	12.7c
2	4.2	13.4	13.3c
3	7.1		15.0c
4	4.0	12 (raw)	15.1c

Counting the pork at 17.5c, the potatoes in Ration 1 would be worth $1.00 per 100 pounds if barley is $3.50 per cwt.—C. I. Bray, Colorado A. C.

BROOD MARES ARE PROFIT MAKERS OF FARM

A. R. Hunter.

At the present time, with one of the worst wars in the history of the world, all foodstuffs and products of food animals are being regulated by the nations at war.

To a certain extent tractors are furnishing a part of the power to produce foodstuffs on the farm, but the draft horse is the largest factor in the production of farm power.

It is then time for all farmers and breeders to look forward to the conservation of the draft horse, to produce more grain and farm products.

This leads me up to my subject of the brood mare on the farm.

In some sections of the country where there are large areas of land farmed by one man or company it might be more profitable to use geldings or mules. But with the average farmer where there are but a limited number of men employed the brood mare will furnish all the farm power and raise a foal every year. And every farmer should keep a few good mares of good draft type with which to do the farm work. Under-sized, mongrel type animals—neither draft nor driving stock—of course, will not pay to keep. But good, big, sound draft mares do now and always will prove profitable.

Now, it has been my obesrvation that the brood mares that do the regular farm work are the mares that raise the best colts, which grow into the best horses at maturity.

The mare is worked up to within two or three weeks of foaling time and after the colt is 10 days or two weeks old the mare is put back into the harness. The colt being in constant company with the teamster or groom becomes quite gentle and learns to eat from its mother's feed trough early in life, as the mare is fed the colt will get its share. The proper way to care for a colt is never to let the colt follow the mare, but leave it at the barn in a box stall or tie it up; that is, if the mare is being worked near the barn, where she will be in at the noon hour. If she is being worked at a distance from the barn, where she will not be in at the noon hour, put a small halter on the colt, tie him to the trace near the hame and he will soon be broken to lead and you can then tie him to the fence or wagon near the work. The brood mare on the farm where she does her part of the farm work, can be detected in season, and in most cases the mares that do their part of the farm work produce a larger per cent of the colts than do mares that run in the pasture or on the range.

As the harvest season approaches and grain hauling time comes on, the colt is now about 4 or 5 months old and he has his own feed trough, and if fed crushed oats or oats and bran three or four times a day he does not miss his mother much at the noon hour and the mare will do her part in the harvest field or on the wagon delivering grain to the elevator. Later on, when the colt is 5 or 6 months old, you can gradually wean the colt away from its mother.

The colt is now well broken to lead and will not make much fuss when being weaned and the mare will not make much fuss over the colt being taken away from her.

You put the colt raised in this way in the lot with your pasture or range raised colts and you will find that this colt will be larger and more thrifty and will not lose flesh like the pasture or range raised colts.

U. S. NEEDS 20,000,000 MORE HOGS

Farm and Fireside says in the November number:

"One of the important events of the National Swine Show was the meeting called by Herbert Hoover to gain from the representative swine men of the country an idea as to the best methods of increasing the swine production of the country. Gifford Pinchot was sent to Omaha by Mr. Hoover as a representative of the Food Administration Department. There is urgent needs of an increase of 20,000,000 hogs in the United States above the number which the present prospects indicate will be produced, Mr. Pinchot said.

"Similar meetings had been held previously at Kansas City and Waterloo. Resolutions were passed recommending that the Government assure the pork producers a fair price for their hogs. In figuring the cost of production it was recommended that not less than the value of 14 bushels of corn be allowed for determining the cost of 100 pounds of live pork, a ratio of 14 to 1."

Cutter's

Germ Free

Blackleg Filtrate

and

Blackleg Tissue Aggressin

The New, Safe and Efficient Agents for Protecting Calves from Blackleg.

Cutter's Blackleg Filtrate positively protects against Blackleg.

Cutter's Blackleg Aggressin, made directly from animal tissues, **affords even greater protection** and is recommended for Pure Breds.

Neither the Filtrate nor the Aggressin can possibly produce Blackleg in even the most susceptible animals since **both are germ free.**

Both have given 100% protection wherever used.

Prices—
10 dose pkge. Filtrate....$2.00
50 " " " 8.00
100 " " " 15.00
10 dose pkge. Tissue Aggressin 4.00

N. B.—Cutter's Filtrate (a "cultural product" aggressin) is full 5 c.c. to the dose, as we believe that smaller doses, whether concentrated or not, afford less protection.

Write for booklet telling what germ free vaccines are and wherein **"cultural product" Aggressins differ from Cutter's Aggressin** made from animal tissues.

While these new "germ free vaccines" have advantages that should be known to every stockraiser, we see no reason for a quick change to them by stockraisers who have had satisfactory results from the use of

CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

Year in and Year Out they have given better satisfaction than any other vaccine made, and as far as price and convenience of administration are concerned, they have all the advantage.

Prices:
10 dose pkge. Single pills $1.00
50 " " " " 4.00
10 dose pkge. Double Pills 1.50
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Cutter's Pill Injector.... 1.50

Insist on Cutter products. If unobtainable, order direct. We pay shipping charges.

The Cutter Laboratory, Berkeley, Calif.
(U. S. LICENSED)
"The Laboratory That Knows How"

POULTRY

FEEDING YOUNG CHICKS

Hatching the chicks is but the start, no matter how good a start it may be. Intelligent feeding must follow or the little fellows will not live to grow their first wing feathers, regardless of how vigorous they may be when they come from the incubator. Often the incubator or the parent stock has been blamed when the feeding was responsible for all the trouble. Nature has provided a storehouse of food in the yolk of the egg which the young chick keeps intact until it is hatched. This must be absorbed before any other food should be given and it is safe to give it two days to accomplish this before the chick gets anything else to eat, though some water may be supplied earlier. Plenty of sand should be provided for nature has ordained that the little chick shall want to keep busy picking at something. Nature has furnished the power to do the grinding and the place for the grinding material, but if the chick is fed much before the grit is there to do the work bad digestion will result. Let the chicks have a chance to get their grinder in prime condition before you give them anything to grind. Sharp sand is about as good as anything you can use unless you wish to buy the especially prepared chick grit. If the chicks are on good sandy range you need give this matter no heed, for they will take care of it themselves—only be sure they have the chance.

The little fellows want to lead a quiet life for the first two or three days, so the pen they occupy should be rather small, and they should be watched to see that they go into the brooder before they get chilled in the least. They will soon learn to go inside as they get cold, and after they do this you will not have to fear their chilling on the coldest days. They can stand more cold than you would think while they are active, but as soon as they begin to chill a little, they cease to be active and want to cuddle down to get warm, which results in their quickly chilling unless they run into the warm brooder. This is the objection to the fireless brooder that depends on the heat of the chickens to keep it warm; the whole flock must be at home or the home is cold, and the weaker ones will get cold and go home to get colder. For rearing chicks without a mother the fireless brooder is not safe except late in the season. I reared a fine flock of a hundred one year thus, but they were hatched well along in May. I would not think of trying to rear March chicks without heat. It is cruel and not safe nor profitable. I knew one flock of nearly three hundred to get chilled just once. In a week less than half of them were alive and these were diseased to a great extent and died later.

Little chicks, like little children, soon learn good or bad habits, and it is for us to guide them in this. One bad habit I taught one large flock was to eat only chick feed, and when it become necessary to feed them something else when I could not get the chick feed they would not touch it until they became very hungry. They refused to touch moistened bread, kaffir corn, or millet seed, but finally they started in on the millet and ate it ravenously, with the result that they became sick and I lost a few before I could get them in condition again. I taught my flocks to eat anything I cared to feed them after that, but I do prefer to use dry food mostly.

Another habit that I like to have them learn early is to come at some signal so I do not have any trouble in getting them up when a storm threatens. I have rapped with a spoon on a tin pan and fed them a milk and bread ration to make it appeal to them. I have seen chicks running from every corner of the range when I began to drum, and it mattered not if they had just finished their breakfast they would come for the bread and milk feast. Picking greens is another habit of value if the flock is to be kept confined. One year I grew a patch of rape for my chicks and kept them shut up in a pen most of the time, with only a small range. I would gather great handfuls of the rape leaves and string them through the wires of the pen and the chicks would gather around them and soon leave but a skeleton of the leaves. I have tried to get other chicks to eat leaves when they were not trained to it from the start, but they refused to touch them unless they were chopped up fine.

After the first few days of abstinence and quiet living to give the digestive organs a chance to get in tone and ready, the chicks can be given all they will eat up clean, and should have it as often as five times a day for best results. The more they eat the faster they will develop if they are kept healthy. It is the quick-maturing chicks that bring the profit, either to sell as broilers or to keep for laying. Robust health goes with quick maturity and good feeding is necessary to produce these conditions. I like to have feed always ready for them in a self-feeder, for they will come up and eat many times when we are not there to feed them, but the regular five meals should be given anyway, especially during the first few weeks of their life. Unless the range is good and not too many running on it granulated bone should be supplied, for the need for this is imperative unless plenty of bugs are to be had.

When the chicks were pretty well started on their feathering out I used to give a regular ration of boiled oats at noon, and coarse corn chop, from which the meal had been sifted, at night. Sometimes I varied the boiled dinner by using wheat instead of oats, and often I fed a morning mash of bran and curd that had been heated just enough to separate the whey.—L. H. C.

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Studebaker—SEVEN Passenger—1917 Model
40 Horse Power—Four Cylinder— DELIVERED TO YOUR HOME

Same Model Sells Now at $1,140 F. O. B. Salt Lake.
With same equipment would cost $1,275.

THIS IS AN ACTUAL PHOTOGRAPH OF THE CAR
Taken in Liberty Park, Salt Lake City.

Here's a **genuine bargain** for the man who wants a family touring car or one to use for business. It is not a new car. It has been used by one of the managers of a large firm who has given it good care and kept it in fine condition. A business change makes the use of the car unnecessary. So now its to be sold and and that without delay. Terms to responsible parties if desired.

It is fully equipped—five tires, (four of them non-kid tread, two are cord tires) complete set of tools, jack, new pump, top cover and extra rim. My business takes me all over Utah so if you live in this State I will bring the car to your home, **demonstrate it**, show you what it will do and **teach you to drive it**. That's fair isn't it? If you want it **write today** because this kind of a proposition won't keep. First come—First served.

JOHN D. GILES, 156 Fourth Avenue
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Dealers Affected by This Superior Paige Service

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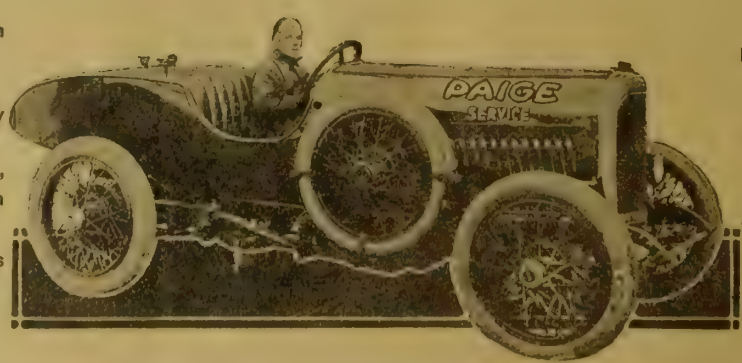

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SALT LAKE CITY

LICE AND MITES

They Begin Their Big Spring Drive on Poultry with the Approach of Warm Weather.

Chicken lice and mites get busier than ever with the coming of warm weather. Unless they are controlled at this season they will have a marked effect on the number of eggs produced by laying hens, and the number of chicks raised. Specialists of the Department of Agriculture recommend that houses be thoroughly cleaned, whitewashed, or sprayed with kerosene or kerosene emulsion at this season. The hens should also be provided with a good dust box, and insect powder should be dusted among their feathers.

Mites and Their Control

Mites usually stay in the cracks of the henhouses and under the roosts in the daytime, where they lay their eggs. At night when the fowls go to roost the mites come out of their hiding places, attach themselves to the fowls, and feed by sucking blood from the birds. To get rid of them the houses should be cleaned and sprayed thoroughly, including the nests, the dropping boards, and roosts. The poultry house that is kept clean and has plenty of sunlight and ventilation is usually free from mites. Immediately after cleaning the house should be whitewashed or sprayed. An effective whitewash is made by slaking one-half peck of lime in 20 gallons of water. Add 1 pound of salt, previously dissolved, and 2 quarts of crude carbolic acid, or 1 gallon of stock dip, and apply the mixture with a spray pump or brush. Kerosene, crude oil, or some wood preservative manufactured from coal tar sprayed about the interior of the house, especially in the cracks and crevices, is an effective means of killing mites. If kerosene is used it is necessary to continue to spray every 10 days or 2 weeks throughout the warm weather. The effect of crude oil or wood preservative is much more lasting.

How to Control Lice.

Inasmuch as lice spend a greater part of their time on the fowls, the most effective treatment is that which is applied directly to the birds. The cleanliness of the house, however, is of equal importance if the lice are to be gotten rid of entirely. The two most practical methods of fighting lice are dusting or using a paste or an ointment. Provide a good dust box containing a mixture of road dust or wood ashes and allow the hens to dust themselves. Dusting the hens by hand is effective and is especially recommended for sitting hens and fowls that are very much infested with lice. A good homemade dust or louse powder is made by mixing together 1½ pints of gasoline and 1 pint of crude-carbolic acid with 4 quarts of plaster of Paris. Allow it to dry, crush to a powder, and work it well into the feathers by hand.

One of the most effective ointments used to destroy lice is a mixture of equal parts of blue ointment with vaseline or lard. Mix these ingredients thoroughly and apply a small portion (about the size of a pea) to the top of the head, under the wings, and around the vent.

Note—Blue ointment should not be used on hatching hens and small chicks.

BRANCH OF GRAIN CORPORATION IN SALT LAKE CITY

It will be good news to the farmers of the state that a branch department of the United States grain corporation has been established in Salt Lake. Offices will be in the Newhouse building, with M. H. Greene, of the Utah Agricultural college, in charge.

The Utah branch of the grain corporation is in connection with zone No. 5, the zone comprising the states of Utah, Oklahoma, Colorado, Texas, Kansas and New Mexico. D. H. Piazzek is head of the zone, with offices in Kansas City.

Selection of Professor Greene of the State Agricultural college as manager of the Utah office of the grain corporation was made after long and careful consideration of the qualifications of a number of men eligible for the office. Professor Greene for several years has been in charge of grain research work at the Agricultural college and is counted one of the best informed of men on Utah grain and crop conditions.

The instituting of a branch office in Salt Lake is consistent with the grain corporation's desire to establish executive centers in all grain raising belts east and west. The especial purpose of the local office will be to look after and keep in close contact with growing conditions, milling and grain interests, as well as to have direct supervision over the distribution of grains to the milling institutions and to speed exportation of milled goods and grains to America's allies in the war.

All grains grown in Utah come under the supervision of this branch office. Mr. Greene's headquarters will be adjacent to those of L. M. Bailey, executive secretary of the Utah fuel and food administration, and J. Edward Taylor, director of division of crops and increased production.

THE SIMPLICITY OF THE TRACTOR

(Continued from page 3)

tractor plow gives the driver confidence, and all fear and apprehension are gone. He can run a tractor, all right.

Of course there is still a great deal to learn, but it comes fast. We learn a little every day, and soon we are thoroughly familiar with the machine, its construction, and operation. We learn where the pipes lead to and from and what they are for. The location of the grease cups is determined. We can tell when the engine runs smoothly by its sound. The whole machine becomes a sort of a pet—we understand its every mood, its behavior, its action and we learn to know its limitations.

The great similarity of the tractor to the automobile is going to be a big factor in familarizing new tractor owners with their machines. Most of these men are already automobile owners, and of necessity have some knowledge of practical mechanics. Tractors and automobiles are very much the same. Of course, we do not have 14-inch upholstery on a tractor, nor limousine bodies with dressing tables, toilet articles, and bouquet holders; and a tractor speed of 50 miles per hour is a wild dream. The engine is there, however, and it is exactly the same type of engine as in the automobile, and is controlled the same way. The transmission is there, too, and the manufacturer's catalogue usually clearly illustrates the piece of mechanism. The cooling system of a tractor is, because of the heavy duty it must perform, made with extra large capacity. The frame and wheels of a tractor are simple necessities as they are in an automobile. The hood over the engine and the shields for other parts are simply to protect the more delicate portions of the mechanisms from dust and the action of the weather.

We believe that the new army of tractor owners are going to be able to operate their tractors satisfactorily, simply because of the responsibility they feel in having to learn to operate them. The tractor must be run, the farmer must run it; and the farmer, because he has to be his own teacher, is going to learn to run it right.

Cream Separator Efficiency

A cream separator is a delicate piece of machinery, and demands a special oil. You wouldn't think of using engine oil to oil a watch. The same logic should prompt you to use—

JERSEY Separator Oil

for your separator. Whether a separator is hand or power driven, makes not a particle of difference. Jersey Separator Oil is made to lubricate all kinds of separators. Order a can from your dealer today.

Utah Oil Refining Co.

Salt Lake City, Utah.

FOR SALE

Big type Poland China Pigs. By the great herd Boar, Utah Pat, who was sired by Jumbo Sampson. The best blood to be obtained.

H. G. JOHNSON

East Garland Utah

Registered Duroc Jersey Hogs. Some good spring litters. Richard Defende rand Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.

ERIK W. OLSEN

Virginia Idaho

BABY CHICKS—BABY CHICKS

White Leghorns, Brown Leghorns, $12.00 per 100.

R. I. Reds, $15.00 per 100.

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WE WANT FARM LANDS IN EXCHANGE FOR SALT LAKE CITY PROPERTY

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LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

PERCHERON STALLION

One pure-bred registered imported Percheron Stallion for sale.

J. T. PETERSON,

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Blackfoot, Idaho.

DUROC JERSEY PIGS

Increase your profits by improving your stock.

Buy registered spring pigs now from

JAMES W. BLAIN

Spring City Utah

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways

Richards Live Stock Co.

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Home of the Champion Durocs.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR

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BABY chicks; eggs for hatching; all varieties. I make deliveries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.

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Black Diamond Dehorning Pencil.

Every pencil will dehorn 50 head from ten days to one month old for $1.00. Forfeit of $5.00 on any calf if it fails to dehorn.

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Ogden Utah

ONION SETS

ON YOUR OWN TERMS.

PLANT NOW FOR WINTER ONIONS.

This is the year to plant for profit only one half usual acreage already planted. We have a limited quantity of good sound sets which we will sell at bed rock prices and if necessary accept payment after harvest.

As you know sets planted now will produce a splendid crop of winter onions at one half the labor cost of those planted from seed.

HERE IS YOUR CHANCE.
GET BUSY TODAY.

Porter-Walton Co.

SALT LAKE.

BINDER TWINE FOR THE HARVEST OF 1918

Farmers are earnestly requested to place their orders for binder twine requirements as soon as possible, so that the local dealers can provide by early shipment for an adequate supply of twine to meet their harvest requirements. Shipping conditions are such that more time must be allowed from factory to local distributing points to avoid danger of shortage in supply.

The pre-war price for Mexican sisal, which comprises the bulk of binder twine, averaged about 7 cents per pound. It was 7½ cents landed at ports of entry in June 1916. In July of the same year, it was increased to 10 cents, and held about at that point until December 1916, when it rose rapidly to 16½ cents in March 1917. Last August it reached 19 cents Gulf ports and 19½ delivered New York.

It was at this period that the United States Food Administration decided to act, because of the imminence of further advances by the Mexican trust. Through the efforts of the Administration, a further rise in price was prevented, although the price of Manilla hemp rose as high as 30 cents per pound. We have been trying since to get a lower price, but our efforts, so far, have not been successful, as the production lies outside the United States.

Efforts to Find Substitutes.

In view of the exhorbitant price exacted by the Commission Reguladora, the Yucatan monopoly controlling sisal, the amount of sisal used in the United States will be much less this season, than in previous years. As a result, the stock of sisal in Yucatan is rapidly increasing, while the demand in the United States is rapidly decreasing, and every effort is being made to find further substitutes, large quantities of which are being used for binder twine.

The Commision Reguladora and the planters of Yucatan must realize sooner or later, that more reasonable prices must be made or the sisal business will be completely curtailed.

Every effort possible has been made to provide binding twine for the harvest season of 1918, at prices as low as possible under the circumstances of inability to more than partially control the raw material. For the accomplishment of this end, the Food Administration entered into an agreement to purchase and distribute to the manufacturers, all of the sisal actually required for the manufacture of binding twine. It also entered into a contract with the binder twine manufacturers, the terms of which provide that the Food Administration shall purchase and distribute the sisal as required, and that the manufacturers shall manufacture it into binding twine on a basis of the cost of raw material plus cost of conversion, plus a reasonable profit.

Ample Supply If Ordered Early.

In conformity with these arrangements, the manufacturers have made semi-monthly reports of the amount of binder twine manufactured from sisal allotments, and from the materials, and after careful investigation by the Food Administration, supplemented by investigations of the cost of manufacture by the Federal Trade Commission, the cost of 500 foot twine was established at 23 cents F. O. B. factory, other grades in proportion.

The retail dealers have also agreed to distribute the twine to the farmers on a basis, which, considering the necessarily high price of twine, does not seem unreasonable. An ample supply of binder twine is assured, and therefore, there need be no uneasiness about the supply of twine in time to meet harvest requirements.

DESTROY THE WEEDS

R. E. Miller.

If there is one enemy the farmer wants to fight this year it is the weeds. They will rob the ground of moisture and feed that the crops should have and we ought to fight them hard.

There is much in the advantage we take in killing weeds. They are not slow to take advantage of us. If you do not believe it let it rain for a week or go off and leave the weeds. When you get back to work you will find how thrifty and hardy they are.

The best time to kill weeds is just as they germinate and before they get firmly established. It is a very easy matter to destroy them when the land is cultivated at this time, but if left till they make considerable growth they are more difficult to hold in check.

Cockleburs are among the weed pests that grow very fast and require prompt attention. When the weather is such that cultivation cannot be done promptly and the burs get a start one is apt to have trouble. The plants soon get tough and leathery if left a few weeks and unless cultivation can be done thoroughly and soon after these weeds start the grower is not likely to get rid of them.

Morning glory, tie vine, is another weed pests to be dreaded. Not many plants grow faster than tie vine. It can soon fasten its vine around corn or cotton plants and then the manager may expect trouble. Like other pests, it is persistent and will "come back" after it is cut off, unless this is done before the roots get a firm hold. The best way to meet tie vine is to get rid of it as soon as it germinates or very soon after it comes through the soil. Sweeps on the cultivator generally will be desirable for cultivating land where these pests are numerous.

On rich black land sunflower will sometimes give considerable trouble. They grow very fast and if the weather should be so that cultivation cannot be done on time the manager is likely to find their eradication expensive. It is worth while to get rid of them early for they are so thrifty that they use an enormous amount of plant food and moisture.

These are only a few of the many weeds we must fight for the production of our crops and to increase production.

The housefly is a modest cuss,
He never seeks for fame;
He has no business in the soup,
But he gets there just the same.
—Journal American Medicine.

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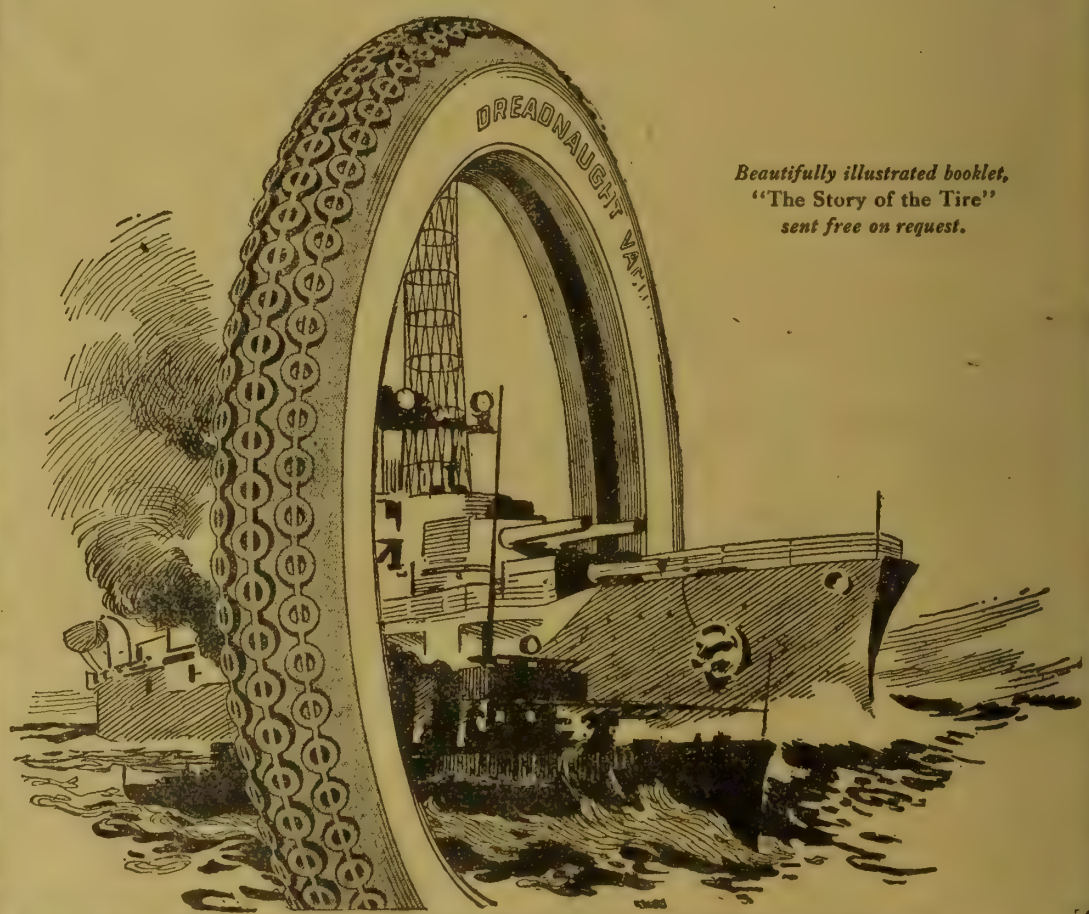

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 43 LEHI AND SALT LAKE CITY, UTAH. MAY 25, 1918

Alfalfa---Queen of The Forage Plants

Frank R. Sommers.

I CAN remember my mother telling me when a boy about sending alfalfa seed back to our folks in Iowa, it is now about thirty-ive years ago—Utah was then growing alfalfa. Ve seem to have been among the first states o grow alfalfa. Judging from the stories we ead many other states are now taking more nterest in growing alfalfa than we are.

This wonderful forage plant seems to grow ere so much more readily than in other laces. Will some one tell me why we do not ake more interest in this plant. It makes a nost excellent feed for all kinds of livestock.

Alfalfa is not a new plant to Utah it has been rown for years. In some states it is just etting started. It may be interesting to ome of the readers of the Utah Farmer to now that alfalfa or lucerne, as we called it ears ago, has been cultivated for ages.

It is said to have grown spontaneously in he high dry regions of Southern and Central sia. It was first familar to the Egyptians, Medes and Persians. About 450 B. C. alfalfa ecame known in Greece. The Romans estimted it highly as forage for the horses of their rmies and its cultivation has been maintaind in Italy to the present time. From Italy was introduced into Spain and Southern France and was arried to Mexico in the Spanish invasion.

When the Spaniard turned his attention to the Incas, lfalfa found its way to the Western coast of South merica, where, escaped from cultivation, it is said to be ound growing wild over large areas. There in the semirid regions of the Andes it no doubt received a great trengthening of its already strong tendency to survive in scorching sun, upon a parched earth .

It is interesting to know that such old time agricultural uthorities as Columella and Jethro Tull were familiar ith alfalfa.

French lucerine was introduced into England as early 1650, but was much neglected for many years. In 765 a farmer in Kent had fourteen acres.

It is stated that at a time alfalfa was recognized as inreasing the milk of kine, but an authority who knew it ell asserted that cattle "were apt to grow tired of it and re subject to be blown by it." These statements are teresting from the fact that so many consider alfalfa a ew plant.

Alfalfa has been a reat help to Utah in roducing feed for our vestock. One of the nost important charcteristics of alfalfa is s long tap root, often xtending 15 or more eet into the soil. This nables the plant to each stores of plant ood in the soil, which an not be secured by he ordinary shallowooted field crops. This ong tap root is also of reat importance in ections of limited rainall as by this means he plant is enabled to ithstand extremes of rought which would therwise be fatal.

Alfalfa being a leguminous plant is able, hrough the nodulerming bacteria within s roots, to add nitrates o the soil, and in this ay increase its ferility to that extent. Ince large yields of lfalfa draws on the soil heavily for the other elements of soil fertility, it usually requires the richest and best-drained soil the farm affords, and if successful will bring returns to justify the use of this land. There is risk, however, in selecting bottom lands for alfalfa, both on account of their failure to drain promptly and owing to the danger from weeds on such soils.

The tenderness of the young alfalfa plant makes it necessary to lay special emphasis upon the importance of a thorough preparation of the seed bed. The soil should be plowed deep because the tap root of the young plant soon begins to strike down deep into the soil. The soil should be plowed as a rule about six weeks before planting in order that it may become thoroughly settled. The surface soil should be put into a fine state of tilth for the seeding.

After securing a good stand it will grow for years. Modern methods, however, suggest a rotation and a change. Alfalfa luriches the soil and helps the crops that follow.

Too many of our farmers allow their alfalfa fields to become weedy and only get a partial crop. Only the other day I seen a patch that was yellow with dandilion blossoms, this kind of a field should be plowed up and put into other crops. When alfalfa becomes so weedy that it produces only a small yield wait until the weeds and alfalfa has grown to quite a height then plow it under.

Alfalfa makes one of the best and cheapest forage plants you can grow for hogs. With a little grain we have had excellent results in producing hogs.

The pasture can be used early in the season, in fact it can be used as an all year round pasture if a little planning and fencing is done.

With corn silage, alfalfa makes a feed that can hardly be equaled for dairy cows and beef cattle, horses, sheep and all livestock do well on it. The question in my mind right now is, why don't we make better use of this wonderful forage plant, alfalfa.

More attention should be given to the proper cultivation of it, to grow a maximum crop. Better irrigation and more care as to the time when to cut it. The best way to cure it and last but not least the best way to market or feed it. We need to wake up and get better results from alfalfa or other states are going to go ahead of us.

Very little, if any experiments, have been conducted in Utah with alfalfa. It is a more important crop than many of us realize. Our largest single crop in Utah is hay, and alfalfa is the greater part of it. The largest money crop we have and we seem to do and know the least about it.

I have written this article with the hopes that it will start some one to thinking, to taking a little better care of his alfalfa this year. Conservation is the order of the day, why not apply it to alfalfa

(Continued on page 9)

SUGAR BEETS

Idaho Falls, Idaho.

My beets are coming through the ground irregularly and I feel tempted to tear them out and replant. In some places, the stand is good but on about one-fourth of the field, I believe there is not over one-half of a stand in sight. What shall I do?

M. J. B.

It is our opinion that the recent showers which have visited many districts has also brought relief, at least in a measure, to your troubles. We have examined many fields and found spots here and there where the moisture escaped and the stand was spotted. At the beginning of the season, the moisture conditions were good and the seed bed generally was better this spring than usual. In many districts, there is an irregular texture of the soil, even though it has been farmed several seasons and the heavy soils where a fine, firm seed bed was not secured allowed much of the moisture to get away. It is very difficult to treat a field, under those conditions that will give a uniform stand of beets.

There is one dependable treatment that will give most definite relief. Spread a little more manure in the fall of the year on these spots. With more organic matter in the soil, the hard, belligerent character of those spots will disappear. These spots do not take up the amount of natural moisture and when irrigating, they do not wet up like other types of soil because they do not have the absorption capacity. Sometimes the sub-soil is largely to blame. If it is hard and impervious, the excess moisture in time of rain does not get through to the resorvoir below and when dry periods come on, the capillary movement of moisture from below to the surface is very, very slow. Usually, after alfalfa is plowed under, this condition is largely overcome because the deep roots of alfalfa has left a lot of vegetable matter deep in the soil and also made additional plant food available to the succeeding crops. For quick action, sweet clover is excellent. The roots of sweet clover are thick and they also drive deep and, because it is a biennial, the roots decay at the end of the second season, even though they are not plowed. This greatly improves the physical condition of the soil and helps to establish uniformity.

The above discussion applies more to future correction of conditions that you mention than as a direct answer. The replanting practice is often very deceptive. An early field of beets has, in most instances, a decided advantage over the late plantings. We have seen many fields that were harrowed and then replanted, stradling the first planted rows. After a time, the first planting was a more promising stand than the re-planted rows. Spaces when the plants are small appear very much more discouraging than at a later period. We have known excellent results to follow "irrigating the beets up" but we have also known of a very great deal of grief, under those practices. In fact, some very good beet growing districts depend entirely upon irrigating their beets up. Where this is practiced, it is necessary to watch moisture conditions, following the irrigation and stir the soil promptly, at the right time to avoid crusting. Of the two practices, generally speaking, it is better to mark out irrigating furrows and give a quick, light irrigation, rather than tear up the first planting and re-seed. Seed is scarce and expensive and then, too, re-planting does not mean a perfect stand, by any means.

With only one-fourth of the field showing a poor stand, I certainly would not think of tearing out and replanting.

GETTING AWAY WITH THE CRUST

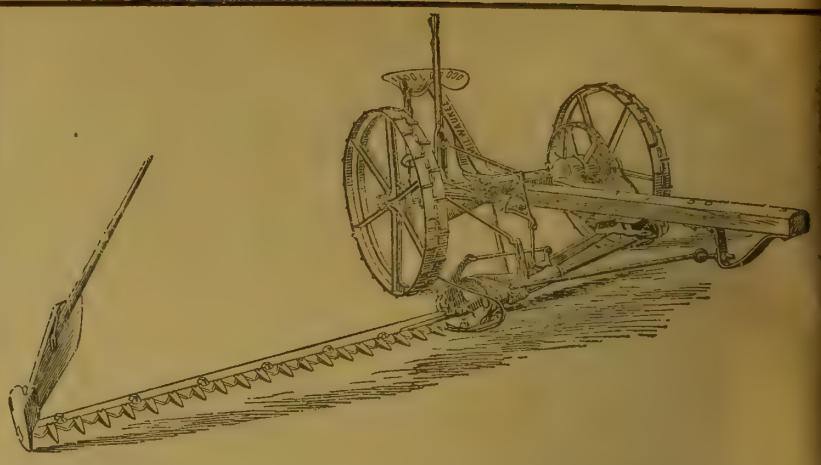
Weather and soil conditions have much to do with getting a stand of beets. A dashing shower, after the seed is put in is very likely to form a crust on the heavier types of soils. Some of our very best beet growing areas have a large per cent of soil that rather readily crusts under certain conditions. This tendency to form a crust can be largely overcome by plowing under alfalfa, sweet clover or other crops to supply organic matter to the soil. The decomposition of this vegetable matter greatly aids in producing a flocculent soil which minimizes the crust-forming risk.

It is necessary to manage with conditions as they really exist, rather than the ideal, which we all hope to attain some day, and therefore every grower of beets should know what parts of the field planted to beets, are most subject to danger from the forming of a crust. With potatoes, corn and some other cultivated crops, it is a rather common practice to break the crust by harrowing, using the ordinary drag. If the harrowing is done at just the right time, before the crust becomes too forbidding, the drag harrow often does good. On many soils, by the time the sub-surface has dried sufficiently to prevent packing, the crust is hard set. In many instances, the stand of potatoes and corn is injured by using a harrow. The beet plant when small is much more delicate than either corn or potatoes and treatment that will be reasonably safe for them will often greatly injure the young beet plants.

What happens when a forbidding crust forms? There is not much root system until the beet plant reaches the surface and the second pair leaves form. There is not a great deal of sustaining nourishment within the beet seed as compared with corn or potatoes. Oftentimes the kernel of corn will start growth and development of the rootlets before the crown or stalk sprout shows and thus the corn plant will be able to withstand a great deal of adverse environment. There is considerable sustaining starch within the potato seed and fibrous roots begin to form as quickly and sometimes even sooner than the crown sprout; this is especially true where the seed has not been kept dormant and the original seed sprouts have been broken off before the seed is planted.

It is therefore obvious that treatment which would be safe for potatoes or for corn may easily sacrifice many of the small beet plants. Heat, moisture and air are necessary for all plant growth. The small beet plant has not the strength within itself, even when a generous amount of seed is used, to break this crust. The young plant will often curl and twist and attempt to grow beneath the crust; it has an unequal show and the vigor is at once impaired. After a time, the plant begins to turn brown—particularly if the weather is cold and the season is backward. Even after the plant gets through the soil, many stands of beets are greatly injured by this damping off, as it is commonly termed, which is reality is an attack of Phoma, often causing considerable loss to the crop at various stages.

If the weather turns favorable, such as a warm shower, a badly infected field will overcome the trouble and outgrow the attack. No time should be lost in helping the young plants to recover. Cultivation should be kept up religiously. The very best way that has yet been found to combat the crust is the prompt use of a scarifying attachment on the cultivator. Most manufacturers offer what is known as the spider, which is a revolving wheel with pointed prongs, somewhat curved. The spider attaches to the cultivator and revolves immediately over the row of beets. A great deal of care must be used in driving, as there is only an occaisonal plant showing through or the drill mark yet to guide. In one district where the soil was heavy, two farmers devised a home-made attachment for their cultivators, which, in their estimate gave them a seventy-five percent of stand where a bad crust threatened to give them not more than twenty-five percent. Not all of the implement dealers or growers know about the spider attachments. They are not expensive and their use in a single day will often much more than repay their cost. Even if they are needed only once in three or four years, they are a kind of insurance policy against a bad stand.



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THE PRESIDENT'S APPEAL

I've been right here on this old farm,
For sixty years, here, where I was born;
Some of the world I've seen "'tis" true.
I've sailed o'er the "old pond" so blue
Been across the continent and something more.
Have seen the "land" from shore to shore.
But to me, this is the grandest spot of all,
As I gaze upon her snowy peaks so tall
Where each year I've tilled the soil
Wrestled a livelihood from my toil.
Last year at the President's appeal tilled it more
And never before in history did it yield up such store.

I told the boys that we must put in more seed,
For there's not only ourselves, there's the world to feed.
And true to there country's call they wrestled with the plow,
Until there is something worth while to show for it now.
And then, bravely off to the colors they went,
Their noble courage to the cause of there country was lent.
For mother and I it was a mighty sad day,
As we saw those two fine fellows march away.
Yet pride and duty cheered the cruel sorrow,
And hope gathered bright for the morrow.
Jim was attending an agricultural college,
And right "there" when it came to actual knowledge.
A using politican was handsome Clem
His college had fitted him for a mark among men.
But our fair country needs them now
And I'm the one, left to follow the plow.

But she's worth fighting for this home of ours.
She gives us our bread this land of flowers.
Then proudly hoist "Old Glory" let her wave o'er all.
And cheer all hearts, who have answered their country's call.

—From one of our subscribers

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VOLUME XIV. LEHI, UTAH, SATURDAY, MAY 25, 1918 No. 43

How Others Are Doing

James M. Kirkham.

It may interest our readers to know how some of our neighbor farmers of Colorado are farming.

I stopped off at Greeley, Colorado, to visit Hyrum Timothy, a Utahan, who has been in Colorado, the past nineteen years, seventeen of them spent at Greeley; and from him learned how the farmers of Weld County practiced farming.

My special purpose, was to get some first hand information about the siloing and feeding of beet tops and crowns, as some of the farmers here have been siloing beet tops for five or six years. It was not until two or three years ago, however, that many of the farmers became interested in this way of taking care of their beet tops. This information will be given in articles that will appear later in the Utah Farmer.

One of the first things to attract my attention was the number of silos, I was told, afterward that Weld County had 600 silos, and would build 250 more this year, judging from the number of contracts already made. In some sections it seemed to me there was a silo on every farm. A silo means there is livestock to be fed, and livestock means a profitable return to the farmer.

I was surprised at the number of farmers who were plowing under green alfalfa, which is now up about six to ten inches. It was not the old fields that were being plowed under but the patches that seemed to me would yield a maximum crop. When I asked why they were plowing under this alfalfa the answer came quick, because it pays to do it. Unless the ground is quite moist it is irrigaed before it is plowed. The plowing is done to a depth of eight to twelve inches. A chain is attached to the beam and handle of the plow, and this is drug along just in front of the plow which lays the green alfalfa nearly flat on the ground, as the plow turns it over and covers it in the furrow. The green alfalfa and moist ground soon cause a heat and the result is that the green alfalfa and roots decay and put humus into the soil which is so necessary for maximum crop production. A light harrowing follows the plowing this forms a mulch—conserve the moisture. Several days later this ground is planted to potatoes and nearly every one has heard of the famous Greeley potatoes produced in that country. Corn is sometimes planted but more often potatoes.

Another way of preparing the seed bed for sugar beets that will be new to some of our readers was explained to me. Plowing is only done every other year, and what they call renovating, is done the alternate years. This renovating doesn't cost more than about fifty cents an acre. It is done with a machine having curved teeth that loosen the soil to a depth of several inches. It doesn't turn the soil over it just loosens it up. For a seven foot renovater they use ten or twelve horses for a smaller size of three feet they use four horses. After this renovating process the ground is rolled, dragged, and leveled in the usual way. The surprising thing about this renovating is, that, from one to three tons more beets are grown the year it is renovated than when the ground is plowed. This practice is followed on all kinds of soil. For a beet seed bed you can only renovate land that was in beets the previous year or potatoes or other root or clean cultivated crops. You can not make a seed bed for beets by renovating on land that has grain stubble or a great amount of trash on it. It is claimed that this method will conserve the moisture better than when the ground is plowed.

The rotation as generally practiced in Weld County is alfalfa three or four years, potatoes one year, sugar beets the next two or three years. Then the land is planted to alfalfa again with wheat as the nurse crop. Some times a crop of beans is grown before putting the land back to alfalfa.

The feeding of livestock is another industry that is helping to increase the farmers balance at the bank. Farmers who can not buy their own stock to feed have a choice of two ways they can secure all they can feed. The large livestock companies will loan them the money to buy at 6 per cent interest. The other way, which is the one more often followed, is where the livestock men or commission companies furnish the cattle and share with the grower on a 20—80 basis. The farmer furnishes all the feed necessary to feed them and receives four-fifths of the difference between the cost at time they are put to feed and the gross returns for the finished product. If an animal should die the loss is stood by the owner of the cattle. Judging from the profits made in feeding these livestock, (details will be given later), the farmer gets a good price for his hay, beet tops and other feeds he may use and has a handsome profit left for his winter work. This feeding starts about October 10th to November 1st and runs from 120 to 150 days. In every case it is the farmers privilege to buy his own cattle or sheep in the open market or stock yards and the man or company joining with the farmer pays the bill or cost of them.

I want to tell you of a community, and we have many just like it in Utah, who were shipping car loads of alfalfa away each year. The shipping was being done by the local merchant, who was also interested in the local bank. This man was a pioneer in the community and from his close association with the farmers he had watched the effect of sending all this great quantity of feed away each year. The farmers were allowing the other fellow to make the profit from feeding it which is often larger than the return from growing it. This merchant-banker said one day he would not ship another car for these farmers, but he would buy or loan money for purchase of livestock so that the feed could be used at home. Today that community is proseprous, they are making double the amount of money now than when they were shipping their feed away. The land is better fertilized and produces larger crops. They are buying pure bred sires and producing many of the cattle they onced purchased out of their community. They are a prosperous people now, where years ago they were, "just farming for a living."

There are many communities in Utah that should "go and do likewise." When we awake to the possibilities of two crops a year, one of feed, the other livestock our bank accounts will increase.

These are a few of the things that impressed me when I visited Greeley Colorado the other day.

Reconstructing Our Lives

Dean Eugene G. Davenport, of the University of Illinois.

"If the war is lost to the allies, it will be the fault of the civil population of the United States.

"It will not be the fault of the allied armies. It will not be the fault of the people of England, France, or Italy, nor yet of Canada.

"It will be the fault of the men, women, and the young people of the United States with whom the war has not as yet become a really serious question. It may as well be understood at once that this war cannot be fought as a side issue nor as an extra. If Americans insist upon living as they have always lived, denying themselves nothing but a few of the luxuries, then Germany will win the war and America will pay taxes to the kaiser. The supposition that the war is to be a long one is not a fact to be counted on. It may be ended very quickly and, if so, it will be a victory for the Central Powers. The smug satisfaction of the American people, assuming as they do that the allies are certain to win, is the greatest danger at the present juncture and, as long as that danger lasts, the issues of the war are as clear cut in the Missippi Valley as they are in the trenches of France.

"We are not in line to win this war until we entirely reconstruct the outlook of our lives. In England, France, and Italy, every man, every woman, and every child over fourteen years of age performs every act with reference to its bearing upon the winning of the war, and Americans must do the same. Unless the American citizen, his wife his son, and his daughter are willing to entirely reconstruct their object in life, the chances are more than ever that the war will be lost because the entire man, woman, and child power of the Central Empire is a part of an autocratic machine with but one purpose in view, which is to win this war and dominate the earth. It is impossible to successfully combat this kind of co-operation unless it is met by an equal devotion to the cause at issue.

By reconstructing our lives I mean that we must cease to live for self. Men and women cannot now live for pleasure, for profit, nor for personal advantage. If we are not willing to surrender the personal outlook for a few months, we shall certainly surrender it for all time to a government which believes and teaches that the individual has no rights, only duties to the governing class.

What is the test of this reconstruction of our lives? Every now and then a farmer says that if he could make more money by raising wheat than by raising corn, he would be willing to do it, but, as long as corn is higher in the market than the government price of wheat, he sees no reason why he should increase his wheat acreage. Is this the argument of the soldier who has given up his prospects in life, left his family, lives in mud and filth day after day, and risks his life every time he is ordered over the top? In the face of all the facts, any man who sits down with paper and pencil and coldly calculates whether he can make more money by raising this or raising that, than by raising the things that are most needed, is either ignorant of the conditions, or a traitor and a coward at heart. In either case he is hardly worth dying for. After the facts have been fairly put up to a democracy, if then it is still so utterly engrossed in selfishness as to have lost its love of country, it is not fit for democracy.

This is what is meant by reconstructing our lives while the war lasts. Farmers must produce, first of all, those things which are most needed, regardless of price. While farming as a whole must pay, and will pay, and while the government will do everything in its power to see that producers have a profit, yet it is beyond the power of any government to insure an equal profit in all things just as it is impossible for the government to insure that every soldier who goes to the front will run no risk of life or limb. This war is a losing game to everybody, except possibly a few pirates who intend to feed off the misery of others. There is no crime in the calendar which is the equal to this, and for such men there is no punishment sufficiently severe.

To reconstruct our lives under present emergencies means that the women of the United States must cut out confection, as the French have long been compelled to do; that our young ladies must forego the extermely high shoes that never before ruled in the fashions of the world. Leather is needed now for something besides display. If our women are not willing to do these things, then they will one day suffer as the women of Belgium and France have suffered. Over there the women work under task masters in the trenches and the mines. They are actually pulling plows in the fields by ropes slung over the shoulders, and who are we to live lives of pleasure and of profit when the world is weltering in its own blood?

Price Control.

The unthinking man does now exactly what farmers have always done—namely, holds his product providing a higher price seems probable. Bills before congress looking to $2.50 wheat check shipments which are sorely needed. If the army is to resist the great drive there should be no agitation in the price of wheat at this time. Let every man who owns a bushel of wheat or a sack of flour understand that it is more precious just now for the winning of this war than is ten times its value in money. Correspondents writing to our colleges of agriculture frequently express the belief that the government has done them damage in interfering with the price of wheat, saying that if the Food Administration had left the matter alone, the farmers would have had $3 wheat and therefore a greater supply would have been forthcoming.

Three-dollar wheat! What does three-dollar wheat mean? It means three times the pre-war prices and it means a prohibitive price for bread to the poor. Moreover, it probably would mean food riots in our great cities, and no sane man wants food riots now in the very darkest days of the great-

(Continued on page 11)

DAIRYING

SOME THINGS THAT COUNT IN DAIRYING

E. L. Vincent.

In these days when things are so unsettled in the dairy business, so that one fairly dreads to take up the paper, lest he should read of some new and unfavorable development affecting the farmer, or when he is afraid to answer a call over the telephone, for fear that prices or other milk conditions are 'all up in the air," it does me good to turn to the more quiet things connected with our certainly great and important work and get comfort out of the matters that do really count and which help to steady folks on the farm.

For example, it is a source of satisfaction to me that whereas a few years ago the best test we could get for our milk was about four, and that, too, in the most favorable season of the year, now we get up around five and a half to six. It has cost us something in time and care and money to bring this about; but we have been happy in it. The road we have traveled has lead by the valley of hard knocks. Sometimes it has seemed to us that we were making rather slow progress. When we wanted heifer calves, we would be pretty sure to find that the cows had brought us bulls. But all the way along we have taken a great deal of comfort in watching our stock gradually climb toward the desired point of excellence. We are still for below the standard set for ourselves, but that is not a bad thing. When we have no higher aim to work for, we are almost sure to settle back toward the bottom.

Then, too, there is the matter of regularity in doing the work of the farm. It has always been a rule with us to do the milking and other chores by daylight, especially when the days begin to lengthen and through the summer and fall months. It began a good many years ago, this plan of doing work at a certain time. It was a rare day when our cows were not let out to get water and to air themselves at ten o'clock in the morning. Then the stables were cleaned, ready for the cows to go back at half-past eleven. Then they had a lunch of hay. Again at two o'clock they were let out again, especially if the weather was good; the stables were again cleaned and the cows brought in in winter at four o'clock. This systematic way of caring for the cattle has been kept up right along.

It may be said that this is not worth while. That point we have settled long ago. We know it does pay. Have you ever stood and watched cows when the time came for them to go into the barn for the night? How they will keep their eyes fastened on the door! They listen to every sound, to see if it be the step of the master. They know it is time to be fed. They are uneasy if that times goes by.

And it makes a difference with the milk cows give, whether they are fed and othewise cared for with regularity. Why should this be? Perhaps we may not understand all about that. One thing we do know, that is, when the udder of a cow is pressed as full of milk as it can be, she is not as comfortable as she ought to be. It seems to be actually painful to the cow, if the time for milking is long deferred. She gets nervous and steps around uneasily, as if she were in real distress. The next time the cow is pretty apt to make some provision against this time of physical discomfort, and she does it in the only way she can, and it is a way that has its effect on the man of the farm. She does not give as much milk as she would were she attended to at the right time. One way to dry off a cow is to be irregular in milking.

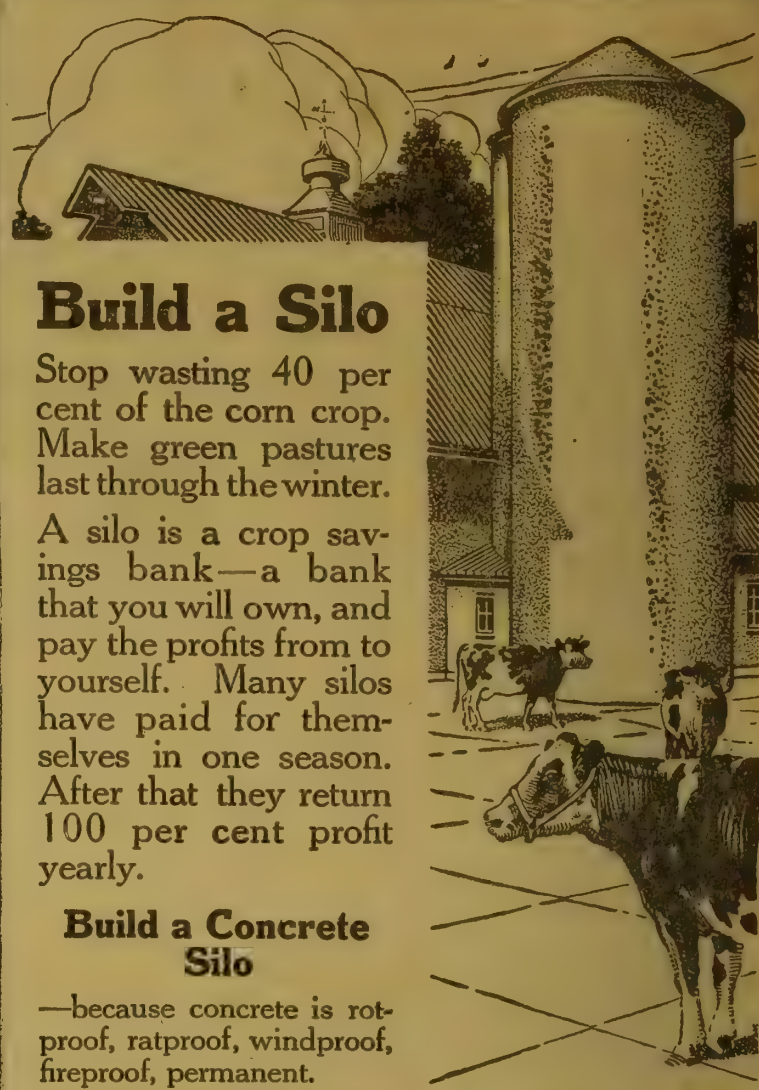
Nor is this all. The quality of the milk the cow gives is not as good or as healthful milk as it would be if drawn at the expected time. I am not sure that the test would vary, for I never tried it, but it is reasonable to suppose that it would; for anything that worries a cow does have its bearing on the value of her milk.

And then the older I grow and the more I have to do with cows, the more sure I am that the way they are treated habitually in greater or lesser degree affects their usefulness. It is painful to me now to be in a stable where dogs are yelling, men shouting or striking cows; for I know that this is not only inhuman but it strikes straight at the success of the business we are engaged in. The process of milk-making are mysterious and complicated. We may leave it to men of science to explain the why and the wherefore of it. That does not so much matter to you and me. What does concern us is the milk we get and its quality. Saying nothing about the effect upon ourselves of rough, unkind ways with stock, in a very direct way we are concerned financially in the care our cattle receive.

Finally, there is much in the methods of the milker. Some men get right at it, take what milk a cow has promptly, yet carefully. Other men dally along, milk a little, visit more and talk loud and scold a great deal more. There is no more sure way to cause a falling off in milk flow than this. I have seen cows that were milked by a poor hand fall off in a marked way. I have known those same cows to gain under the handling of a good milker, so that they would give a couple of quarts more a day. There is a real art in milking. It would pay every man who has to do with cows to master it and do it early. Milk is too valuable to be forfeited in any such way.

BUTTER AND SUBSTITUTES

This year the price of butter has not been in keeping with the cost of production but its price has been, in the minds of many consumers, beyond the range of their pocketbooks, and the result is a large amount of butter substitutes has been purchased. The consumption of oleomargarine made from vegetable fats has increased by leaps and bounds the past year. It has been reported to us that even dairy farmers sell their butterfat and use oleomargarine. This should indicate to them that there are many people in the city whose incomes do not lead them to believe they can afford to purchase butter. We consider this unfortunate, for butter is a food that is highly essential to the health of our people but if the farmer who produces



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Stop wasting 40 per cent of the corn crop. Make green pastures last through the winter.

A silo is a crop savings bank—a bank that you will own, and pay the profits from to yourself. Many silos have paid for themselves in one season. After that they return 100 per cent profit yearly.

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Dry Farm Seed Corn

Mr. Strong of Box Elder County, Utah, experimented for 15 years with dryland flint corn, not only did Mr. Strong increase the yield over 100 per cent but he produced a cob only one-half as large as the old type White Flint. Mr. Strong developed a dryland corn of wonderful merit, a heavy yielder and remarkably early for DRY LAND cultivation, you will not be disappointed if you plant a good acreage of Strong's Dryland White Flint.

Order early as our Supply is limited.

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SALT LAKE

butter believes he cannot afford to use it, he should not complain or be surprised if some of the city consumers feel the same way. The producer should remember that most of the products he raises are sold to people who have only moderate incomes. In comparison with our population, there are only a few people financially situated so that they can pay most any price for their foods. The average man must consider the price he pays for his foods, for, if he doesn't, his income will not supply his family with all the necessities of life.

While we are in full sympathy with those who are asking for higher prices for their dairy products, and we have said many times that dairy products were cheaper in comparison with other things than they should be, and have not sold at prices in keeping with the cost of production, yet the stubborn fact remains that when butter reaches its present price, a large amount of butter substitutes is consumed. There is no way of stopping this, unless we can show the consumer that butter is highly essential and that some of it should be used, no matter what its price may be.

It would be to the advantage of the producer of dairy products if he could convince the consumer to buy them against his will but in all business transactions it is necessary to convince the purchaser that the thing he is buying is worth the money he is paying for it. We might as well look the situation squarely in the face and accept these fundamental principles of buying and selling as to try to deceive ourselves into believing that all that is necessary to do is to raise the price and the consumer will have to pay what is asked.

If we reflect a minute, we will find that the farmer who is buying oleomargarine has said to himself: "I can't afford to buy butter at the present price and I will buy a substiute which is cheaper." This is his privilege but he should bear in mind that it is also the privilege of the city man to do the same thing so, after all, while price is highly essential to the success of any business, yet it is not the only factor to consider in the production of butter. The producer must see to it that he keeps a better class of cows and provides them with feeds from his own farm which are capable of nourishing them properly; that if he is to have a larger market for his products, they must be within range of the consumer's pocketbook, for if the consumer feels he cannot afford butter, he will buy a substitute and the market for butter is lost to the producer.—Hoards Dairyman.

WAR TIME DAIRYING

J. H. Frandsen, University of Nebraska.

Since the beginning of the world war in August 1914, many a prediction has been made as to the duration of the war and its effect on the industrial and agricultural situation in Ameria. Possibly because they were based on imagination, but largely because accurate information was not obtainable, these predictions are in need of more or less modification. However, statistics are now available indicating that over 60,000,000 men have been withdrawn from productive fields to take up actively some phase of war work. These men are not only not producing but are entirely dependent on the efforts of others for their food supply.

This situation will aid us in understanding the food shortage existing at the present time.

As a nation we had formerly been concerned only with feeding our own population and, with seemingly a good balance for export, we had not considered it as a problem. Statistics, however, show that even in normal times the rate of food production in America had not kept pace with the increase in population so that, tho we prided ourselves on being a land of plenty—and rightly so—we seemed to have been approaching the time when we, like the peoples of older nations, would have to meet the question of food production squarely, and work out our own salvation as older nations have been forced to do.

This problem has been rushed upon us by our entry into the war. Not only has our producing population been reduced by the number of our soldiers in the field and in training camps but our consuming population has been greatly increased, for not only have we to feed our soldiers and ourselves, but we must help more than ever to meet the distress of our Allies. We must send them immense quantities of wheat and meat, fat and sugar, and dairy products.

It has suddenly been discovered that our immense surplus has disappeared and that now our efforts must be kept toward a much greater production as well as toward conserving the limited supply now on hand.

According to statistics compiled by the United States Food Administration, the production of dairy products in the United States did not in the years just preceding the war keep pace with the increase in population, to say nothing of the enormous additional demands on account of the war. The further fact that, according to Hoover, the cattle of Europe have been reduced some 28,000,000 since the war began, indicates an alarming decrease in dairy products abroad. This decrease is further emphasized by the enormous increase in dairy exports of the United States.

Increase in Dairy Exports.

Government statistics recently compiled show that the exports of butter increased from 3,693,597 in 1914 to 26,835,092 pounds in 1917. For the same period the cheese exports increased from 2,427,577 pounds to 66,087,213 pounds. The increase in the export of condensed milk is even more striking, the exports in 1914 being 16,209,081 pounds and in 1917, 259,102,213 pounds.

Demand for Dairy Products.

On account of the depletion of European food resources and of the constantly increasing number of American soldiers in Europe, it is absolutely certain that, at least, until the end of the war we may expect a constantly increasing demand for dairy products abroad. In addition, it is safe to assume that this marked demand will continue for at least a period after the war, for naturally the first action of the peoples of devastated Europe toward reconstruction will be directed toward the growing of such crops as will bring at least partial relief to the shortage of bread. It is reasonable to suppose that it will take them years to bring up their depleted dairy herds to the place they held before the war. In the meantime the people must have milk and butter and cheese, and it will fall to America to supply a large part of these, at least, for years to come.

Then too, Europe will look to us for breeding stock to replenish her impoverished herds which it will take time to develop. Cows can not reach maximum production in less than four or five years; therefore, it seems fairly safe to assume that there will be an unusual demand for dairy products and breeding stock for export for years to come.

Home Consumption Increased.

It is reasonable to assume also that the home consumption of dairy products will show a marked increase especially in the form of milk and soft cheeses, since, under general conditions, these are not capable of export but can be used at home and thus release for export meat and fat which are of more concentrated from and of better keeping quality. Add to this the further fact that we are just in the beginning of a nation wide campaign to educate the consumer to the real merit of dairy products—that milk is not only food for infants but that it contains nutrients which should form a part of the diet of everyone; that butter is not a luxury simply to make bread taste better but is one of the cheapest and most desirable sources of energy; that cheese is a valuable muscle builder and one of the best substitutes for meat.

Those behind the food conservation movement and those who have made a real study of the food situation do not advise the limiting of the consumption of dairy products. They rather urge a liberal, tho not wasteful, use of milk and soft cheese, especially, in order that less bulky and better keeping feeds may go in increased quantity to our Allies.

The warring countries of Europe are in dire straits for fat (energy foods). Through the press we note the constant urgent appeal of the German leaders for fat, fat and more fat for the soldiers and civilians alike. The same is true of our own Allies, and we must not let them suffer for want of fat so long as we have abundant supply of coarse, bulky feeds that can not otherwise be used for human consumption, to produce the best of all fats—butterfat.

Willie: "Paw, why is the way of the transgressor hard?"

Paw: "Because so many people have tramped on it my son."

THE "ACID" TEST OF VALUE

At an auction sale the buyer makes the price.

Auction prices are apt to be lower than the real value warrants, rather than higher.

In any case, auction prices represent the estimate of value placed on the article by the buyer and not the seller.

During the past few months, the cow owner's appreciation of the unusual values offered in De Laval Cream Separators has been demonstrated in a most remarkable way.

From one state after another have come reports of the sale of De Laval machines at farm auctions—machines which had been in steady use for several years—at prices, in most cases, only two or three dollars less than the sale price when new; sometimes at practically the same price at which the machine was sold when new; and, in several instances, at even more than the original list price.

In February, at a Missouri auction sale, a De Laval in use two years was sold for $1.25 above the original purchase price. In Kentucky a farmer paid for a De Laval $2.00 more than the original price, at an auction sale. Last January, in West Virginia, a second-hand De Laval sold at auction for $2.50 less than the original catalog price. On January 15th, in Ohio, a De Laval machine in use a year was sold at auction for exactly the same price it brought when new, and at another point in Ohio a De Laval in use several months brought several dollars more at auction than the original list price. In the province of Ontario, early in April, a De Laval in use since 1916 brought at auction a price $5.00 higher than the owner paid for it when new.

In contrast with these prices paid for De Lavals at farm auctions, it is interesting to note that when other makes of cream separators are offered they are usually listed simply as a "cream separator," and not by name. Often there is no bid for such machines and their usual auction prices run from $10 to $15. We have never heard of one that sold at auction for half its original cost.

Perhaps you may not have had an opportunity to learn of the cleaner skimming, easier turning, the great durability and the splendid service given by the De Laval machines, but here is the strongest and best sort of evidence that those who do know cream separators appreciate that the man who buys a De Laval gets good and generous value for the purchase price. And further, that even after a DeLaval has been several years in use, it is practically as good as new.

If you are without a cream separator or in need of a new or better one, why not see the local De Laval agent immediately? If you don't know him, address the nearest De Laval office as below, for any desired particulars.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

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Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

It is not the number of head of stock, sheep, hogs, or cattle that one can produce on an acre which tells the story of profit and loss, but it is the number of pounds that count.

A poor fence is only an aggravation. It is an annoyance to you and the neighbors. Look to your fences at this time of the year. The loss of an animal or damages done to growing crops will more than pay for the cost of repair or even a new fence. Build only good serviceable fences.

ALFALFA

For years Utah has been a great producer of alfalfa. Some farmers have had great success with it, while others do not think so kindly of it Soil and location seems to have much to do with the results obtained.

Some farmers like it so well they allow a stand to grow for years and years, they never plow it up and rotate it with their crops. The general opinion seems to be however, a change about every three or four years never more than five. As to the cultivation of alfalfa and how it should be done there are different opinions. Some advocate the grinding of alfalfa before feeding it, others will tell you it does not pay to grind it. Alfalfa meets with general favor as a good forage crop and it looks like there will be an increase production of it because of the many good qualities it has.

THE SPIRIT OF HELPFULNESS.

From the war we are going to learn and accept of many things. One good thing that has come out of the war so far is that people are drawing closer together, and are showing the spirit of co-operation and helpfulness as never before. Perhaps in the days of prosperity at high tide when there was not the stress and strain we now feel this spirit of helpfulness was not needed so much as now, but be that as it may we are growing more neighborly every day, and whether of necessity or not it is a good thing and will last long after peace has been declared.

There is a desire on the part of the people to help the government and we can often do that by helping ourselves. The more experienced are helping the inexperienced, to see that nothing goes to waste and a maximum production of food is produced. The spirit of helpfulness is helping others and in so doing we can help ourselves.

FEED ECONOMY

Today it is a question of feeding livestock with economy just as much as economy with human food. Possibly one of the best ways of reducing the cost of producing a good food at a low cost for our livestock is by the way of the silo. Large tonnage can be produced on an acre and corn ensilage feed with alfalfa makes a combination that is hard to beat. It is good feed economy to raise more corn and build a silo, feed less high priced grains. With plenty of ensilage you can sell surplus grain and hay and make farming more profiable. The way to make money is to save money, start with your feed bill. Ask one of the many farmers who built silos last year. The test of any feeding proposition is in doing it.

STUDY AND READ THE ADVERTISEMENTS

Nearly every advertisement in the Utah Farmer represents the work and study of some expert. They are written and published to tell the public about particular goods so that when you are interested and need any thing of the kind you will have a knowledge that will be of value to you. By reading the advertisements you get a brief report of the progress in many lines of manufacture.

To be well posted is to know the value, the quality, the price of an article. You can save money this way, and to save money is another way of making it. You can profitably spend the time to look over and read the advertisements in each issue of the Utah Farmer.

Remember we are just as particular about the adveristments in our paper as we are the copy that is published in the columns. There is profit and helpful ideas for you by reading the advertisements each week in the Utah Farmer.

UTAH SHOULD HAVE MORE LIVESTOCK.

We produce a great deal of hay and grain that should be fed to livestock. Thousands of acres of grazing land are in the hills and mountains. All of these should be used to produce more livestock.

Visit any part of our state and you will find the farmers more proserous who have livestock on their farms.

The government reports shows the livestock in Utah is increasing. Milch cows shows an increase of 5,000 over last year this is a good saving in view of the reduced price of dairy products and high cost of feed.

The number of cattle has increased nearly 50,000 in Utah over last year. The sheep have increased tremendously, 251,000 and many of them are farm flocks. About 7,000 horses more than a year ago.

Our hog increase is about 20 per cent over last year. If we can keep up this increase Utah will soon be producing the livestock we should do.

UNPROFITABLE ACRES

We often hear something said about the unprofitable dairy cow, the boarder cow that takes from the profits of the better ones. But what about the low yielding acres? What about the corners and often wide strips of land running all around the farm that never produces anything except weeds.

It may be a strip of poor land running through the farm, is a non-producer because it needs attention, better cultivation or drainage.

Possibly a little time given to the study of conditions and a small outlay would make these worthless or non-producing acres a profit to the owner.

We can not always sell our unprofitable acres like we can dispose of our boarder cows, but we do believe that much improvement could be made on many of our farms with the "unprofitable acres."

One man the other day remarked "that he believed that many farms have as much as 10 per cent of their land that is unprofitable."

If you want to increase the total income of the farm see to it that there are no waste places or unprofitable acres on your farm.

PURE WATER NEEDED

The quality of the water supply is of a lot of importance, not only to the members of the farmer's family, but to the live stock as well. On many farms the water used by the family comes through a supply tank or cistern, the water coming from a well located in the barn yard.

We have seen a lot of these wells dug or bored, and consequently open. If the curb is not of sufficient heighth above the level of the ground and properly covered surface water may easily run into the well. Many times this water may be drainage from the barn yard.

No time should be lost in fixing the well so that it will not be possible for surface water to get into it. This work may require but a short time with a spade, or it may take a few hours with a team and scraper. The work is of enough importance, however, to warrant it being done regardless of how much time it will require.

The health of the family must be protected. Best results from growing and fattening livestock can't be obtained unless they can be supplied at the time with good water. The water supply for both the family and the livestock must be pure and clean.

FARMING REQUIRES HEADWORK

Farming is no longer purely a matter of muscular work—it is work combined with business principals. The same principals that make for success in commerce or industry can be applied to farming. Careful planning, which requires head work, must be done.

Conditions are quite different today than they were a few years ago. Modern methods must be applied if we keep pace with the farmers who win. Increased cost of labor, machinery, land, stock and living must be met by the farmer of today. To meet these new conditions better farming must be practiced. We must learn from our neighbors, from good agricultural papers, bulletins, books and from information secured at our agricultural college. Better preparation of seed bed, best kind of seed, more and better cultivation, proper amount and time of irrigation, these and many other things the modern farmer must learn if he keeps pace with the wonderful changes that are going on. Let me quote the saying of Disraeli, "the poorest of men, is he whose labor leaves him no time for thinking; who every hour is filled with the tasks that earn his bread." Every farmer should spend more or less time in reading, in planning, in thinking and then add to this the work so necessary for success.

LEARN ABOUT FARMING.

Years ago farming was often looked upon as a job for some one who could do nothing else. This is not true today. Farming is a science and there is always something new to be learned about farming. What one learns this year will benefit him in the years to come, but next year there will be something else to learn if one would keep up with progress. Every day, every hour as we plow, cultivate, breed animals, select seed, spread manure and do the many things that must be done, we learn, and must continue to learn, if we wish to become successful farmers.

In no other business is there a greater demand for definite information. The right thing must be done at the right time in the right way. Farming is a business that requires business farmers.

We have the testimony of many, the examples of hundreds, that farming pays when practiced in an intelligent, definite, business way. Men succeed. They make the farm pay a profit upon their labor, their intelligence and the capital they have invested. Farms afford a competence to rear large families, educate the children, and start them in business for themselves with intelligence, healthy bodies, strong moral characters and indomitable energy. Farms are doing this under the supervision of progressive managers, affording them at the same time many of the comforts of life.

What other business with the same capital does more?

Utah's Experimenters In Agriculture

Dr. George R. Hill, Jr.

That George R. Hill, Jr. today occupies the important and influential position in the State that he does is due to his unbounded enthusiasm, his everfailing faith and determination to overcome obstacles, his innate abilities, and his hard work. His life's work even thus far is a worthy example and should be an inspiration to every boy in Utah.

He was born in Ogden, Utah, in 1884. When he was five years of age his parents moved to a farm in Springville, Utah, which was his home during his youth and early manhood. The farm life, the cliff-bound mountains towering above his home, the adjacent canyons, rivers, and Utah Lake all combined to inspire him with an abiding love for country and the wondrous works of nature that has been one of his notable characteristics. Intensely does he love the soil and its products, and he is whole-heartedly interested in the problems of the tiller of the soil. As a consequence his life's work is being devoted to the improvement of conditions on the farm.

Dr. Hill's early education was obtained in the Springville public schools, the Brigham Young University, and the Utah Agricultural College; from the last two mentioned he graduated with the Bachelor of Science Degree. His advanced work was done at Cornell University, from which he secured the degree of Doctor of Philosophy in 1912, and at the Missouri Botanical Garden at St. Louis.

While at these eastern institutions, Professor Hill specialized in Plant Physiology and in the fundamental problems underlying crop production. He also devoted himself intensively to the related lines of Plant Pathology, Horticulture, and Chemistry and did notable work in those subjects. In all his study Dr. Hill's main idea has been to get down to the bottom of things and know a subject thoroughly in order to be able to supply intelligently that information to the problems of the farmer. It is characteristic of his study that he always aims to ascertain its agricultural bearings and how it may be made useful in bettering rural conditions. Furthermore his heart and soul are with the West and the people of the West and his life is being devoted to serving them.

While at Cornell and the Missouri Botanical Garden he gave particular attention to injuries to fruits and vegetables in storage and in transit in refrigerator cars. The losses to the West each year from this source are simply enormous. As a result of Dr. Hill's earnest and intensive study of the problem he contributed a great fund of information on the subject and especially showed how the losses can be reduced thousands of dollars each year by paying proper attention to the ventilation, temperature, and humidity of the products in storage or transit. This information was published by the Cornell Experiment Station as Bulletin 330 and it was eagerly sought by the railroads and cold storage companies of the country.

After finishing up his school work in the East Dr. Hill accepted the position of Professor of Botany at the Utah Agricultural College and Plant Pathologist at the Utah Experiment Station in 1913. Here his greatest service to the State began. His work involved both teaching and experimentation. In both lines he has been eminently successful. He early demonstrated his teaching abilities when he taught Agriculture at the L. D. S. U. in 1908-09.

Ever since he was a very young man Dr. Hill has occupied positions of leadership. His genial disposition, his whole-hearted enthusiasm, his broad and sympathetic outlook on life, his generosity, and his ability to think through problems make him not only loved by all who know him but also a natural leader among his fellows.

In 1916 Professor Hill was promoted to the Directorship of the School of Agriculture at the College, a very important and responsibe position. Because of his life-long experience in leadership, his educational training and experience and his sympathetic attitude toward the farm and its problems it was easily recognized that Dr. Hill had a peculiar fitness for the place, and this has been verified by his labors in that position.

As Plant Pathologist of the Experiment Station, Dr. Hill has done and is doing very notable and useful work of incalculable value to Utah and the West. One of his greatest achievements along this line is his work with potato diseases and their control. So bad had these become that in 1914 and 1915 Utah lost over 1,000,000 bushels of potatoes due to Rhizoctonia alone. Fusarium wilt, blackleg, and common scab also took heavy toll. A lot of people were treating their potatoes but in many cases were not getting satisfactory results. It remained for Dr. Hill and his staff to find out why. And they set to work on the problem with characteristic vigor. As a result of their efforts Utah has been saved enormous losses and people have been educated along this line.

Another line of work that is engaging Dr. Hill's attention is the diseases of canning crops. The canning industry is assuming enormous importance in this State. Yet when it is realized that the average yield of tomatoes in Utah has gone down from about 15 to about 9 tons per acre it means that we must be up and doing and avoid this loss. And Dr. Hill is on the job in order to help prevent such losses occurring through disease.

Other problems that he also has under way and is studying experimentally are vitality in seed potatoes, California peach blight, sugar beet diseases, grain smuts, fire blight and numerous related problems. Each year the work of making a plant disease survey is carried on and great benefits are derived therefrom. Hundreds of farmers are also given individual instruction and help each year. The only limiting factor to the extension of this work to accomplish even more than can be done at present is shortage of funds, but as the importance of the work becomes better recognized it is felt that this handicap will be overcome.

FARMER IS LIMITED BY CONDITIONS IN COMMUNITY

W. E. Grimes.

The average farmer is limited in the changes he can make in his farm business by the farm practices of the community in which he is living.

There are farmers in every community who would like to change their systems of agriculture but are restrained from doing so by the fact that their neighbors will not change from one type of farming to another better suited to the region, but failed because the cost of running such an entirely independent business was too great.

Apples Sell in Orchard Regions.

A man owning an orchard in a locality where there are no other orchards has trouble in getting rid of his crop. Buyers would rather buy in a district where there are a great many orchards, and it is often difficult to get them even to make a bid on the same class of fruit that they buy readily in other localities. Even when the farmer is so fortunate as to get buyers, he generally receives a lower price for the same grade of fruit than would be received in a general apple growing region.

Besides the problem of a market, labor which understands that type of work is hard to get, merchants do not keep in stock many of the materials needed, and implement dealers do not carry repairs for machinery not commonly used. These conditions make the cost of the change prohibitively high.

Illustrated in Stock Breeding.

These facts are probably more evident in the keeping of purebred stock for breeding purposes than in other lines of agriculture. If a man wants to buy several purebred Holstein cows, he generally goes to a locality where there are a large number of farmers keeping that kind of stock. Often there is a man in his own community who has for sale Holsteins that are just as highly bred as those in other districts, but he either has no market for them or must sell them at a greaty reduced price.

The farmer ought not to think on account of these facts that he should not change his system of farming just because his neighbors do not do likewise. It does bring out the fact that sudden and radical change generally is not successful. There are ways of getting around this handicap, however, and the farmer should make a careful study of conditions and determine how best he can bring his neighbors to his way of thinking.

Probably the best way for a farmer to start such a movement is to arouse the interest of his neighbors in his farming operations. Farmers in a community profit from the experiences of the individuals. The farmer should strive to excel his neighbors in their own farming operations. This focuses the interest of his neighbors on his methods of business. As soon as this has been accomplished he can gradually bring about the change that he advocates. This is necessarily a slow process, but if it is succesful the community will follow the lead of the farmer who is bringing about the change.

PRODUCING GOOD CREAM

Now, that warmer weather is at hand greater care is necessary in the handling of the dairy products. Cleanliness and quick cooling are essential if milk and cream are to be kept sweet any length of time. Warm milk is especially susceptible to bad odors and any germs that get in the pail or other receptacles increase rapidly while the liquid retains animal heat. These germs are responsible for quick souring, gases and nauseating smells.

To prevent such conditions should be the aim of every dairyman whether he milks one cow or thirty. To begin with the cow must be reasonably clean, all adhering straw, dirt or manure should be brushed off. The flank, udder and teats should be well wiped with a damp cloth just previous to milking to prevent dandruff, particles of dirt or manure and loose hairs with their thousands of adhering germs from falling into the pail. The less dust there is in circulation around the dairy barn the better. A clean dairyman, a clean cow, a clean place and a clean pail are the requisites needed in the production of clean milk. But a few germs are bound to get in despite all precaution. To prevent any increase and offset danger cool the milk immediately after being drawn, unless it is to go through the separator, in which case the cream should be chilled afterward, as well as all milk to be used for human consumption. Never mix warm cream with cold as it only hastens fermentation. Stir well when adding a new batch to prevent lumpiness. In fact all cream in process of saving should be stirred twice daily. Exclude from dust and insects by covering top of receptacles with fine meshed wire or cheese cloth. Never with a tight lid unless can is submerged under water.

Arrange some way to keep your cream sweet or nearly so till you have sufficient on hand for churning or marketing. A cave or cellar is seldom a satisfactory place for storage. Running water is better. Cream kept at a temperature of from forty to fifty degrees will keep sweet a week, other conditions being favorable. The less milk it contains the easier it is to keep from souring. Set your separator screw so cream will test about 45 per cent, if cream is to be shipped, and never less than 35 per cent. If this rule is adhered to during the warm weather season better cream and bigger profits will result. If the receptacles containing milk and cream are covered with a wet blanket or other like material while enroute to point of delivery, they will arrive in much better condition than otherwise.

The standard of purity for the cream you sell should be as high as that you use at home. First grade cream brings first grade prices. It, also, makes first grade butter.—C. K. T.

The thing that goes the farthest towards making life worth while, that costs the least and does the most, is just a pleasant smile. The smile that bubles from a heart that loves its fellowmen, will drive away a cloud of gloom and coax the sun again. It's full of worth and goodness, too, with manly kindness blent, it's worth a million dollars and it doesn't cost a cent.

For Your Stock

A well balanced stock feed is much better and more economical for stock than straight grains.

SUN RIPE

Stock Feed

reduces your feed bills and improves the health and condition of your stock.

Order a supply from your dealer, or write to

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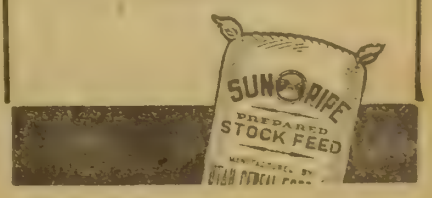
Ogden, Utah.



HOME

COTTAGE CHEESE A REAL FOOD

One pound of cottage cheese furnishes as much protein, more minerals (except iron), and almost as many calories or fuel units as one pound of lean beef.

One pound of cottages cheese furnishes as much protein, more minerals (except iron), and half as many calories or fuel unit as one dozen large eggs.

Fried Bread With Cottage Cheese.

Spread slices of stale bread thickly with cottage cheese, with which pimientos, nut meats or some marmalade or jelly has been blended. Dip in a mixture of egg and milk, and fry quickly in butter or other fat.

Variation: The egg and milk may be omitted, and the sandwich may be fried lightly in a very s all amount of bacon fat.

Baked Bread and Cheese.

4 medium slices of bread, 1 whole egg, 1 egg yolk or an egg white, 2 cups of milk, ¼ teaspoon salt, cayenne pepper, butter, 1 cup cottage cheese, ½ teaspoon soda, onion juice, parsley and pimiento, or picalilli or chili sauce, nuts if desired.

Butter the bread and cut the slices in squares or diamonds. Place a layer, buttered side down, on the bottom of a large shallow buttered baking dish. Dissolve the soda in a little of the milk and with it mix the cheese to a soft cream. Add parsley and pimiento or sauce if desired. Spread a thick layer of the cheese lightly over the bread, and cover with the rest of the bread, buttered side up. Beat the eggs well, mix them with the milk and seasonings, and pour them over the bread. Bake in a slow oven till a knife thrust into the custard comes out clean. If the milk is warmed and added gradually to the beaten egg, and the baking dish is set in a pan of hot water, the custard cooks more quickly and is less likely to curdle through becoming overheated.

Variations: Corn muffins, barley or oatmeal bread may be used instead of white bread. This dish may be made into a hearty sweet pudding by omitting the onion juice and other seasonings and substiuting two to three tablespoons of sugar or an equivalent sugar substitute, and raisins or dates, nutmeg or cinnamon, and other spices if desired.

Suggested supper or luncheon menu: Baked bread and cheese, green salad or crips fresh vegetable, toasted corn muffins, coffee or Russian tea; fresh or canned fruit. For a heartier meal, add baked or hashed brown potatoes.

USE POTATOES TO SAVE WHEAT

The potato has a place in our food list which no other vegetable occupies. It appears on the tables of countless families at least once a day and often at all three meals, and is so much a part of our daily food that we miss it almost as much as we would bread if we have to go without it. Its popularity is based on more than accident or custom. It is palatable and wholesome, supplies much food material, and has some special food qualities to its credit. Though we prepare it in almost endless ways as a vegetable served with meat and other foods, we also use it for soups and salad making, sometimes for desserts, and with flour in baking. That we can use potato with flour is not surprising, for the food substance potato supplies most abundantly is starch, and it is largely because of the starch they contain that the world uses cereal grains as breadstuffs. It will very often be found, with a little experimenting, that one-third to one-half of the flour in some favorite recipe can be replaced with mashed potato.

Yeast Bread.

If potato is used for bread making, allowance must be made for the large amount of water in it and less additional liquid used for this reason.

Potato Bread.

1 cup mashed potato, 1 teaspoon salt, 2½ cups flour (more if necessary), 4 tablespoons water, 2 to 4 tablespoons liquid yeast, or ½ cake dry yeast, or 1-6 to ½ cake compressed yeast.

Short process: Mix the salt with the mashed potatoes, which are free from lumps and cooled until lukewarm. Add 1-6 to ½ cake compressed yeast softened in 4 tablespoons warm water, or 2 to 4 tablespoons liquid yeast, or ½ cake dry yeast. When liquid yeast is used no additional water must be added. Blend with this potato and yeast mixture 1 cup flour. Stir until smooth, cover, and set to rise. When this sponge is light and soft, knead in enough flour to make a rather stiff but elastic dough. Be sure that it is stiffer than ordinary dough. Cover and let rise again until very light. Knead down, mold, and place in lightly-greased pan. Let rise in pan until as high as ordinary white bread, then bake at least one hour in a moderately hot oven. Bake very thoroughly. This makes one loaf.

If desired, an amount of grated raw potato equal to the amount of mashed potato called for may be used, but the resulting bread is darker and has a more marked potato flavor than when cooked potatoes are used.

Quick Breads.

Try this recipe for tea biscuits. Notice that the liquid is less than is the case when all flour is used, because of the water the mashed potato contains.

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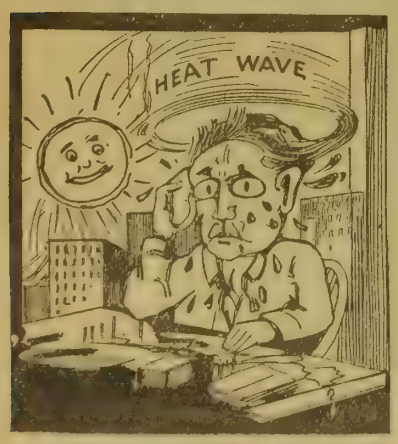

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Walt Mason

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First Aide to Hostesses Who Know

PERHAPS it's only a couple of friends who drop in for a little chat. Or—it may be a knitting party, an Aid Society meeting or what not. Or—who knows?—perhaps it's a big "party"—music and dancing and Japanese lanterns and all that.

In any event, don't overlook the help Ghirardelli's can give you. Whether it's two cups for yourself—or two gallons for your "big affair"—you can make it just as easily.

Just *one* reason why Ghirardelli's has always been first aide to hostesses who know.

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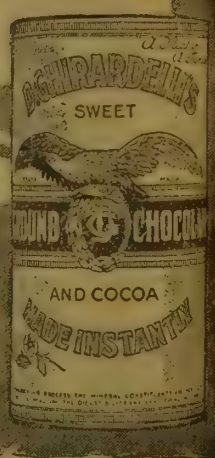
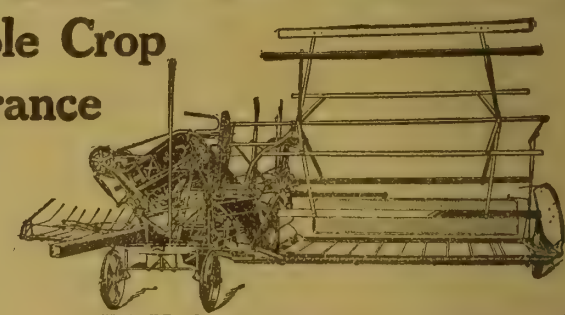


Whole Crop Insurance



YOU CARRY insurance as a matter of course. It is good business to be protected from loss, so you keep your policies in force and pay the premiums regularly.

But there is one kind of insurance you may not know about, which requires no premiums, on which you realize every year, and which this year is fully as important as any other insurance you carry. **When your crops are ready for cutting, International Harvester binders and twine insure the harvesting of the whole crop.** No matter whether the grain be heavy or light, tall or short, standing or down, lodged and tangled, an International Harvester binder cuts and binds it all without waste. That is what we mean by whole crop insurance.

Champion, Deering, McCormick, Milwaukee and **Osborne** harvesting machines and binder twine, always efficient, are better than ever this year when every bushel of grain is needed. Remember this when you come to buy your binder and twine for the season's work. Remember, too, that the larger sizes conserve labor. An 8-foot is better than a 7, and a 7 better than a 6 or 5. Buy the largest binder you can use, and buy a new machine if there is any question about the efficiency of the old one. A new International Harvester binder is absolutely reliable.

Through ninety branch houses and over 30,000 local dealers, we give the farmers of this country prompt service on harvesting machines, twine, and repairs. You can be sure of having your new machine on time by placing your order with the local dealer as soon as possible, or writing us now for catalogues.

International Harvester Company of America
(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah San Francisco, Cal. Spokane, Wash.

Potato Biscuit.

2 cups sifted flour, 1 teaspoon salt, 3 teaspoons baking powder, 3 tablespoons shortening, 1 cup mashed potato, liquid sufficient to mix.

Sift together twice the flour, salt, and baking powder. Cut or rub into this the cold shortening. In the same way rub into this flour mixture the mashed potato. Finally, add just enough cold liquid to make the mass cling together. Do not knead. Place on floured board, roll until ½ inch thick, and cut into rounds. Place these in lightly floured biscuit tins and bake 15 to 20 minutes in a moderately hot oven. Bake all potato breads more slowly than those made with flour alone.

Potato-Cornmeal Muffins.

1 cup mashed potato, 1 cup corn meal, ½ cup sifted flour, 1 teaspoon salt, 3 teaspoons baking powder, 1 or 2 tablespoons sirup, 2 tablespoons shortening, 1 or 2 eggs, Liquid to mix to a medium batter (about ½ cup).

Add the corn meal, salt, sirup and ½ cup liquid to the hot mashed potato, place in double boiler and steam 10 to 30 minutes. Add the shortening and allow to cool thoroughly. When cold add the well-beaten eggs and the flour which has been sifted with the baking powder. Add just enough more liquid, if necessary, to make a somewhat stiff batter. Beat thoroughly, place in gem pans until half-filled, and bake 25 to 30 minutes in a moderately hot oven.

ALFALFA—QUEEN OF THE FORAGE PLANTS

(Continued from page 1)

and this year try and secure a better and larger crop. Take better care of it and feed it to livestock on your farm.

Barley at $3.50

Or distillate at ten cents—which is better for the nation—for you to use? Labor is scarce and growing scarcer. One man with a Yuba 12-20 Ball Tread Tractor will plow and cultivate more than three men and three teams—produce more crops at less cost in money.

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TRAINING THE CHILDREN

Florence Alright.

Many persons fail to realize that the child born to them is not a possession, is not a thing to mould according to their own desires, their own personal ambitions, or their own social aspirations. We must rid ourselves from the very start of this sense of ownership and begin from the cradle to look upon the child as an individual being, whose sacred right it is to unfold his own self with the help, care, nurture and love due him.

What definite means can the home adopt for the best development of the child in the first six years of his life? First, with regard to the things which surround the child, furniture, pictures, books, toys, clothes, and ornaments. In how far may these lend themselves to his development?

In the room in which the child spends most of his time indoors, the furniture ought to be plain enough so that he can do no great harm in playing freely about. A good blackboard should be hung securely on the wall, for from the hour he can toddle, the child will delight in chalk markings, and these even then will have value because of the muscle development afforded the arm and hand.

The pictures on the wall in the child's room ought to be distinctly for him, and hung low enough so that he may take them down and handle them whenever he chooses. Every child likes color and delights in the "story picture," the picture which has a story connected with it. The child may be taught to discriminate between his own things and those belonging to others by being allowed to visit the family living room where mother's and father's books and their pictures and furniture are used with care and caution. In this way it will also be possible to lead him gradually into an appreciation of the adult's standard of art in pictures, music and literature.

The value of good music in the home cannot be overestimated. Fortunate is the child whose ear is accustomed from the cradle to beautiful sound and melody. And yet even more fortunate is the child who is accustomed to hearing the singing voices of those about him. Children love to hear songs, children's songs, big people's songs, and folk songs. They love to hear the songs of long ago when mother was a child, and the lullaby grandmother used to sing. The child loves especially a bed-time song, sung at the crib before the final "good-night."

Story-telling is a great art and the mother or father who has this gift can give their children unbounded joy and fill them with fond memories of the story-hour that will never be forgotten. As for moral influences in the home, it is the words the child hears us speak, the things he sees us do which will have the greatest effect on his nature such as respectful care and tender affection toward the grandmother, the grandfather, the aunt, the uncle; our attitude toward those in our employ, etc. Family festivals will make ever glorious impressions on the child's mind.

The spirit of charity should permeate the home. The little child is too young to know how to help the less forunate, but he will imbibe the home spirit and with his growing understanding adopt the ideals by which he is surrounded.

Above all other influences the most telling is that which the parents create by means of their relationship to each other. If peace reigns supreme and father and mother live as one having a deep, true, earnest affection for each other, facing together the joys and sorrows, and supplementing each other's strength at every turn, there is no greater legacy parents can leave their children than the influence and memory of such a home.

Let all who now are safe at home
In eating play the miser,
And send our surplus food to rout
All those who "hoch der kaiser."

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Director of The Summer Quarter
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SAVE FUEL WHEN YOU COOK.

Whatever fuel you use, make it go as far as possible. Money saved on fuel can well be spent on better foods to cook, and if you cut down your use of fuel, you can help make the supply go around.

To have a fire you must have, besides fuel, air to make it burn. In gas and oil stoves the air supply is regulated by the makers. In coal or wood ranges or cook stoves you must regulate it by means of dampers.

Learn to Use Every Damper in Your Kitchen Range.

The important dampers are:

Damper in the ash pit which lets in the air which passes through the fuel box, making the fire burn.

Damper over the fire controlling air to flow in above the fire.

Oven damper which switches the current of hot air around the oven instead of letting it go by the shorter path up the stovepipe.

Check draft damper in the stovepipe just above the range. This is not always found and is less important than the rest.

Stove pipe damper which checks heat from escaping up the chimney.

Make Your Fire the Right Way.

To make a fire in a range, whether coal or wood, close all dampers of the stove and shake the firebox to free it from ashes, dust, and clinkers. Take off the lids over the fire-box, place crumpled paper in the fire-box, arrange kindlings over and around it so that air can pass freely between them, and put on a small shovelful of coal. Light the paper, open damper in ash pit, damper over oven and damper in stove pipe and put on lids. When the coal glows red, a little more coal should be added, and when the fire is burning well, the fire-box may be filled. If wood is used as fuel, put on a few sticks at a time.

Learn to Manage the Fire.

By the proper use of the dampers the fire can be controlled and the heat regulated.

The damper in the ash pit. This should always be kept open when the fire is burning as it is the best source of air for the fire. Close it only when you dump the grate and when the fire is banked to keep it for some time. However, if there is no stovepipe damper, the damper in the ash pit must be closed to check the draft when the fire burns too hard.

The damper over the fire. Close this when you are starting a fire. If the fire burns too rapidly so that the flames are long enough to reach the back row of lids, open this damper a little bit. This will shorten the length of the flame and give you more heat. If you open this too much it may cool the oven.

The oven damper. When this damper is closed the flames and smoke and hot air are forced to pass around the oven to heat it and then afterwards they escape up the chimney. When the damper is open they pass directly up the chimney. As soon as the fire is burning well, close this damper so that the oven will be heated. This will keep the oven so that you can make it very hot quickly by adding extra fuel and will warm your room if the oven door is left open. With this damper closed you will use much less fuel than by allowing the heated air to take the shorter path up the chimney.

The check draft damper in the stovepipe. It should be kept closed except when the fire is banked.

The stovepipe damper. This is a most important damper. It can control the amount of fuel burned, as the more slowly the hot air passes up the pipe, the more slowly the fire burns. A great deal of the fuel sometimes merely furnishes heat that escapes up the chimney. Check this escape of heat and burn less fuel by using the pipe damper. If your fire is burning too hard, instead of closing the damper in the ash pit, close the one in the pipe, for it checks the fire much more effectively than the other damper.

If your oven does not heat even with the oven damper closed, it is probably because the air carried around the oven has been pulled through the fire so fast that it has not been thoroughly heated itself and can not heat the oven. Close the pipe damper.

Keep Your Range Cleaned Out.

If the fire-box is clogged with ashes, air can not pass through the fuel to make it burn. If soot hangs on the stove lids, less heat can come through it. A layer of ashes over the top and under the oven keeps it from heating quickly.

Banking the Fire

It is an economy to keep a hard-coal fire over from day to day, especially if the range is used as a source of heat for the room. As a rule a wood fire is hard to keep over but the hard-coal fire can be easily kept. In the evening rake out the ashes, put coal on, and open the dampers until the fresh fuel is burning well. Put on coal until the fire-box is almost full and close all the dampers except the check draft damper in the stovepipe.

Think of the Fire When You Select the Food to Cook.

If you keep a slow fire in your range all day to supply heat for the room, select foods that require long slow cooking. Baked beans or peas, roasts, and puddings can be baked in the oven and cereals cooked in a double boiler on the back of the stove. Avoid foods that require a very hot fire for a long time.

Gas, Kerosene or Coal Oil, and Gasoline are economical for cooking if carefully used. Never mix two liquid fuels and never use gasoline in an oil stove, for each requires a special burner. Use all with care.

GARDENING.

R. C. Pixton, County Emergency Demonstrator Agent.

It is un-American in such times as the present to waste space in reviewing the advisability of a home garden. When an enterprise is recognized and financed in such times as these by the government, it should no longer remain an issue for argument as to its practice. Such is the case with gardening.

In such an undertaking co-operation is essential. Co-operation can be procured by local organizations such as farm bureaus, councils of defense, high school boys and girls clubs working with this office so as to scatter profitable experiences and experiments over the entire county for the profit of all.

The aim of such a project as gardening should be to produce enough vegetables for family use during the summer growing season and a surplus of the varieties which may be bottled or preserved by some means to suffice the family wants for the winter. Wheat substitutes should comprise the major part of the remaining land after the family garden is in. Other indications of garden thrift may be shown by the planting of lettuce between the hills of corn, radishes between the potato hills, etc. Such small crops as these may be used before the larger ones have hardly put in their appearance. The drain on soil fertility of such an operation is negligible, hence is of no consideration.

Another project which is worthy of mention and timely consideration is that of local garden seed production. By taking an individual interest in each of your garden crops and plants one can see that they are good colored, large sized plants which are not so susceptible to insect pests, disease or draught, and under the same kinds of treatment as the rest of the patch or row, which ever it may be, are doing much better. These are the pants to leave for your seed production.

The seed situation and prospects are none too favorable this year, hence this may be a means of avoiding a seed shortage next spring. Then, too, the nearer a gardener or farmer can come to producing his own seed on his own land, the greater will be his yields, providing, of course, that he keep up the seed standard and begins with a variety that is adapted best to the local conditions, such as kind of soil, temperature, moisture, supply length of growing season, etc.

CUT WORM CONTROL

Cut worms will be a serious menace to crops this season if not controlled. Fortunately there is a method of control. The Agricultural College and the Bureau of Entomology have the following to say:

"The best remedy for cut worms is poisoned bran bait made as follows: Thoroughly mix 50 pounds of bran, 2 pounds of Paris Green and 6 finely chopped lemons. Stir to a stiff dough with low grade molasses diluted with enough water to mix well with the bran. Scatter sparingy in small lumps around bases of plants and over entire field."

Last year the following formula proved very effective: 1 lb. white arsenic, 20 pounds bran, 3 lemons, 2 quarts syrup, 2½ gallons water.

The worms prefer the bran bait to the pants. Since they usually hide before they die, the dead ones will seldom be seen.

D. S. Jennings, County Agriculture Agent.

O. J. Poulson, County Crop Pest Inspector.

HE ADMITTED IT

"You know, Sam, it's no disgrace to work for a living."

"Yassuh, I knows it sah. Dat's what I allus tell mah wife."

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FARM BARGAIN

160 acres, cuts 200 tons of hay, 45 head of cattle, 4 work horses, implements, good pasture, a few apple, cherry, pear and small fruit trees, 8 room house, barn, machine sheds, wagon scales, blacksmith shop, close to school and open range, good water right. ($16,000 Terms.

FEDERAL LAND COMPANY

Ogden Utah

50 ACRE FARM

I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.

W. C. ALBERTSON
625 Dooly Building
Salt Lake City, Utah.

HUNDRED ACRES improved Arkansas fruit belt, drafted, $4 buys. Write immediately, N. O. Kenner, Oklahoma City, Okla.

Windsor Hotel

LOCATED IN THE HEART OF THE CITY

225 So. Main St.

125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.

FREE BUS SERVICE
To and From all **Depots**

All Cars Stop In Front of Our House

A home like place for local people where you will meet friends.

Good Rooms 75c, $1 and up.

The Windsor Hotel Co.
M. A. Scott.

RELIABLE FARM BARGAINS

4 acres of truck garden land; has house two chicken coops, a small barn other outbuildings. We can sell this place for $3000. This includes 200 chickens, 200 rabbits, two horses and harness, two wagons and all tools necessary to work the ground. This is some of the best truck garden land we have in Salt Lake county. Located between old 13th and 14th South on 3rd West.

We have a 160-acre farm in southern Idaho which we can sell at $60 per acre. This includes a full water right paid up. This property adjoins the state highway and is only two miles from the town. We consider this one of the best bargains we have had in our office for some time. It would pay you to investigate this land if you are desirous of obtaining a farm. We can divide this to suit the purchaser. 10 per cent down at time of purchase and ten years on the balance at 6 per cent.

We have one million acres of first-class grazing land which we can sell from $3 to $12.50 per acre. We can allow you any reasonable length of time in which to investigate this property. In fact, we can give one, two or three years, if desired, before any payments are made, to thoroughly convince you that this land is what we represent it to be. We sold approximately 100,000 acres of this land last week, and everybody who sees the property purchases it, as it is the most remarkable offer that has ever been made to the public. If you are looking for grazing land, it would pay you to investigate this. It will be a pleasure for us to give you any information we can pertaining to same, by calling in or writing to us.

We have a 40-acre farm located 1½ miles south and ½ mile west of Virginia, Idaho, which we can exchange for Salt Lake City property. This 40 acres is all under cultivation and has a full water right. If you have a piece of property in Salt Lake that you wish to exchange for a farm, it would pay you to investigate this. We would be glad to give you further information pertaining to this property if you will call at our office.

We have listed with us 160 acres of dry-farm land, located in the Bear River valley. This is some of the choicest dry farm in this section. The owner is desirous of obtaining a home in Salt Lake, which he will take as part payment of the above farm. The property is all under cultivation and will soon pay for itself.

KIMBALL & RICHARDS
"Land Merchants."

Farm and Ranch Dept.,
54 South Main St.

OFFICE OPEN UNTIL SUNSET.

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

RECONSTRUCTING OUR LIVES

(Continued from page 3)

est war in history. There never was any such thing as three-dollar wheat except in the dangerous days of indiscreet buying by the allies a year ago. Those who are best informed insist that if prices had not been to some extent influenced, we would have had 30-cent sugar, which would have meant revolution, and thirty-dollar flour, which would also have meant food riots.

Every country at war, excepting ours, is on the bread-ticket basis, and unless the people respond better than they have yet responded, this country will also be there very shortly. While some dealers respond to all that is asked of them, others hoard without conscience. Within the last few days twenty thousand barrels of flour have been found in an eastern city. There are evidently men in America who are willing not only to gamble with the lives of women and children, but also with the very existence of the government that gives them protection.

Business as usual—no! The man who adopts the slogan, "Business as usual" is a traitor to his country whether he knows it or not. There is no such thing as business as usual. Everything is unusual now. Some kinds of business will be enlarged and others will be curtailed or cut out, as they ought to be.

Why should dinners in our hotels and restaurants be entertained by orchestras of perfectly able-bodied men while the country is suffering for wheat, for coal, for steel, for the very materials necessary to the winning of the war? This is a question of labor, not of profit. No man has a right to expand his business now unless that business is essential to the winning of the war and, when it is he should expand it to the utmost on the basis of normal profits before the war. This world war is not a grab game. It is not a case of killing the goose that lays the golden egg for the sake of dividing the feathers; it is a case of supporting Uncle Sam in the hardest job of his life.

Transportation.

War upsets everything; nothing more than transportation. It became necessary to take over the railroads in order to free our system of distribution from the multitude of conflicting laws enacted by the forty-eight different states that make up the nation. There is no better evidence of the crippling effect of recent legislative policy regarding our railroads. We have had the hardest winter in history and the most shipping to handle. Seventy per cent of the traffic on the Pennsylvania Central is war traffic. The economizing of transportation therefore is one of the great problems of the immediate future.

The Shipping Situation.

We seem to have passed the most difficult stage of our shipbuilding program. The first task has been to build and equip the yards for building merchant ships. There has been and there is difficulty in the labor situation, and here again the call to labor, as to everyone else, is to play this game while the war lasts and settle differences afterwards.

Spies.

In none of the countries at war is there such an enormous alien population as we have in the United States. The vast bulk of these are loyal to the government under which they came to live and which affords them opportunities such as they could never have had at home. It does afford, however, rare opportunity for the spy and for the man who will sell himself to the service of an enemy country. History shows that there have always been men unworthy to live in respectable society who for a few pieces of silver will betray any trust and any cause which lay within their power to betray. One of our jobs now is to find these men as rapidly as possible and see to it that their power for evil is taken away.

This is Everybody's War.

In brief, this is everybody's war. It is being conducted by the government to be sure, but we are the government. The army will do the fighting, but the army has come from our own firesides. The peope and not the army must do the producing and must do the saving. Those who have been taken into military service have been forced to reconstruct their lives. The civil population must do the same, because in order to win this war the entire power of the people will be required.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending May 21st.—Cattle—Receipts, 1,716; market, steady; choice steers, $13.00; good, $8.00@9.00; feeders, $7.00@9.00; choice cows and heifers, $9.00@10.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $8.00@9.00.

Hogs—Receipts, 667; market, steady; tops, $16.90; bulk of sales, $16.90.

Sheep—Receipts, 25,684; market, steady; lambs, $17.00; ewes, $9.00@$10.50.

North Salt Lake, May 21.—Cattle—Receipts, 411; market steady. Choice steers, $12.50@13.50; good steers, $10.00@12.00; fair steers, $7.75@9.50; choice cows and heavy heifers, $8.75@10.00; fair to good cows and heifers, $7.50@8.75; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $7.50@8.25; bologna bulls, $6.50@7.00; veal calves, $8.00@10.00.

Sheep—Receipts, none; market steady. Good choice grain fed lambs, $16.00@17.50; choice yearling wethers, $13.00@15.00; fat wethers, $12.50@14.00; fat ewes, $10.00@12.00.

Hogs—Receipts, none; market steady to lower. Choice smooth fat hogs, 175 to 250 pounds, $16.50.

Omaha, May 21.—Hogs Receipts, 16,000; market steady, closing lower. Heavy, $16.75@16.85; mixed, $16.95@17.10; light, $17.10@17.25; pigs, $12.00@16.00; bulk of sales, $16.95@17.10.

Cattle—Receipts, 11,700; market steady, 15 to 25c lower; native steers, $11.15@17.50; cows and heifers, $9.00@13.50; western steers, $9.50@14.50. Texas steers, $9.00@12.25; cows and heifers, $9.00@11.50; canners, $7.50@10.00; stockers and feeders, $8.00@13.00; calves, $10.00@12.75; bulls, stags, etc., $9.00@13.00.

Sheep—Receipts, 9000; market steady; yearlings, $16.00@17.50; wethers, $14.50@16.50; ewes, $10.00@13.00; lambs, $14.75@19.80.

HOW TO ELIMINATE THE RATS

Results of 300 experiments in poisons and tests in trapping carried out at the Kansas State Agricultural college are expected to prove of value to the farmers.

Raisins Are Good Bait.

While the rat population on the college campus was thought to be less than the estimated average—one rat for each person—and although some of the buildings are rat proof, through the efforts of the department of zoology 425 rats and 479 mice were captured and a large number poisoned in the last year. It is estimated by the United States biological survey that one rat will eat and destroy $5 worth of produce in a year. Killing the 425 rats then represents a saving of $2.125

The best bait for the traps was found to be raisins, which are easily attached to the traps, are attractive to the animals, and remain fresh for a considerable length of time. Cornmeal was effective where other food was not abundant, but where cereals were easy of access a bait of sausage proved more alluring.

Zoologists Recommend Formula.

It was learned in the experiments that rats can eat large quantities of strychnine with impunity. A formula containing white arsenic was found more effective, killing 85 per cent of the rats on which it was tried. A formula recommended by the department for the use of farmers and others consists of one part of white arsenic, one part of cornmeal or other meal, and eight parts of sugar. These ingredients should be mixed dry. The dose is a teaspoonful or more placed where the rats are likely to get at it This mixture is easy to prepare and if kept dry will not deteriorate or freeze in cold weather. It cannot be carried by the rats and left in places dangerous to domestic animals and to children. A considerable amount of this poison was used in the veterinary and animal husbandry stock lots of the college and proved effective.

AUTOMOBILE REASON

B. H. Wike.

It is an every day occurrence to hear somebody ask something about their cars or to have somebody else tell something about theirs. The automobile is the innocent cause of a wave of misunderstanding in one way or another. So many car owners have been honestly advised on different things, and a great many of them, though learning at a great expense for the sake of costly experience, are many times the ones to whom you couldn't tell a thing when it came to taking care of batteries, driving, tire care, oiling, etc.

To begin with batteries, those little boxes from which comes the power for lighting, starting and ignition, we must say that too many owners profess either to know they ought to give them care and consideration, or else they claim to do so and yet fail to do it right by doing nothing at the right time. Perhaps it may be summed up as pure carelessness. But the leading word of instructions to car owners is that the storage battery, in order to give the best service, must be tested and have water added at least every two weeks. When the water gets low by evaporation, so that the plates are exposed to the air, damage is being done. Moreover, the battery comes in for much consideration too when driving, especially when the meter shows that the battery is having "juice" turned into it for too long periods at a time and at high rates. Avoid overheating when charging, but at the same time keep the battery charged. The hydrometer is the thing to have right in the car so you can add pure water and make the tests. You can feel the terminals of the battery (it won't shock you) after each drive and see whether they are abnormally warm. If they are modify driving.

Principles of starting and stopping the car are rarely well understood, but every owner should remember that a horse can not start a load all of a sudden without breaking his harness or else stalling him completely. There is the force of inertia to overcome. This principle applies to the automobile as well as to any other object. This is what the low gear is for—to facilitate starting as well as for climbing steep hills or for bad places. Use the low gear reasonably whenever occasion calls for it. Let the clutch in slowly at starting so as to get the car moving smoothly and slowly without straining on the parts.

Tires are usually put out on a certain guarantee for so many thousand miles before adjustment, but even here the tire maker will say it all depends upon the car owner—how he drives and takes care of the tires. Tires are like many other things—they must be given consideration. Keep them up to recommended pressure at all times and avoid skidding caused by turning corners too quickly or slamming on the brakes unreasonably. Practice dodging rocks too and watch the difference in how the tires wear.

Oiling is necessary, and aside from the crankcase, which should never be overloaded, there is not so much danger in over-greasing as there is in not greasing often enough or of keeping the parts supplied with good grease sensibly put on. But excess grease working out gathers dust and looks bad by making things look smeary. Keep the car clean of grease accumulation, but be sure every bearing and wearing surfaces designated as such by the maker get their share of grease. Use a standard grade and watch the maker's schedule to see when grease chambers should be drained or replenished. Then you will have no room to complain or to blame the greasing question and can feel assured you have done your part.

Don't jump at conclusions either. The automobile is a mass of principles, of mechanical powers, combined in various ways to make a contrivance for travel. How well the modern American car does all this is proven day after day, but the fact remains that owners can do much more yet for themselves. In other words, study your car and understand its various points and operation.

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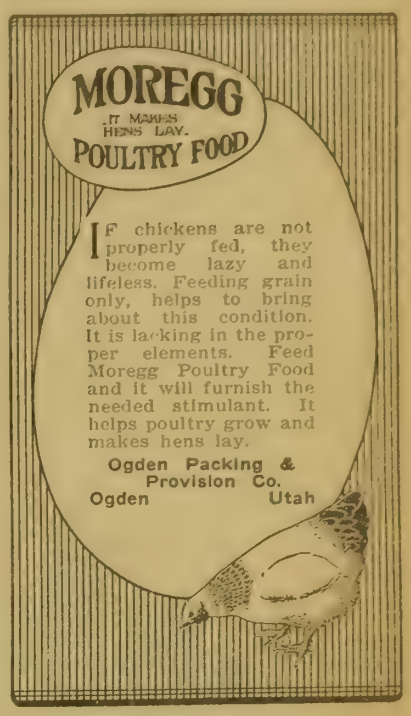

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Utah Oil Refining Co.

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LIVE STOCK

HOGS HEAVIER THAN LAST YEAR

J. M. Carroll.

While the hog growers of the country have come to the front with a great increase in numbes of hogs on their farms, they are also adding to the meat supply by making their hogs heavier than a year ago. Recent marketings have run considerably heavier. During one week of the past month, at the Chicago market, when more than 200,000 head were marketed, the average weight was 229 pounds, the heaviest in about six months. This weight was 26 pounds heavier than same week of 1917 and showed a like gain over the corresponding week of 1916. Twenty-six pounds per head may not seem very large on a few hogs but this taken as a criterion of the general conditions in the country shows that the amount of pork produced is considerable larger. And this increase in weight was made during a period when many feeders had nothing else but soft corn on their places.

Conservation of pigs and young hogs, which during the past few years were marketed freely at this time accounts for a large part in the increase in weights shown at the markets. Not near as many pigs as a year ago are being slaughtered at the packing houses. This is, because the demand for pigs and stock hogs during last fall and winter months was about the greatest ever known. High prices caused the farmers in all parts of the country to want to get into the hog raising business. In cases where hog raisers were forced to sell their young stock, on account of feed conditions, they readily found other farmers who were willing to buy their stock. In this way only the finished hogs, in most cases, were cashed at the markets and the pigs and young stock were kept at home to be fattened to marketable size or kept to breed and build up the swine population of the country.

While the census figures show that only 71,374,000 hogs were on the farms at the start of the year, it does not mean that only the number or less will be slaughtered during the year. A large part of the pigs farrowed during the spring and even some farrowed next fall will be killed before the year is ended. Going back to 1916, this being the latest year that official figures are available, we find that the government figures showed 67,766,000 hogs in the country at the start of the year. The actual figures from all federal inspected plants for the same year show that 76,070,000 or 8,304,000 more than the census report showed, had been killed. This is where the spring and fall farrowed pigs count in the figures. Of course, the spring farrow in this case was more than the difference between the two totals. Other hogs died from various causes on the farms while a large number were killed for home consumption and sale purposes that do not enter into the slaughtering statistics.

Judging from these figures, it is safe to presume that around 80,000,000 hogs will be slaughtered at the federal inspected plants during the present year. Taking the average of dressed pork per hog carcass in 1916 of 154 pounds the total pork production of the United States this year, not including any big number of increases in pigs farrowed during the spring, which is sure to develop, the output of dressed pork will be 12,320,000,000 pounds as compared with 11,595,000,000 for 1917. Then while the average weight of live hogs this year shows such a great increase over the comparative figures of 1916, the net production of pork should be even larger than the example shows.

Exports.

Official figures show that during the year 1917 tne exports of bacon totaled 578,288,053 pounds; hams and shoulders 243,386,814 pounds; lard 373,349,323 pounds and pork, pickled and other cured, 88,755,231 pounds. These four items alone, all products of the hog, totaled 1,283,719,421 pounds, which shows how great the demand is from points outside of the country. When this is deducted from the total pounds produced, it is found that the amount left for home consumption is not as large as first thought. The export figures quoted here were taken during a period when the demand was the greatest up to that time, but lack of production hindered greater shipments. This year the United States has and will have larger numbers of men in the field and with production of meat animals practically at a standstill in foreign countries, the demand for meat from this country should be even larger than last year, so may million pounds will be required to take care of this end of the trade.

Quoting this aggregation of statistics started to show what the hog producers of the country have done and are doing toward building up a meat supply in the country and then went on to show what a task they are up against. When the great demand is cited, it can be seen that food officials have a reason to ask for greater production of livestock. The hog men have heard the request and are doing their bit. They know that hogs can be produced and finished to a marketable stage within a short period when compared to other stock. They have the means of supplying meat in short order.

Hog feeders are linking patriotism with their business which in the end should net them prosperity because of the great demand and high prices that are bound to be in vogue with such conditions.

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. **Lasts all season.** • Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent express prepaid for $1

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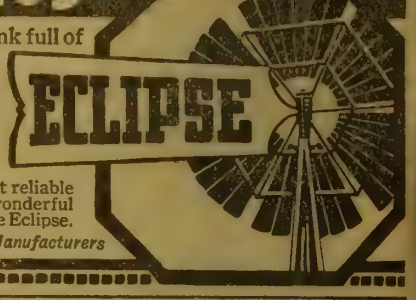

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CARE OF THE BROOD SOW

In the present emergency, calling for increased pork production, it may be assumed that every available sow has been bred for spring farrowing. The winter care and treatment of brood sows, says the New York State College of Agriculture, determines largely the number and quality of pigs to be raised. Overfatness does not lead to numbers, or to strength, or to vigor of the pigs. A gilt should be growthy, in medium condition, and should be kept gaining. A mature sow coming to winter quarters in medium condition should tend to gain during pregnancy. This may call for a small grain ration, including one-third to one-fifth of a pound of meat meal tankage or its equivalent, in addition to the roughage or succulence that the sow may regularly receive.

Sleep and Exercise.

The activities of the sow in winter time is devoted to sleep. This calls for dry, well-bedded sleeping quarters. Quarters cannot be too dry or too free from drafts. The pen must be cleaned and the bedding changed at frequent intervals. Adequate bedding in severe weather adds greatly to comfort.

Exercise is essential, and it should be induced or compelled. Provide the water and feed at some distance from the sleeping quarters. This will tend to keep the latter clean. Straw or manure piles furnish exercise in the open air. Lice must be controlled.

Suitable Feeds.

Regular habits and laxative, nutritious feeds are essential in the maintenance of tractable contented sows and the production of numerous, vigorous pigs. Water and feed the sows at regular intervals.

One of the advantages of swine husbandry is the low cost of wintering sows. Yet this should not blind one to the essentials of sufficient food, both as to amount and variety. The aim is to produce good, husky pigs that will lose no time in reaching the market. Properly feeding them, through the sow, both before and after birth, is a large factor in shortening the time required to bring them to market size and in reducing the cost of their gains in weight.

The young sow that has to complete her growth as well as develop her litter requires a somewhat narrower ration than older ones. Mineral foods and tankage or buttermilk and skimmilk should be used with these young sows. Corn has long been the basis of swine rations when used in conjunction with other materials, yet its price for feeding is now nearly prohibitive.

A formula for grain feeds for brood sows need hardly be ironclad. Suitable farm grains, if available, should be used. Crushed barley, oats or peas may be used with hominy, middlings, oil meal, or tankage. Where feeds have to be purchased, a mixture of hominy and middlings in about equal quantities together with 5 to 10 per cent of tankage or its equivalent in skim milk will probably make an ideal grain mixture to feed as slop.

Alfalfa hay fed in such manner that the leaves will be consumed, together with roots or other succulence should be provided. In the absence of roots, corn silage may be used in very limited amounts. It carries too much fiber, however, to be of much use to swine.

Care At Farrowing.

A week or two before the pigs arrive the sow should be given quarters by herself. A moderate allowance of a laxative ration is now essential. The use of 40 per cent hominy, 35 per cent middlings, 15 per cent bran, and 10 per cent oil meal by weight is recommended for this period.

Allow only a small amount of bedding. It is less dangerous to the pigs. Keep an eye on the sow but do not disturb her unless assistance is needed.

New born pigs should not be allowed to become chilled. If the sow is gentle the pigs may be removed as fast as born and if the weather is cold place them in a box or barrel with artificial heat. When they become lively they may be returned to the sow.

The sow's milk flow should not be stimulated the first few days. Feed lightly, giving warm water the first day if the weather is cold, followed later by a thin slop. In two weeks time, get the sow on a good laxative, milk-producing ration. Allow the pigs exercise and keep them growing by feeding the sow generously.

CARE OF BROOD MARES.

We can find no better place for the mare with foal to pass the winter than a large roomy box stall. If the doors fasten properly so that the mare cannot get out it is much better not to tie her at all. In this way on days too stormy to be outside some chance for exercise is allowed. Keep the brood mares quarters clean. Throw out the manure each evening and give fresh bedding of clean straw or shredded fodder for the night. If this is attended to regularly much unnecessary work in currying and brushing will be saved. I know that to me it is much more agreeable to keep the stall properly cleaned and bedded, for I despise to clean up a dirty horse.

Whenever possible the stall should admit sunlight and ventilation. If confined in damp, dark quarters it is injurious to the health of the mother, and saps the vitality of the colt. On every fair day, even if it is a bit cold the mare should have at least several hours of liberty per day. However, it is risky to let the mare out of the stables when the ground is covered with ice unless sharp shod. Nor should she be allowed out while the young horses are out for a run. Brood mares are frequently short of temper while heavy with foal, and during cold weather young horses are always

(Continued on page 16)

WOOL

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Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team haul and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circulars showing different styles.

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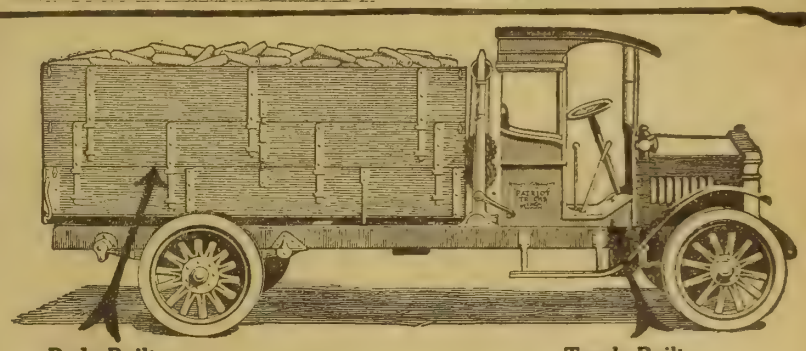
Box 976 Clarinda, Iowa



Body Built for Country Loads

Truck Built for Country Roads

PATRIOT FARM TRUCK

Built for Country Roads—Built for Country Loads

There is real need for motor trucks on the farm—to speed up transportation—

To bring better markets nearer—

To master bad roads—

To save high-priced horses—

But—the farmers have not bought them to any great extent. Why? The reason is, there has never before been a real Farm Motor Truck on the market.

Those that have been sold were built for the paved streets of the cities—not the soft roads and fields of the country.

The Patriot Is the First Motor Truck Built for Farm Work

Or—they have been mere cheap units to combine with worn-out, low-priced, low-powered cars—forming makeshift trucks that never were expected to deliver real farm service.

But now—the farmer has a real truck—built in the center of Agricultural America—by experienced truck and body makers, in a new, complete and modern factory—and built for farm service.

Every farmer with 160 acres or more should find out what a Patriot Farm Truck will save. Write for information.

HEBB MOTORS COMPANY

Manufacturers of Patriot Farm Trucks

1377 P Street Lincoln, Nebraska

Lincoln Model 1½ Ton
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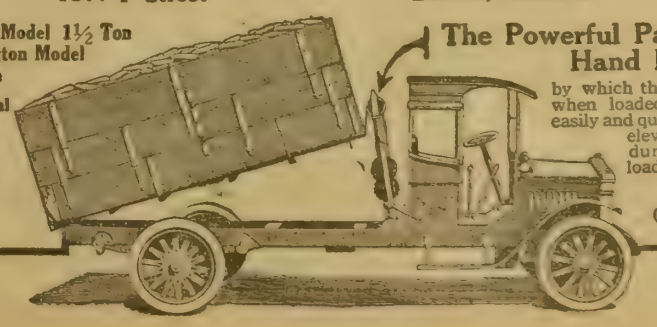
Continental Motor

Internal Gear and Worm Drive



The Powerful Patriot Hand Hoist by which the body, when loaded, may easily and quickly be elevated to dump its load.

(9)

POULTRY

KEEP YOUNG STOCK GROWING

N. S. Green.

There is often a tendency to let the young chickens 'take care of themselves" after they have passed through the first few weeks of their lives and have begun to feather out nicely. No greater mistake could be made. Whether intended for market or for next winter's layers the young stock should be looked after carefully in order to keep them healthy and growing steadily. If their growth is once checked it is almost impossible to overcome the difficulty thus established.

By the latter part of May the hatching season should be practically over. Few farmers care to hatch chickens in June, the old notion that June-hatched chickens sleep themselves to death being still generally held. The truth of the matter is that June-hatched chicks will grow and thrive just as well as any others provided they receive the care they should have. There is more hot weather to contend with but aside from that, conditions are apt to be better than they are in early spring. Most of the losses of June-hatched chicks may be traced to neglect. The farmer and his wife are both busy and as a consequence the chickens are more or less neglected.

By the time the chicks are a month old they should be in colony houses where they can have plenty of room to run about. Our plan has been to provide them with a roomy hover set inside a large packing box. The larger breeds such as Orpingtons, Brahmas, etc., cannot be placed in the colony houses as soon as leghorns and other small breeds as they do not feather out so soon. Colony houses should be made of a size convenient to move about from place to place as desired. A good size is three by six feet, four feet high in front and two in rear. Piano boxes and scrap lumber make cheap and durable houses. Houses of this sort we have found very satisfactory. The floor is laid on four by fours. At each corner uprights are placed and to these the boards are nailed. Sides are tight to exclude drafts. The lower half of the front is boarded up and the upper part covered with poultry netting. A curtain to drop down over the opening at night is provided. These houses will accommodate about eighty chicks.

We have found hopper feeding much the best method for the growing chicks. Either large hoppers holding a week's supply, or small ones that must be filled up every day or two may be used with good results. Just as soon as the chicks are large enough whole grain is scattered in litter where the chicks must work for it.

Pullets intended for layers can be given free range, but all stock intended for market can be more quickly fattened if confined. Our plan has been to separate the sexes when about two months old and confine the cockerels not wanted for breeders in coops and prepare them for market just as quickly as possible. Feed is too expensive to allow us to keep stock any longer than is necessary. The pullets, too, are culled closely, and all not up to our standard go into the fattening pen to be prepared for market. The pullets which are to be kept are then distributed among the various houses in groups of twenty-five, where they are kept until ready to be placed in their winter quarters.

They receive practically the same diet as the old stock. We have found this better than feeding them a different ration during summer, then changing to the adult ration in the fall. Our aim is to keep them growing steadily without forcing. In this way we have a fine lot of pullets to put in the laying pens.

SPRAY CHECKS MITES

Poultry Houses May Be Freed of Pests by Use of Insecticides.

Frequent cleaning and a liberal use of a good insecticide will aid materially in preventing an outbreak of mites in the poultry house. For spraying over the walls, floors, perches, nests and dropping boards, the Ohio Experiment Station recommends the following solutions:

(1) Three parts of kerosene mixed with one part of either crude carbolic acid or commercial cresol.

(2) Kerosene emulsion made by disoloving half a pound of hard soap in a gallon of water by gentle boiling and then adding two gallons of kerosene; one part of this emulsion is mixed with six parts of water.

(3) Lime-sulphur solution as recommended for dormant spraying of fruit trees.

(4) Cresol disinfecting solution made as follows: Put 3 1-5 quarts of raw linseed oil in a five-gallon crock. Dissolve one pound six ounces of commercial lye in another container starting with half a pint of water and adding more very slowly if it is needed to dissolve the lye. After three hours very slowly add the lye solution to the raw linseed oil, stirring constantly until a smooth liquid soap is produced. Then very slowly stir in 8½ quarts of commercial cresol. For most work a five-percent solution with water is used, or about 12 tablespoonfuls to a gallon of water.

After the litter and nest material are removed from the house, the inside should be sprayed thoroughly with one of these solutions. A spray pump is effective to force the material into crevices. Since the mites are especially numerous on perches and nesting boxes, these should also be well sprayed with the insecticide. Care should be taken not to get any spray on the eggs as it gives them an undesirable flavor. A second application about a week later is necessary to kill mites that escaped the first treatment or hatched out afterward.

These small, blood -sucking mites are perhaps the most injurious pests of fowls. They feed on the birds at night and congregate in swarms under roosts or in nest boxes in the daytime. They may so overrun a poultry plant by midsummer as to make it almost uninhabitable if measures are not taken to prevent their spread.

HANDLING BROODER CHICKS

E. E. Rushing.

There is no doubt but what brooder chicks have many advantages over the ones raised by the "old-hen method." If they are started off without getting overheated or chilled, they will get along fine if conditions are made favorable for them.

The first few hours of a chick's life is a very critical period. They can be very easily chilled, or overheated as the condition may be, when they are taken from the incubator. They need to be kept real warm, but when too many are crowded together they are apt to become overheated.

The fire should be started in the brooder at least twenty-four hours before the chicks are put in. The corners should be warmed up, and the thermometer should register 100. After the chicks are three are four days old, keep the temperature at 85 to 90. As they grow older they will need less heat. One can tell when they are comfortable by their action. If they huddle around the water tank, it is a sure indication that the brooder is not warmed throughout. If they are scattered over the brooder, scratching, and seemingly contented, you will know they are comfortable.

The brooder chicks must be carefully fed for the first few weeks. They should not be given any feed until they are thirty-six hours old, and fed only in small amounts several times a day. Every two hours is often enough to feed them.

Litter must be kept in the brooder to keep the chicks employed. If they are given nothing to do they soon become restless and almost frantic. The litter must be fine, clover, alfalfa chaff being about the best that can be used. This must be changed at least three times a week, and fresh litter put in. A layer of newspaper in bottom of brooder, and about an inch of dry dust or sand on top of this will keep the brooder more sanitary. The litter can be raked off the sand, with very little trouble, and the brooder will not be soiled. Fresh sand must be supplied as often as it becomes necessary to keep it clean.

When chicks are fed anything except dry grains, it should be fed on a paper, and the paper removed as soon as they are through. The chick feed may be scattered in the litter and the chicks will spend many busy hours hunting for it. The litter must not be coarse or very deep, or it will tire the little fellows to scratch in it.

Everything must be kept clean about the brooder. When the weather will permit, the lid of brooder should be raised to let the chicks have the fresh air and sunshine. They will do so much better than when they are kept in dark quarters. Even in very cold weather the lid can be raised several times a day for a short time without injuring the chicks.

Keeping clean drinking water in the brooder is often a difficult problem, when litter is kept for them to scratch in. They soon fill the trough up with litter if it is kept on it. If a thick paper is spread down, several times larger than the trough and the water kept on this, they will not get much trash in the water. Sand and fine oyster shell should be kept in a small box where they will have access to it.

We have had best results with brooder chicks, by starting them off on boiled eggs and stale bread crumbs until they are four or five days old. They are them fed rolled oats and a small amount of commercial chick feed. After they are ten days old, we feed a liberal feed of chick feed three times a day in litter, and keep a mixture of sifted bran, meat scrap, corn meal and charcoal where they can have all they want of it. We sift it all feeding only the fines part until they are three weeks old. One teaspoonful of meat scrap is sufficient for a dozen chicks.

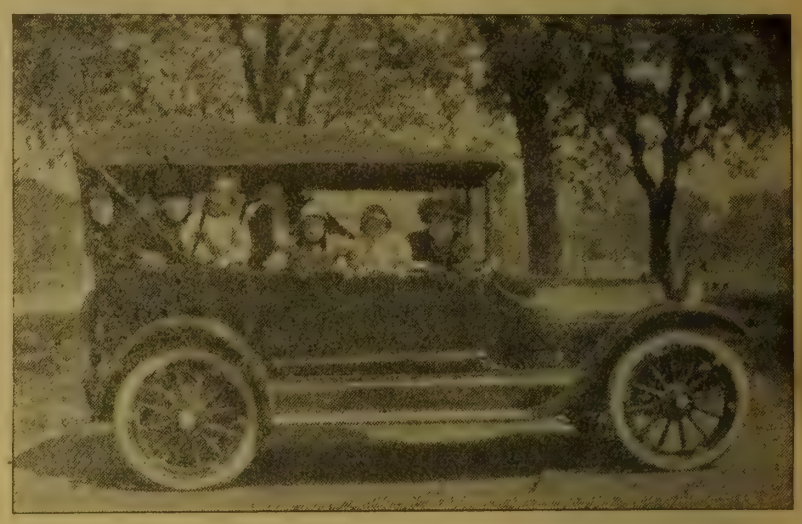
When the chicks are kept in the brooder without plenty of ventilation dampness is apt to rise in the corners, and if this is not discovered at once it is apt to cause leg weakness in the chicks. After the chicks are a week old, the lid should be raised slightly at night to prevent this. After they are a few days old they will need a small run where they can go out and exercise but will soon learn to go back in the brooder to warm. Chicks should never be kept in the brooder longer than four or five weeks. By that time, they will have sufficient size to the transferred to boxes and turn the brooder over to the next hatch.

$725 Buys It!

A GREAT BARGAIN IF YOU ACT QUICKLY

Studebaker—SEVEN Passenger—1917 Model
40 Horse Power—Four Cylinder— DELIVERED TO YOUR HOME

Same Model Sells Now at $1,140 F. O. B. Salt Lake.
With same equipment would cost $1,275.



THIS IS AN ACTUAL PHOTOGRAPH OF THE CAR
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Here's a genuine bargain for the man who wants a family touring car or one to use for business. It is not a new car. It has been used by one of the managers of a large firm who has given it good care and kept it in fine condition. A business change makes the use of the car unnecessary. So now its to be sold and and that without delay. Terms to responsible parties if desired.

It is fully equipped—five tires, (four of them non-kid tread, two are cord tires) complete set of tools, jack, new pump, top cover and extra rim. My business takes me all over Utah so if you live in this State I will bring the car to your home, demonstrate it, show you what it will do and teach you to drive it. That's fair isn't it? If you want it write today because this kind of a proposition won't keep. First come—First served.

JOHN D. GILES, 156 Fourth Avenue
Salt Lake City

GETTING GOOD HATCHES

One of the most perplexing and vexing problems the beginner in poultry raising has to contend with is the finding of so many unhatched eggs at hatching time in which the chicks are fully developed but have failed to emerge from the shell. If one could prevent these losses the profit and pleasure of poultry raising would be greatly enhanced. While we cannot entirely prevent these losses we can by proper care, mitigate them to a great extent.

Poultrymen have different opinions in regard to the cause of dead chicks in the shell. Some claim it is the direct result of weak germs, caused by using breeding stock of low vitality or by too-close inbreeding. This is, in my opinion, partly, but not wholly the cause. Improper selection and care of the eggs used for hatching are also a contributing factor. Improper care of the eggs while holding them for incubation will affect the vitality or "livability" of the germ, that is certain. While the germ still possesses enough vitality to start growth, it eventually will die. Better so, however, than to hatch chicks with barely enough strength to break through the shell, and which, if raised, will be anything but a source of profit and pleasure.

Handle the eggs intended for incubation carefully. Do not store them or allow them to remain where they will become chilled. It doesn't take long for an egg to become chilled to such an extent as to render it unfit for hatching purposes. Another thing, also, is to be avoided, that of overheating. Exposing to warm temperature for a short time will start incubation, and then if the eggs are kept for a time before setting they will rot.

The temperature and ventilation of the room in which the eggs are stored until wanted for incubation should also be taken into consideration. Too often we find it the case where the eggs are kept in damp, musty illy ventilated cellars. This must be avoided. The poisonous air in such cellars will surely weaken the vitality of the germs in the eggs and lessen their chances of hatching. The room in which the eggs are kept, should be well ventilated. Never keep them in a room in which you would not care to live. The temperature should not vary to a great extent. Extremes in temperature will also affect the germ life of the eggs. I consider 50 to 60 degrees F. the proper temperature. Do not have the temperature too warm as this will draw the moisture from the eggs and cause them to dry out too rapidly. This would result also in causing a toughening of the membrane of the shell and lessen the chicks' chances of picking their way out. Cover the eggs with a cloth to prevent evaporation of the moisture in the shell. Do not place them in a draft or where the sun will shine directly on them.

The temperature and ventliation of the incubator also plays an important part in preventing the chicks from dying in the shell. Very little ventilation is required he first week of incubation. This will be apparent by observing how closely the hen covers the eggs the first week. She leaves the nest only a few times and then for short periods, only. Therefore, do not allow the eggs to remain out of the machine very long the first week. As the hatch progresses more ventilation should be provided. The eggs should also remain out of the machine for longer periods. This cooling and airing of the eggs is continued until the eighteenth or nineteenth day. Cooling and airing is absolutely necessary as it is a positive means of strengthening the chicks in the shell.

The eggs must be supplied with a proper amount of moisture. Unless this is done the shell will become dry and tough. A good practice, and one that I usually follow, is to wring a cloth out of warm water and lay over the eggs. This is done on the eighteenth day and is allowed to remain on the eggs in the machine about ten minutes. This will tend to soften the shell and the chicks will have no difficulty in picking their way out.—O. E. Hackman.

DRY, FRESH AIR FOR POULTRY

L. R. Jones.

Keeping hens in fresh, reasonably dry air is one of the secrets of keeping them successfully. In the henhouse good ventilation and dryness are so essential that the most skillful breeding, feeding and rearing cannot make up for their lack. It is difficult to secure dryness without a generous amount of fresh air.

There has been in recent years a marked tendency in poultry house construction toward securing more fresh air, both day and night, by replacing the glass windows with cloth or muslin or by making the front either of muslin or entirely open. Fresh air is one of the prime essentials in poultry houses, and warmth secured by keeping the house shut up tightly is not as desirable at a lower temperature and some ventilation.

The front of the house should be so high that the windows or openings will allow the sun to shine well back into the interior during the winter. Burlap, unbleached muslin or lightweight duck cloth may be used for curtains in the front. This cloth should be thin enough to allow a slow circulation of air without draft.

A large amount of glass in the front of the house makes it warm during the day, but cold at night, as glass radiates heat very rapidly. Some glass, however, is helpful in providing light when the curtains are closed. Some ventilation should be given in a poultry house even on the coldest night. It is usually best secured by leaving a small window open or having muslin curtains in the house. If the house is shut up tightly without any muslin curtains in the front there is a tendency for moisture to collect in the house and condense on the rafters and other woodwork on frosty mornings.

It is not necessary to close the muslin curtains in the front of the house except in very cold or stormy weather. Hens are protected by nature with warm feathers and a high body temperature so that they are better able to withstand dry, cold air than warmer air which is damp. You can make up your mind that a hen appreciates dry, clean and sunny quarters as much in the wintertime as you do. What a hen very much dislikes is a draft, no matter how little it is. Therefore, make provisions accordingly.

During the daytime when a hen can exercise she prefers it cool, even cold, as long as it is dry and sunny and free from drafts. You can imagine how much a hen feels like working, singing, and laying in a house with clean surroundings, deep litter, dry interior, free from drafts, yet plenty of fresh air with the sun shining on her back.

She feels as though she was really living, she is comfortable and feels at home, she is happy and contented and shows her appreciation by filling the egg basket. Across from her is her companion confined in a small unsanitary, dark, gloomy, damp, close dungeon. She sits on the roosts most of the time, except for about a few minutes at feeding times, she is dull, sick, cast down and walks about in an indifferent way, careless as to whether she lives or not. You do not notice her digging in the litter very much, singing and walking about in a happy and contented way.

Instead she stays up on the roosts in a humped up kind of dormant way until spring comes along with its longer days and sunshine. Then all at once she sums up her spirits, starts to exercising, singing and laying. Why does she do this? Because her owner by this time sees fit to let her outside into the sunshine and fresh air. It is needless to say that before very long she starts to laying.

All your hens ask for in winter is protection on three sides, east, west and north. A hen dislikes a draft, consequently it is important that these ends be as nearly air tight as possible. Endeavor to keep the temperature of the house as uniform as possible and the result will be that your hens will be comfortable and laying throughout the winter.

A SCHOOLGIRL'S LETTER

"It was only a little river, almost a brook; it was called the Yser. One could talk from one side to the other without raising one's voice, and the birds could fly over it with one sweep of their wings. And on the two banks there were millions of men, the one turned toward the other, eye to eye. But the distance which separated them was greater than the stars in the sky; it was the distance which separates right from injustice.

"The ocean is so vast that the seagulls do not dare to cross it. During seven days and seven nights the great steamships of America, going at full speed, drive through the deep waters before the lighthouses of France come into view; but from one side to the other hearts are touching."—Letter of a French Schoolgirl.

CAUGHT IN THE DRIFT

"My sister's feller kicked my dog yesterday," said Willie, "but I'll get even with him, all right."

"How'll you get even?" asked Willie's friend.

"I'm going to mix quinine," said Willie, "with my sister's lip rouge."

FOR SALE

Big type Poland China Pigs. By the great herd Boar, Utah Pat, who was sired by Jumbo Sampson. The best blood to be obtained.

H. G. JOHNSON
East Garland Utah

Registered Duroc Jersey Hogs.

Some good spring litters. Richard Defende rand Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.

ERIK W. OLSEN
Virginia Idaho

BABY CHICKS—BABY CHICKS

White Leghorns, Brown Leghorns, $12.00 per 100.
R. I. Reds, $15.00 per 100.

ORLAND HATCHERY
Orland, Glenn County, California.

WE WANT FARM LANDS

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SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

LUMBER, lath, millwork. Get our direct-to-consumer prices before building. Calalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

DUROC JERSEY PIGS

Increase your profits by improving your stock.

Buy registered spring pigs now from

JAMES W. BLAIN
Spring City Utah

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.

Richards Live Stock Co.
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Home of the Champion Durocs.

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
Wellington Utah

BABY chicks; eggs for hatching; all varieties. I make deliveries every Thursday for Utah, Idaho, Nevada and Wyoming. Safe delivery guaranteed. No order too large or too small. Write or wire for prices, etc., W. O. Ramshaw, 2415 5th East, Salt Lake City.

DAY OLD CHIX

Wise economy is quality not price, we sell cheap when quality is the main consideration.

ARCADY PLACE HENNERY

is prepared to handle orders large or small. shoot your enquiries for prices. Demand will be greater than ever. Order early.

A. T. SMURTHWAITE
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Black Diamond Dehorning Pencil.

Every pencil will dehorn 50 head from ten days to one month old for $1.00 Forfeit of $5.00 on any calf if it fails to dehorn.

J. H. SHAFER
Ogden Utah

ONION SETS

ON YOUR OWN TERMS.
PLANT NOW FOR WINTER ONIONS.

This is the year to plant for profit only one half usual acreage already planted. We have a limited quantity of good sound sets which we will sell at bed rock prices and if necessary accept payment after harvest.

As you know sets planted now will produce a splendid crop of winter onions at one half the labor cost of those planted from seed.

HERE IS YOUR CHANCE.
GET BUSY TODAY.

Porter-Walton Co.

SALT LAKE.

CARE OF BROOD MARES

(Continued from page 13)

frisky. When turned out together, after being kept apart for some time, somebody usually gets hurt.

Our best results have been with mares that were kept at light work up until a few days before foaling. Heavy loads, slippery roads and careless drivers must be avoided. Drives to town will do no harm, but the driver must be reasonable, and not expect the mare to trot too much. When in driving harness be careful not to buckle the girth too tight, as it seems to cause the mare much discomfort. Also do not try to make the mare carry her head up high when working or driving by means of a short rein. These are apparently small matters, but anything that affords comfort will pay.

Drinking water should be pure and clean and in cold weather the water should be warmed by means of a tank heater just enough to take off the chill. We find that all horses will drink more water during winter, and be in better condition if water is given slightly warmed rather than ice cold. As for feeds, give as large variety of good feed as possible. Allow the mare to eat nothing that has mould on it, and keep the mare from the sight and smell of blood, and from excitment of any sort to avoid miscarriage.

For rough feed it is well to have on hand a number of different kinds, if possible, to admit changing it occasionally. Good, clean timothy, clover or mixed hay, or alfalfa; or clean, bright corn fodder may be given, changing occasionally that the mare's appetite may remain good for all of them. This is an excellent plan of winter feeding for other horses, as well as brood mares. For grain feeds it is also well to avoid, if possible, feeding only one kind. I believe a well-balanced grain ration will be found in giving two quarts of oats in the morning, three large ears of corn at noon, and two quarts of wheat bran at night, slightly salted. If the mare is a poor feeder or is in poor flesh more may be given. If she shows a tendency to get too fat, feed less. It is a mistake to suppose that brood mares must be kept in more than average flesh.

A record should always be kept of the date on which the mare is bred, so that the keeper may be on hand when the colt is due to arrive. Try to be there at the right time even if it does cost the loss of some sleep. The colt, and many times both the mare and colt, are often lost that might have been saved had the owner been there at the proper time. Keep cool when the symptoms of foaling come on, and do not offer any assistance until the front feet and head come into view. It is best not to meddle with the mare at all unless delivery is very difficult. Use only a very gentle straight pull, and do so only at the proper times. If any difficulties arise as malpresentation, or an abnormally large colt, send for a veterinarian at once. Also if the afterbirth is retained for more than five hours after the birth of the colt call a veterinarian and have it removed.

After the colt has arrived dry him by rubbing gently with a burlap sack, and assist him in his efforts to stand but do not urge him to rise until he shows a desire to do so. Also do not compel the mother to get up soon after foaling, as she is badly in need of rest just at this time. If the navel cord is not severed by the act of foaling it should be severed with a sharp knife about two inches below the navel. Some breeders prefer to tie the cord with a string close to the navel. I have seen this done many times, and have also often seen it left undone and I am not able to say that there is any great advantage in it. Veterinarians, as a rule, rather discourage the practice. When it is used both the knife and string should be dipped in a good disinfectant.

Just a word about re-breeding the mare. A good many farmers think it is well to breed on the ninth day after foaling. It seems to me that this is a bad practice. There is no reason why it would not be just as well to wait until the twenty-eighth day, and there will be much less risk of injury to the mare. At nine days it often occurs that the mare has not sufficiently recovered from foaling to make it safe to breed this soon. In our own neighborhood I know of several mares that have died soon after being bred on the ninth day. That, it seems, could not have been caused by anything else. Of course, many mares are bred on the ninth day without bad results, but I believe it is taking more of a risk than is profitable—Daniel Prowant.

---o---

FATE'S VICTIM

Lady Visitor—How did you become such a crook, my poor man?

Convict—I was crossed in love, lady.

DREADNAUGHT TIRES

DREADNAUGHT BATTLESHIPS are the most powerful afloat. Dreadnaught Tires are the most rugged, durable and best withstand the relentless pounding of the road.

GUARANTEED 5,000 MILES

Dreadnaught Red "Silent" *Vacuum* Tread is a positive anti-skid. The bar through center of cups minimizes friction, road drag and that unpleasant humming noise. Dreadnaught Red *Ribbed* Tread makes steering easy and successfully supplants the old-fashioned plain tread.

Strevell-Paterson Hardware Co.

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Hardware—Auto Accessories
Salt Lake City, Utah.
Sold by dealers in every town.

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BETTER THAN BEER

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If your dealer hasn't BECCO---order direct from

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIV; No. 44 LEHI AND SALT LAKE CITY, UTAH. JUNE 1, 1918

BEST THREE BULLS NATIONAL S HORTHORN CONGRESS SHOW.
WHAT UTAH NEEDS IS MORE AND BETTER LIVESTOCK.

The Feed Value of Sugar Beet Tops

According to promise we are resenting here some information on e value of beet tops for feeding cat- e. More of our farmers should be eding cattle, more of them can be when beet tops can be used as these en have done. Mr. Hyrum Timothy ho writes the first letter formerly ved in Utah and knows our conditions d he says that we can duplicate hat they are doing in Colorado. This important to every beet grower, u can have two crops each year one beets, one of cattle. If any of our aders want to ask questions about is subject do not be afraid to send em in.

May 16, 1918.

r. W. D. Lippitt, Gen. Agriculturist,
The Great Western Sugar Co.,
Denver, Colorado.

y Dear Mr. Lippitt:

Last November you and Mr. Hendle- n requested me to write my experi- ce about feeding cattle and sheep siloed beet tops, and to give you y idea of the value of siloed beet ps in relation to other foods for fat- ning cattle and sheep.

Enclosed find letter from Mr. Geo. Bedford and Son of Greeley, Colo., d a letter from Mr. Virge Timothy Peckham, Colo., who has had some perience feeding siloed beet tops, hich I think is very valuable infor- ation for the farming public. It rries with it the information that a eat many farmers are looking for ollars and cents) and the proper y of utilizing in the best way possible the products of a beet crop.

It is admitted, without argument, by the business men and farmers of this country that $10.00 flat for beets delivered at our factory or stations is a good price for sugar beets compared with other crops; and, especially when you take into consideration, hail storms and other pests and diseases that affect crops in this section—all of which do not affect a beet crop to any great extent.

What I wanted to say was, that the tops, pulp and syrup from one acre, or from a ton of beets, properly cared for and properly fed for producing beef at the present prices of feed and beef is worth to any average farmer more money than he receives for his beets at $10.00 per ton. Now, I will prove the above statement with facts and figures so that any farmer can plainly see where he has been making a great mistake in not taking care of his beet tops by siloing them, by digging a hole in the ground.

Virge Timothy in the year 1917 raised 30 acres of beets on his farm at Peckham, Colo. The books of the Sugar company show that they paid him for 30 acres of beets $3,105.00, a fraction over $103.50 per acre for beets, which was a good price for beets and a good return for the use of the land after paying for labor on said beets. The hand labor on these beets cost $20.00 per acre, such as bunching, thinning, and hoeing three times during the growing season, pulling, piling and topping the beets at harvest time. As I said before, Mr. Timothy received:

Gross check	$3,105.00
Labor—30 acres @ $20	600.00
	2505.00

This is very good money for the operation of one year on 30 acres of land, leaving the land in first-class condition for beets or other crops. The above figures do not show the team work on this crop, such as plowing, harrowing, levelling, culivating, irrigating, plowing beets out, and hauling to station. I will say, however, that no one can deny there was good easy money made in the operation of the 30 acres.

These beets on this thirty acres of land grew tops or foilage and on November the 12th, Virge Timothy dug a silo 10 feet wide, 35 feet long and 5 feet deep, and hauled his beet tops into this silo; tramped them down solid with horses and made beet top ensilage which is one of the most desirable feed for fattening purposes that can be found anywhere. They are the cheapest feed on the market, especially for the farmer who raises beets. They do not cost the farmer anything, but the labor to silo them, and one man and team can haul and silo 15 to 25 tons per day.

On December 1st Virge Timothy bought 50 head of steers. The average weight when put on feed was 970 pounds and cost delivered 10 cents per pound or $97.00 per head, a total of $4,850.00. He fed them 45 tons of hay and practically all the siloed beet tops, as he only had fifteen head of ewes and lambs, four cows and few pigs that were fed on beet ensilage besides his fifty head of steers. These steers were shipped to Denver, sold and weighed, on an average, 1120 pounds. They brought $14.50 per hundred or $162.40 per head, a total of $8,120.00, or a gross profit of $3,270.00.

The steers ate 45 tons of hay that was raised on the farm at $17.00 per ton or $765.00. This deducted from:

Gross check	$3,270.00
45 Tons Hay	765.00
Profit on steers	$2,505.00

He received for his own hay $17.00 per ton or $765.00. For argument's sake, say that there was no more expense to this transaction. There was not a great deal, as all feeders will admit, as these steers did not eat anything but siloed beet tops and hay. With a gross profit of $3,270.00 on 50 head of steers, deducting $17.00 per ton for 45 tons of your own hay, or $765.00, leaves $2,505.00 for our 30 acres of siloed beet tops or $83.33 per acre. These figures in regard to the purchase of steers, weight bought, price paid, weight sold and price received is a matter of record and are as stated above.

Now, I think I can show that my statement is correct when I said that the beet tops, pulp and syrup from a ton of beets or an acre of beets were worth more to the farmer for feeding

(Continued on page 5)

Greater Production Per Man

An Ever-Increasing Number of Farm Tractors Must Be Used to Meet This Demand.

V. A. Place.

Changes are coming thick and fast in American agriculture. Most of these changes are economically sound and our agriculture will be materially benefited therefrom. War conditions have been responsible for the speeding up of our entire agricultural program to the extent that years of progress have come in just a few months.

Perhaps there is nothing on the entire agricultural horizon today that is receiving more attention from the American farmer than the tractor. Many factors combine to make this condition as it is. All industries are calling for the men who once were used in doing a part of the farm work. Added to this, is the greater call that is taking many of the boys away from the farm and placing them where their work is unproductive, so far as the growing of crops is concerned. In the face of this labor shortage, the American farmer is called upon by his government to produce more food for human consumption than during normal times. This call comes at a time when feeds are high and relatively scarce so that not many farmers care to or can increase their farm power by means of horses or mules. For this reason, they are studying the tractor.

Production Per Man.

In 1918 and the years that follow while the war continues, our farmers must produce more per man while they maintain or increase their normal per acre production. This departure from usual conditions will call for a readjustment of farm management operations to the extent that one man must handle a greater number of acres. There can be no other solution for this matter if the crops are to be produced, and we know they will be produced, and in greater amounts, too, than ever before. Our farmers have always been noted for taking hold of labor-saving farm machinery in a better way than the farmers of older agricultural countries. They will see (if they have not already) that the right tractor will go a long way next year toward helping out this "more per man" production, for which the demand is continually increasing.

The tractor is like the automobile in that it has no nervous or muscular sysem to tire. The number of hours of continuous work which it may do are limited only by the endurance of the operator. It is different with horses. The horse must be worked judiciously so that his energies will be conserved for the efforts of other days. There will be times next year when machinery should be run almost day and night. It is true this may be done with horses, but it will require double the number of horses ordinarily kept on the farm, and we know this condition cannot prevail for just a few days at a time. In other words, the farmer who has a tractor this year is going to be able to put forth that "extra effort" when it should be put forth at times and for this extra effort be mighty well paid.

Fast Work Makes Money.

As an example of how this extra effort may be of great benefit, we will take an actual case of one farmer who makes the most of his opportunities. He owns a handy-sized tractor. In the spring of 1916 when the weather was not favorable for getting in the corn crop, he saw that he would be late in planting his crop unless something strenuous was done. He put the proposition before the hired man and it was decided that they would work by shifts, night after night and run until midnight. This was done and the corn crop put in in time so that this fall he has less soft corn in proportion than most of his neighbors. Here the extra effort paid big and the few dollars extra which were added to the hired man's check at the end of the month were returned an hundred fold. Numberless other examples of similar nature might be given such as saving grain which is ready to shatter, mowing hay, etc. All users of tractors are able to give examples of the times when their tractor helped wonderfully in just such emergencies.

Speed is entering every department of war work. Speed will be necessary if extra good ground is to be gained in crop production. The tractor with plenty of speed will mean the saving of many hours which may be used in other production work. When taken in its last analysis, the chief use of the tractor, under present condition, is for speed. It enables the farmer to speed up his farming operations to the extent that he gets more crops put out, gets them out at the right time, and in the right way.

Hired Help Will Be Scarcer.

This year another call will go out for more wheat. The acreage of wheat seeded this year was large. It should be so again next year. However, there will be fewer men to prepare the ground next year and again we may not have such a favorable season as this one was for getting ground prepared.

The tractor manufacturers might do a great deal to assist the farmer in selecting the tractor best fitted for his particular work. In the past, too much attention has been given to some little "talking points" that have not a great value to the farmer. A medium-weight tractor capable of pulling three plows has been found to be about the right size for the general farmer. This size of tractor may be put to many jobs on the farm which could not be done at all by a very small machine) and which could not de done economically by the very very large tractor.

Practicaly every farmer who considers buying a tractor will compare it with his present source of farm power. This he should do. The farm horse is far from displaced and it will be a long time before we can do without him entirely, doubtless never, but just now we are talking an emergency proposition—a war measure which will enable the American farmer to produce more per man while the war continues. The up-to-date tractor with a weight of a ton and a half will pull three 14-inch plows at a depth of seven to eight inches at a speed of about two and one-half miles per hour. In one mile there are 5,280 lineal feet. One bottom turning 14 inches of soil in cutting one mile will turn 6,160 square feet. At the speed of two and one-half miles per hour, the amount of ground turned by one plow in one hour will be 15,400 square feet, .35 of an acre, or at the rate of three and one-half acres per day. Using three plows, one man would be able to plow 10½ acres per day. The average cost of operating a tractor of this size will average one and one-half gallons of gas per acre or 15 gallons for ten acres at a cost of about $3.25. Lubricating oil will cost about 75 cents and driver $2.50 to $3. The man who owns teams or who may be considering buying teams or a tractor knows that it would take nine horses and three men to do the work of one tractor and one man. The nine horses would certainly cost as much as the tractor and the daily operating epense of the tractor would be much less. Under present war conditions, the three men will be hard to secure. A part of the feed which might be eaten by the teams, may be saved for human consumption and the remainder may be used to produce meats and fats. Just what the cost of feeding these teams will be is hard to determine at this time, but we know that feeds are to continue high in price.

Another factor, too, which needs consideration is the year-round feed bill of the horses. Figures show that a farm horse averages working only about three hours per day throughout the year. If this is true he is using considerable of his earnings to furnish feed to maintain him in working condition. It is quite true that on larger, better managed, livestock farms the teams are worked more than this average number of hours per day. But we know that these specialized livestock farms are the exception in each locality. The great work for their horses throughout many weeks of the year, yet these horses must eat something every day. This the tractor does not do when it is idle.

An Economic Necessity.

I do not care to leave the impression that I am one of the radicals who believes that the tractor should be used on every farm regardless of size or conditions. Such argument comes only from those who fail to weigh the merits of tractors against those of teams. However, we must realize that as our agriculture becomes more highly developed and our national population much increased, we must use less and less of our food products for power purposes and an increased proportion of them for food purposes. In other words, we will be forced to keep fewer horses because we must feed more people. To feed this extra number of people, greater crops must be produced. More people can be fed from grains than from the animal products which might come from feeding those grains to livestock to produce meats. Therefore, we are gradually coming to that point where the tractor of some successful type becomes an economic necessity whether we desire it or not.

Now in summing up the arguments for the tractor, we find that present conditions argue strongly for an increased number of tractors on the farms in this country. In the first place, we are short on man power to operate our farms as they have been run previously. In the second place, the tractor may be used so many times in an emergency on the farm to put in extra hours which pay extra wages for the effort. This enables the farmer to get things done in the best way at the time they should be done. Thirdly, many jobs about the farm may be done with the tractor which ordinarily call for considerable cash outlay or they go undone. Such work as buzzing wood, grinding feed, etc., come under this class. In the fourth place, if tractors displace a part of the horse power, the feeds which the horses would have eaten may be used to make meat and fats or a part of the grain may be used for human consumpton. In addition to these arguments, we have the blanket argument covering them all, namely, the tractor will enable the farmers of this country to produce more food per man while this great conflict continues and after it has ended.

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Community and Home Canning

By J. O. Ellsworth, County Agricultu ral Agent, Gooding, Idaho.

The role the United States must play in the present crisis demands of every man, woman and child to do their bit in the conservation and preservation of every food product possible. "Save the crops and stop the waste," says Hoover. This call comes to us in the harvest season, when millions of dollars worth of fruits and vegetables are wasting.

Govermnent experts estimate that over 50 per cent of the natural products of the average orchard and garden are actually lost for food to American homes, for want of some simple method of taking care of the surplus. In Idaho and other western states increasing production of fruits and vegetables tends to make this percentage of loss even greater. To conserve this economic waste and to make the surplus food of autumn available in time of need, is the question of greatest moment to food conservationists today.

How to increase production has been the subject to publicist for centuries. Only last spring our own national slogan was the war garden, with a concentrated effort to make two plants grow where but one grew last year, two bushels of tomatoes where but one in the past, and the same of all other agricultural products. The patriotic citizens of America responded with the 1917 yield of the perishable garden products, surpassing any production of past years. Harvest time found our household containers filled and millions of dollars worth of vegetables on our hands.

An example of this condition may be found in almost any newspaper during the harvest season. You will invariably find something similar to this: 10,000 crates of strawberries were unloaded yesterday on a crowded market. Most of these 10,000 crates sold for 40 cents a crate. It cost 30 cents to pick the berries, 5 cents for drayage, 5 cents for freight, 16 cents for crate and 4 cents commission, making a total of 60 cents per crate. Every one interested obtained his portion except the grower.

Similar incidents as this occur every year in certain parts of the country and our increased yield this year together with decreased transportation facilities, have only magnified the tremendous losses of perishable foods. In the past if a crop yield is large, the markets were invariably glutted and when the yield was short the grower also lost money. In either case he always came out of the small end of the horn.

The problem of marketing products on a profitable basis is of vital importance to every grower. Think of the millions of dollars worth of perishable fruits and vegetables allowed to rot on the ground because of crowded markets, together with a shortage of iced cars at the ripening season. Reports shows that upwards of five million dollars were lost last year, and there is no doubt but what this could have been turned into a handsome profit, had the growers canned their surplus when the conditions were bad. Think of the thousands of starving souls this vast amount of food would have saved from a painful death.

The Community or Home Cannery is the only real solution of this great question. Up until ten years ago, when the manufacture of the small steam pressure-outfits commenced, the canning industry was confined almost exclusively to large commercial enterprises. They always paid big dividends to their stockholders and the public never took the time to wonder why.

At the present there are about five thousand such factories in successful operation. Their annual dividends range from ten to fifty per cent. They are, to be sure, an important industry in their respective localities, furnishing a market with a small profit to the growers, whose fruits and vegetables they purchase. Is it not logical to think that if all these large canneries with their one hundred thousand dollar machinery, their one hundred horse power steam boilers supplying five thousand can capacity retorts, are making good profits, that the grower can increase his income by having access to a small inexpensive home or community conserver in the form of an up-to-date Steam-pressure Canner? Such a plan not only adds profit to the producer, but what is of far greater importance today, is the conservaton and preservation of the immense quantity of food so much needed if American soldiers are to be fed.

In the construction of the small canneries, the manufacturers have followed out the principles of canning used today by 99 percent of all the large plants, i.e. Steam Under Pressure. All varieties of fruits, vegetables and meats canned "The Steam Pressure Way" will keep indefinitely. They no longer represent a perishable article that must be quickly disposed of, whether the market is right or not, but one which will stand time and transit.

The Food Administration has organized its department of canned goods. Mr. Hoover has called together representatives of all the industries which in any form have to do with our canning business. Sources of cans, boxes and seeds of the staple vegetables such a corn, peas and tomatoes have been found and with all this the producer is assured of his fair profit.

In addition to this service and assurance of help to the small canner, we have available the National Canners' Association, an organization of over 3,000 of the largest canners in America, which has for many years maintained extensive experimental laboratories in Washington, where a constant study of better methods of food preservation have been made. This large force of food specialists have volunteered their services to the cause of the war, and the advice of the best men and women in the nation is now obtainable in helping conserve our food supply through the community and home cannery.

The old prejudice against canned goods as being a inferior quality is fast disappearing, and is being replaced by the knowledge that canning is the only way of preserving the delicate flavor and food values of perishable foods.

General Sharpe, Quartermaster-General of the United States Army, attributes the success of our troops in the Philippines to the large amount of canned goods used. The same is true of conditions at the Isthmus during the construction of the great canal. Today most of the food used in sanitariums and hospitals and by the allied soldiers comes from the can.

The process of canning is quite simple. Anyone with average intelligence can make a success of it. It is simply a matter of preparing the fresh fruits and vegetables, the kind and quality you would like to eat, put it into cans, sealing them and cook for the required length of time to insure complete sterilization. The flavor and color is all retained by canning with steam under pressure. None of it boils away in steam. The product taken from the can can never be better than that put into it. If inferior food is canned the product is sure to be unsatisfactory.

Decayed fruits and vegetables make rich soil, but not rich farmers. It is

(Continued on page 11)

Modern Methods Will Help

Robert Kerren.

Our responsibility in this great war is known better today and realized more than a year ago. We have learned the need of producing more, if ever America puts its hand to the plow in its effort to feed the world, it has assumed that responsibility now. Not since the harrowing days following our own great civil strife of the sixties have the tillable acres of this country faced such a possible drain upon their bountifulness. Without even dimly prophesying the duration of the war now raging, we are already assured of the fact that next year this country will be the storehouse of the world. Every farm owner, every tenant and every share-worker will have his part to play in meeting this great responsibility. No matter how remote his residence, he will hear Europe's call for beef, bacon, beans, sugar and bread, and on the amount he has to sell will depend not only his satisfaction of having served his fellow men but the additional consolation of having served himself; for big crops, much stock, many hogs will mean big profits.

It is thus that the American farmer works with two strings to his bow. With one hand he is rescuing the perishing and with the other he is reaching out for tangible encouragement toward a bank account and a better home. Now is his golden opportunity. There are two lines along which he should plan his work, but only one line along which he should work his plan. First, he should utilize every available part of his land and then he must strive to raise the average yield. There will be no danger of over-production. The man who has a big yield will find a big market. To get this yield means better farming.

Now is a good time to break away from some old-fashioned ideas about the moon; from some other old-fashioned ways of shallow plowing; and some old-fashioned carelessness in cultivating and some old-fashioned theories in regard to seeding. In those parts of the country in which fall plowing and seeding are done, the way the seed bed is made and the sowing is done will determine the acre yield next year more than the rainfall, hot winds or frosts. The farming of the future will have to be done by machinery. Oats and oil are in the throes of a little war of their own just the same as the human back once combatted with the reaper knife. This strife is rapidly becoming more acute because the already high price of horses is being accentuated every day by the number sold out of the country for cavalry mounts to be used abroad.

The drain upon the American horse supply will soon be such that wherever possible mechanical contrivances will have to be used to do their work Were we to begin at once, it will require five years to replenish the drain which the war has already made upon the horse supply of the world.

Modern machinery will help us solve this problem. The tractor is no longer an experiment it is a success, of course you will have trouble with it because people do not know how to run them. Other modern labor saving machinery is going to help the increased production. Better cultivation is going to be the results. No farmer can afford to over look this question. New methods of irrigation, of harvesting are all going to help.

The plant food contained in the soil is not inexhaustible as a comparison of crop yields of forty years ago and today will show, and this very fact should appeal so strongly to the land owner that he would exert every effort to maintain the fertility of his land. When one considers that the food supply of the nation must come from the lands already under cultivation and when one stops to consider how rapidly our population is increasing, then it is that the problem of land productivity becomes a question of vital importance to us. Not only that, but land at present is placed at such a high value that it is entirely beyond the rules of economy to allow it to decrease in productive ability.

A system of rotation must be practiced. Well planned and carried out, not made for two or three years but for a number of years. The kind and quality of land must be considered when the crops are considered. This rotation should include some leguminous crop as clover or alfalfa in order to supply the land with nitrogen. It is a generally known fact that land which produces the same crop year after year gradually loses its productive ability for that crop while normal yields can generally be maintained on land which is allowed to produce crops of a varying nature. The most valuable plantfood elements are found in greater abundance in the grain rather than in the straw or stalks of the plant, so if the grain is sold, just that much plant-food is removed, while if that much plant-food is removed, while if that same grain is fed to live stock, the major portion of the most important plant-food elements may be returned to the land in form of manure.

In connection with the rotation system, all material which has value as a fertilizer should be applied to the land. Farm yard manure, in many instances, is not utilized as it should be, and its value as a fertilizer is not known as it should be.

Increased production per acre is the modern way of farming and anything that will help to economically increase our production is what we are looking for.

DAIRYING

WAR TIME DAIRYING

J. H. Frandsen, University of Nebraska.

Article II.

Food Values of Dairy Produces.

We are getting away from the idea which formerly was prevalent among dietitians and chemists as well as among people in general, that all fats regardless of their source, yield only heat and energy when consumed by the animal or human body. Just recently investigators like Dr. Mendel of Yale and D. McCollum of John Hopkins have made discoveries of vital importance in regard to the value of the milk fats. They have found that unlike other fats, butterfat has the ability or power to produce growth after growth had ceased in young animals used in their experiments. In other words milk fat has been found to contain a vital principle necessary for growth and life itself.

In the light of their experiments and observations made upon young animals it is reasonable to suppose that as great or greater discrepancies would be found in the growth and general health of young children. Just how much or how little butterfat can be used and still maintain growth has not yet been determined, but enough has been proved to give the dairyman sure footing to his claim that butterfat is a better food than butter substitutes composed of vegetable oils and fats. And the dairyman's duty becomes the more imperative when he realizes that by increasing his herds, he will be able to supply economically the finest of all fats—the one without which normal growth in children does not take place, and the one which should be available to the weakened soldier and hard working civilian.

Milk.

In this connection it will be of especial interest to compare the food values of dairy products with other well known food products.

The following tables give some idea of the value of dairy products as food:

One Quart Milk—On Energy Basis. Equals:

8 eggs, 2 lbs. chicken, 0.79 lbs. sirloin steak, 7 oranges, 6.55 lbs tomatoes, 3.35 lbs. oysters ½ dozen bananas, 0.79 lbs. English walnuts, 3.5 lbs. asparagus, 0.76 lbs. fish.

Figuring this on a price basis (Lincoln prices for December 1, 1917), 1 quart of milk at 14 cents a quart is worth as much as 27 cents worth of eggs; 48 cents worth of chicken; 23 cents worth of sirloin steak; 24 cents worth of English walnuts; 22 cents worth of cabbage; $1.22 worth of asparagus; 82 cents worth of tomatoes; 23 cents worth of fish; 83 cents worth of oysters; 15 cents worth of bananas; 23 cents worth of oranges.

One Pound Butter—On Eenergy Basis. Equals:

3 loaves wheat bread.
11.6 lbs. (16 average size) potatoes.
40 lbs. lettuce.
3½ dozen eggs.
34.3 lbs. tomatoes.
34.3 pounds asparagus.
4 pounds sirloin steak.
8 quarts oysters.

Too many hesitate to buy butter when prices go up thinking of it largely as a luxury instead of a necessary article of food. For instance, but few know that a pound of butter yields almost as much energy as 4 pounds of sirloin steak.

One Pound Cheese—On Energy Basis. Equals:

2¼ pounds chicken.
4 pounds green peas.
18 eggs.
2.8 pounds fish
1.69 pounds sirloin.
4 pounds English walnuts.
4.1 pounds baked beans.
1.38 pounds cottage cheese.

One Quart Ice Cream (14.5 per cent fat) On Energy Basis Equals:

4.94 pounds black raspberries.
0.64 pounds caramels.
5.11 pounds bananas.
8.75 pounds strawberries.
3.58 pounds cocoa (prepared).
6.96 pounds apples.
0.69 pounds chocolate fudge.
3.42 pounds oyster stew.

Table 4 shows a comparison of ice cream with some food articles found in the desert class. Most people think of ice cream as a desert, to be eaten when one has had a full meal of meat and vegetables. As a matter of fact it has high food value and should be used as a part of a balanced meal instead of being needlessly consumed after a full meal as is so often the case.

Cottage Cheese.

Cottage cheese ranks higher as a meat substitute than almost any other dairy product; that is, it contains a larger percentage of protein or body building material than most meats, and has the advantage of being much less expensive.

The following table complied by the United States Dairy Division gives the protein value of one pound of cottage cheese as compared with that of meats of various kinds:

1.27 pounds sirloin steak.
1.37 pounds chuck rib beef.
1.46 pounds fresh ham.
1.58 pounds loin pork chop.
1.09 pounds round steak.
1.42 pounds fowl.
1.44 pounds smoked ham.
1.31 pounds hind leg lamb.
1.37 pounds breast of veal.

This table is particularly significant when one remembers the high prices of meats and the relatively low cost of cottage cheese. Furthermore cottage cheese may be made into a number of savory dishes in combination with vegetables to make it more agreeable to those who do not like it plain as ordinarily served.

Skim Milk.

Skimmilk which is often wasted or used solely as animal feed has a food value of great importance, and one to be taken into account when it is necessary to conserve carefully all food supplies. Among European peoples skimmilk is used as one of the chief sources of muscle building material.

Why Increase Production.

After having pointed out the food values of dairy products and their relative cheapness when compared with other food articles, which they can in large measure replace and release for export, let us see what must be done to keep up an ever-increasing supply of these products, in the face of the constantly mounting production costs.

Enough data on milk production has been gathered to prove conclusively that the dairy cow produces human food cheaper than any other animal on the farm; that no other animal can take the roughage, hay, grasses, corn fodder and corn silage and the by-products from our food factories and mills and in return give so much nourishing human food stuff. For example, it has been shown that one cow, if slaughtered will provide sufficient meat for two soldiers for one year, while the milk from the same cow will yield equivalent food material for twenty soldiers for one year. To show further the economy of the dairy cow, it is of interest to know that Katy Gerben, University of Nebraska dairy cow, has, in seven consecutive milking periods produced as much digestible food material as is contained in the carcasses of 47 steers. To this might be added the fact that she has raised seven calves whose value has not been computed. Also the fact should not be overlooked that dairying contributes in large measure to the direct beef output of the nation by the slaughter of superannuated dairy animals and the baby beef not needed for breeding purposes. Statistics tell us that practically all of Denmark's beef supply comes from this source. How large a per cent of our meat supply is furnished in this way, we have no figures to prove, but it is safe to say that it is large enough to count as an important factor at the present time.

AVOIDING DISEASES IN DAIRY COWS

One should start out keeping dairy cattle with the purpose of maintaining only cows that will more than pay for their keep and so be likely, by the use of a purebred sire of producing ancestry, to produce heifers that will be likely to yield more than did their dams. With this object in view, no calf, heifer, cow or bull should be bought "experimentally." Rather start with one proven cow than experiment with a number of unknown quantities. Heifer calves of high producing cows are a far safer investment than adult cows provided the quality of the sire is known. One cannot well build up a profitable herd from material tnat has proved unsuitable for someone else. If grown heifers or adult cows are bought they should invariably be about to calve or just have had calves, and the calves should be seen "alive and sucking," or accompanying their dams.

Too often the intending purchaser spends most of his time in analysing the cow's pedigree and studying her conformation. This is necessary work, to be sure, but it is absolutely imperative that the udder and teats should be carefully examined, and this often is neglected. First, look at the udder Suspect something wrong if a quarter is unnaturally red in color, too small or too large. Reject the cow if a big lump is seen high up at the rear of the udder. It probably indicates tuberculosis. Next use the nand to corroborate or disprove what the eye has noticed as suspicious. Sit down and handle every part of the udder. All of it should be spongy, elastic mammary gland tissue. None of it should be hard or tumorlike, indicating tuberculosis of a previous attack of mammtis (garget), which will be almost certain to recur. Then examine each teat and its contents in turn. One does not want extra teats, Siamese twin teats, those that are too small or too large, or ones that have false openings (fistulae), or that are covered with sores or warts, or that do not readily yield their milk. Also examine the fluid from each teat to make sure that it is normal milk, not bloody, blue, curdled, clotty, whey-like, pus-charged or bad smelling. The expert, too, will carefully examine the genital organs for symptoms of disease.—British Livestock Journal.

Wastes Not Wants Not

THE SHORT-CUT TO THE GRAIN SACK

IS FOUND RIGHT HERE

It Saves the Farmer's Thresh Bill

Ask for the Records Made

One Bushel of Grain Kept Out of the Stack is Worth 10 Bushels

that poor separation puts in. When a Red River Special makes money by re-threshing the straw that other makes are through with, it shows just the kind of work it does when first on the job.

Full sacks—empty stacks, that's Red River Special separation, and it is done the first time through.

It's the "Man Behind the Gun" that does the business by BEATING OUT the grain.

No buyer or user of threshing machinery is protecting his own best interests unless he is fully informed as to the Red River Special Line. Write the Nichols & Shepard Co., at Battle Creek, or any branch house, and a big catalog, with latest money-making developments for thresher-men will be sent you free.

The selection of the best is easy when you know the facts.

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines
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ROSS Low Speed Light Running **SILO FILLERS** Larger Capacity Less Power

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No Silo too High for The ROSS

Whatever your requirements are we have a size to suit, 4 H. P. and Larger.

We can show you The Ross will operate with Less Power and Less Speed and still produce Larger Capacity. Our selling plans make this possible.

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Buy now, Cost you Less. You can have the machine any time without Cash investment in full prior to Silo Filling Time.

THE E. W. ROSS CO., Box 144, Springfield, Ohio. 68 Years' Experience

Machinery and Repairs carried with Landes & Co., Salt Lake City, Utah.

Dry Farm Seed Corn

Mr. Strong of Box Elder County, Utah, experimented for 15 years with dryland flint corn, not only did Mr. Strong increase the yield over 100 per cent but he produced a cob only one-half as large as the old type White Flint. Mr. Strong developed a dryland corn of wonderful merit, a heavy yielder and remarkably early for DRY LAND cultivation, you will not be disappointed if you plant a good acreage of Strong's Dryland White Flint.

Order early as our Supply is limited.

Vogeler Seed Co.

SALT LAKE

THE FEED VALUE OF SUGAR BEET TOPS

(Continued from page 1)

purposes than the beets were worth to the farmer to sell to the Sugar Company. As I stated before, the beet tops brought $83.33 per acre, and in the beginning of this article I showed that the net profit for the 30 acres of beets was $2505.00, not counting the other expense of seed planting, plowing, and hauling beets to station.

If corn is worth $3.30 per hundred to feed steers, pulp is worth $6.60 per ton less the hauling of the pulp. One ton of pulp will put as much flesh on a steer as 200 pounds of corn; consequently, it must be worth as much, less the handling. Our experience with syrup has shown that one hundred pounds of syrup will put as much fat on a steer as a hundred pounds of corn. If this is true, and the feeders and farmers say it is true, then the syrup is worth as much as corn, or $3.30 per hundred.

Mr. Bedford and Mr. Timothy, who have gone through all the experiment stages of feeding siloed beet tops, say that a ton of properly siloed beet tops are worth as much to feed beef steers as a ton of well cured alfalfa hay. If this is true, and I believe it is, with pulp worth $6.60 per ton and syrup $3.30 per hundred, if you add them all together from a ton of beets, an acre of beets and the tops, syrup and pulp is worth more than the beets.

Another matter I want to mention is, the manure from these cattle. This goes back on the land to enrich the soil, which enables us to continue growing heavy crops year after year. The heavier the crop the less expense it takes to produce it. On Virge Timothy's feeding operations these fifty head of cattle made 310 loads of 110 bushels per load; he manured 28½ acres of land. If this operation is continued for a few years he will be producing almost double the crops that he has produced in the past with less expense, which will give him more than twice the returns per acre. This will make life worth living on the farm. A word as to how so much manure was made from 50 head of cattle. The secret is this: do not build your corral too large. This corral for 50 head of cattle was 70 ft. wide by 120 ft. long with plenty of straw.

Here are a few reasons why the farmers should raise sugar beets: First, because the people of this nation and the people of other nations need this sugar, and because it is the best paying crop on the farm. There are less chances to take on its destruction. There is more food value per acre for man than any other crop. There is more food value per acre for our animals than any other crop. It is time that the farmers and business men of the country will help in producing that which will do the greatest good to the greatest number. It is, also, time for the farmers to be educated along these lines of taking better care of the by-products of the farm. The conservation of food in the United States will be one, and the one big thing, that will be the cause of our victory in the World's War, for well fed nations never fail. The courage and stability of any nation depends largely upon their food supply. We should inform every farmer of these facts and teach them by raising beets that he will have a profitable crop for himself and produce what our people need and must have. By siloing his beet tops for feeding purposes he will have a profitable crop for himself and produce what our people need and must have. By siloing his beet tops for feeding purposes he will have a profitable winter crop and furnish meat for our soldiers. By proper rotation and proper application of manure from his feeding operation in a very short time these farms will be producing from one-third to one-half more per acre, with less expense to the grower. As the farms grow in yields they will grow in value and become more attractive, and to obtain this high standard farmers must be taught the true value of the by-products of the farm and the value of profitable summer and winter crop.

Yours truly,
H. TIMOTHY,
Agricultural Supt.

Greeley, Colo., May 14, 1918.

Dear Sir:

In regard to feeding beet tops would say that we have had considerable experience of this kind the last twelve years. But we never found the real value of them until the last two years. In this time we have been putting them in a large pit silo which we think is the only real way to get the value out of them. We believe one ton of tops properly siloed is worth almost if not altogether as much as a ton of alfalfa for feeding to cattle. Any farmer no difference the size of his beet field can cheaply make a pit and save all his tops and feed them at any time for there is no limit to the time they will keep.

We think this is a great feed for a farmer who is in limited circumstances. Also, think the time is at hand for the farmers to get busy and save such valuable feed as tops. We have been very successful in getting good gains on our cattle since we went to feeding them in this way.

Yours respectfully,
(Signed) Geo. S. Bedford & Son,
By Geo. S. Bedford.

Peckham, Colorado,
May 13, 1918.

Dear Sirs:

Following are the results of my feeding operations on siloed beet tops and alfalfa hay for 1917 and 1918:

I dug a pit silo on November 13th about 10 feet wide 35 feet long and 5 feet deep and put the tops from 30 acres of beets in this pit silo. I finished filling my silo with beet tops November 15th, packing as solid as possible by driving horses over the tops as they were being put in.

These tops were not put in fresh and green as they should have been, owing to the shortage of labor and horses on my farm, but remained in the field from the time of topping, which began October 3rd, and finished November 12th, or until the beets were all harvested, a period of forty days on part of my beet tops, and I estimate that I lost from 25% to 30% of the weight and value of these tops by exposure and shrinkage from drying out. I do not know the weight of my beet tops as it was impossible to weight them and silo them in time.

One December 1st I put 50 head of steers in my feed yard, weighing 970 pounds and were in good feeding condition. For the steers I paid ten cents per pound or $4,850.00 delivered in yard. I fed the steers my siloed tops in connection with 45 tons of alfalfa hay, making the steers weigh 1,120 pounds when they were shipped and selling at $14.60 per hundred with a gain of $3,270.00 in price over purchase price, or $8,120.00.

My feed yard is 120 feet by 70 feet which is hardly large enough for that many cattle, but by bedding heavily, I kept them dry and made 310 loads of manure which covered 28 acres of ground.

I think that one ton of properly siloed beet tops is worth as much for feeding cattle as one ton of alfalfa hay.

Yours truly,
(Signed) V. TIMOTHY.

HE HATED HIMSELF

Foreman to a laborer suffering from "that tired feeling," "What do you think you're paid for? Get on with your job or you'll be fired."

"All right, guv-nor; keep your hair on. Rome wasn't built in a day, you know."

"That may be rejoined the hustler, "but I wasn't foreman of that job."

The pig has stood abuses that would have exterminated any other farm animal.

WAR SAVINGS STAMPS DELIVERED TO YOUR HOME

Tear Out—Fill In—Hand Letter-Carrier—or Mail to Post Office

TO THE LOCAL POSTMASTER:—Kindly have letter-carrier deliver to me on _____ (Date) for which I will pay on delivery:

_____ (State number wanted) $5. U. S. WAR-SAVINGS STAMPS at $_____ (See prices below) each.

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W.S.S. WAR SAVINGS STAMPS ISSUED BY THE UNITED STATES GOVERNMENT

W. S. S. COST DURING 1918

April	$4.15	July	$4.18	Oct.	$4.21
May	4.16	Aug.	4.19	Nov.	4.22
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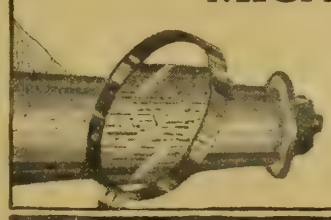
W. S. S. WORTH $5.00 JANUARY 1, 1923

ARE YOU LOOKING FOR TROUBLE?

It's easy to find. Look at your axle through a magnifying glass and see the tiny seams and pores which cause friction troubles. Use

MICA Axle Grease



on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating.

THE CONTINENTAL OIL CO.
(A Colorado Corporation)
Denver Pueblo Salt Lake City
Cheyenne Butte
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PAIGE SERVICE CAR

Will Travel Continuously From Logan to St. George---From Evanston, Wyo., to Ely, Nev.

Logan Sales and Service Co., Logan, Utah

W. H. Barnard, Brigham City

Acme Motor Car Co., Ogden

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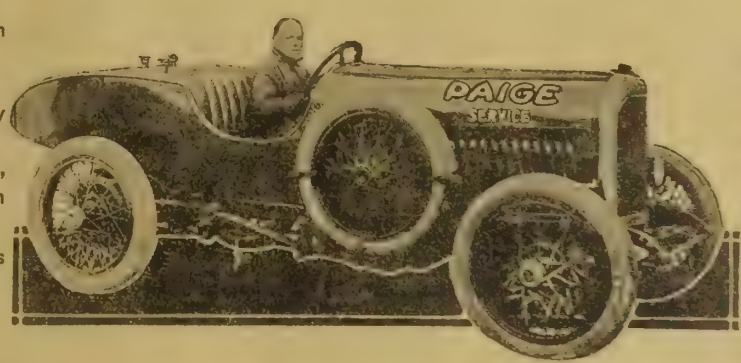


W. P. Preston, Ely, Nev.

Booth Mercantile Co., Midvale, Utah

Arrowhead Motor Co., Provo

Auto Lodge, Myton

W. N. Evans, Park City

N. Pope, Evanston, Wyo.

PAIGE MOTOR SALES CO. of UTAH
SALT LAKE CITY

FREE ADVICE IN PLENTY.

Oral Johnson.

The farmer and his wife, with the rest of the world, are so over whelmed now with good advice that we do not wonder that he is somewhat confused and a little impatient. From all sides he is receiving instructions how to conserve his soil, how to select his seed, how to drain land too wet and irrigate land too dry, how to plant and plow and prune, how to invest his money, how to raise his children, how to select his wife, how to buy his supplies, and how to vote.

All of this is well meant, some of it is applicable and valuable; but it seems to us there is a great deal too much fuss about it all. There have been no great discoveries that have altered the conditions of farm life in the past fifty years. It is through the accumulated experience of generation after generation that we get a deeper knowledge, a truer knowledge of the conditions of success on the farm. These lessons are to be taught line by line, precept by precept, here a little and there a little, until they become a part of the inheritance of every farmer.

We would not depreciate the value of work done by the different experiment stations, nor would we underestimate the influence for good that comes at times from the different agricultural departments, state and national. We are not prepared to say that the millions invested in these institutions are not, on the whole, profitable investments. But we would rather have the experience of each season as it is recorded in the ablest agricultural journals than the full proceedings of the different associations, state and national and international, held in the large cities and addressed by professional teachers and expounders and organizers.

Much of this talk is self-laudatory, much of it is vain boasting, some of it is misleading. It will not do to take a small plot of ground—half an acre, an acre or two acres—and from the results of special treatment declare that what has been done on these experimental plots can be done on the millions of acres throughout America.

It is well to experiment with these small pieces of land, because they are studies in the science of agriculture. They show that certain conditions will produce certain results. They show the relation of seed selection to the crop. They show the value of fertilization and crop rotation and of intensive culture. But we would rather have the experiences of a year in practical farm operations than to have pictures of the ears of corn raised by all the premium takers in America.

We would not under-estimate in any degree the value of these different clubs among the boys and girls and the men and women, too, for that matter, throughout the agricultural regions. It is well for these farmers of today and the farmers of five and ten years hence, to carry on these experiments, to enter into these competitions. They are stimulating, they develop habits of observation, they teach the primary lessons of agricultural chemistry; but they do not by any means prove that you can raise the average yield of corn or wheat or tomatoes or potatoes or any other crop to the maximum yield of these especially prepared pieces of ground. When that is taught, or when it is intimated, it is misleading.

THE FARM TRACTOR

F. L. Billinger.

Much of the prejudice against the farm tractor comes from lack of information and from unsatisfactory experiences with the early types of these machines, before they had been improved as they are today. It is safe to say that as farmers learn more about the subject and understand that they must choose the tractor to fit their individual conditions this machine will come into much wider use.

Under what conditions should a farmer buy a tractor. This depends upon the farmer, the farm and the tractor. When three or four horses can be displaced and sufficient work can be provided to keep the tractor busy for a greater part of the time, its purchase would certainly be advisable. It should be remembered that the tractor will not entirely take the place of horses; there are always some kinds of work, such as cultivating, that must be done by horse power. However, the heavy labor of plowing, discing, harrowing and other operations that go with seed bed preparation can well be done by the iron horse.

It is a mistaken notion that plowing is the chief work of the tractor. If it were, then few farmers could really afford to own one. There is not enough of this kind of work on the average 80 to 160-acre farm to justify the investment. It can be used not only for tractive power but also for belt work and the more it is used for this latter purpose the more economical it will become. Cutting ensilage, grinding feed, threshing grain, sawing wood, etc., are some of the jobs that make it worth while to own a tractor and the farmer who can not provide such work would do well to study the situation carefully before investing his money. Where a farmer does not have sufficient work he could co-operate with several of his neighbors and use the same machine on each of their farms. Such neighborhood co-operation could be worked out very satisfactorily.

Another point that should be taken into consideration is the fact that the tractor as now made is not fool proof; it must be operated properly to secure good service. Tom, Dick and Harry should not be permitted to monkey with it any more than an inexperienced person should be allowed to run an automobile. The difficulty of efficient operation is frequently given as the chief disadvantage of the tractor. This can be largely overcome by having one man make it his business to operat and care for the machine.

Another objection is that the heavy wheels pack the ground when it is damp, thus making clods throughout the growing season. And still another complains that it is difficult to turn corners. These were legitimate complaints against the older types of tractors but those now made are lighter and more easily handled so that they can go where a heavy team can and not do any more injury to the soil.

What size of tractor should a farmer buy? We do not know that that question can be answered definitely. An investigation made in Illinois showed that on farms of 140 acres the 2-plow tractors were most profitable, on farms of [illegible]-crop acres or less the 3-plow outfit, on farms from 200 to 450 the 4-plow outfit. We would judge that the number of crop acres one would have and the amount of other work to be done would determine the size that should be purchased.

HOW ABOUT "CHEATLESS" DAYS?

In the wake of the "meatless" days and "wheatless" days which have been instituted by Mr. Hoover in the cause of food conservation, and which have been accepted by the American people in all good grace, an inquiring contemporary wants to know whether it would not be a good plan to observe at least one day each week as a "cheatless" day. Just how he would put this program into operation, we would not venture a guess, but it goes without saying that in these troublesome times the American people could practice the plan suggested, to good advantage to their pocketbooks, and to their patriotism as well.

When "meatless" Tuesdays and "wheatless" Wednesdays were first proposed, the big hotel and restaurant men jumped at the opportunity to display their patriotism in bally-hoo fashion. They got together in every community and immediately inaugurated these days, and then shouted from the housetops that their only fear of the scheme not being a success was that the people in private homes would not observe these days of specialized fasting. In fact, in many communities some of these fine fellows seriously considered the advisability of constituting themselves into a volunteer vigilance committee to visit private homes and make sure that the Hoover program was being observed.

There was no doubt as to their patriotism, oh no; They would serve no meats on Tuesdays, and no wheat on Wednesdays. So far so good. But, by permission of Mr. Hoover, they are allowed to charge extra for bread and butter. The food administrator hoped thereby to encourage conservation by discouraging waste. It was a mistake. In the name of patriotism, the plan has simply added to the profits of the caterers. And so with the other dishes that are generally served. Smaller portions are the fashion these days; but what about the prices? Are they smaller? They are not, nor will they be until somebody has nerve enough to institute a "cheatless" day. Such a day should also apply to the butchers and grocers as well.—Exchange.

FREE MEDICINE

If we could have the free services of a physician all the year, we would not be given anything better than we already have in the apple bin and the vegetable cellar. The very best of medicines put up in most attractive form to take, are found in the shape of fruits and common garden produce.

Every man who has a kitchen garden has a medicine chest in his back yard. In the onion, for example, he has a sulphur oil which gives the onion its reputation as a remedy for insomnia. There is solanin in the potato, and spinach contains iron.

Cabbage is highly regarded as a preventive and corrective of scurvy and scrofula. The composition of the tomato is chemically so subtle that it is not yet fully understood, although several active principles have been isolated and names have been given them. Thus the man who eats freely of vegetables is taking medicine without paying for a prescription.—Ex.

BETTER MERCHANDISING

R. V. Holland.

Last month the Texas Hardware and Implement Association held its twentieth annual convention in San Antonio.

The expressed purpose of this organization is concerted effort to promote the interests of retail dealers in hardware, implements and allied lines. As a guest I was, however, deeply impressed with the fact that every matter treated during the convention was also designed to benefit the public in their transactions with members of the association.

More efficient dealer service, better merchandise and lowest possible prices were keynotes running through the entire proceedings during the three days' sessions.

Suggestions for community development work were enthusiastically received by the body as a whole and members individually. Those expressing themselves invariably agreed that the extent of success possible for a merchant to attain is dependent upon, and limited to, the growth and prosperity of the community in which he does business. Every member with whom I talked is giving this matter serious consideration with a view of doing his full duty both as a merchandising factor and a citizen.

The pity of it is that there are not more live merchant organizations of this kind in the Southwest. Properly organized and conducted, they can accomplish much good, not only for their members, but for the customers they serve as well.

The Texas Hardware and Implement Association is working along proper lines and every live dealer in these lines should be an active member. His investment of time and money could be made most profitable to him. He really owes it to himself, his profession and his community.

SO LONG, OR GOOD-BYE?

Fresh—Did he kiss his girl goodbye when he left for France?

Soph—No, but he kissed her "so long" that I began to get nervous.

SOME TRIAL

Redd—Didn't I see you out in your new car today?

Greene—Yes; I was out for a trial.

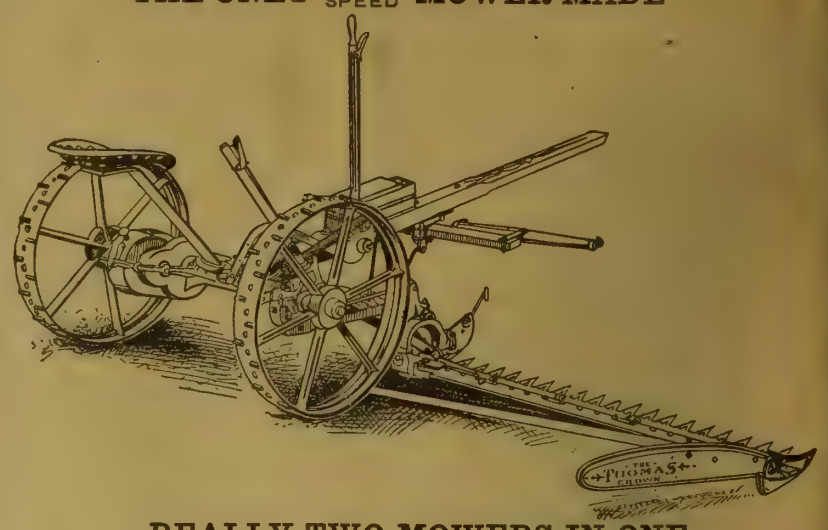
Redd—Was the trial satisfactory?

Greene—No; the judge fined me $10.

Plant an acre for the shell-hounded farmers of "No Man's Land."

"THOMAS" CROWN

THE ONLY TWO SPEED MOWER MADE



REALLY TWO MOWERS IN ONE

Speed changed instantly—all gears enclosed and RUN IN OIL. Best and greatest aligning adjustment of Cutter Bar found on any mower. Deserves your closest examination and severest trial.

Ask your dealer or write

Utah-Implement Vehicle Co.

SALT LAKE CITY

Get our Book of 60 Ready Cut House Plans Free

Get acquainted with the Keystone way of buying ready-cut Lumber and saving 1-3 the cost. Ask about lumber and millwork at wholesale prices. Quality guaranteed. Send postal for plan book today.

Keystone Lumber Co.

315-29-40 Sprague Tacoma, Wash.

WORK FOR RAINY DAYS

The farmer has often been called a oor business man. In several respects this is undoubtedly true because he lets many small items slip y which will, in the course of a few ears, count up pretty heavily on the ebit side of the ledger.

One of the most common losses on farm is time. The farmer keeps no ecord of his time and fails to look head a few days and plan his work. n rainy days he is the worst offender. Ie does nothing himself, has the hired ian do the chores and lets him loaf he rest of the day. What does this mount to in dollars and cents in the ourse of a year? Suppose we pay the ired man $26.00 and board per month. undays he does not work, so that eaves us 26 days to work each month r we pay him $1.00 a day for his ervices. Now assume that there are our rainy days each month, or days fter a rain when it is too wet to work n the field. If the hired man does the hores and nothing else he just about arns his board and the farmer is out 4.00 each month by not planning ome work to keep the hired man busy n rainy days.

This does not represent the biggest oss. A farmer's time is certainly vorth more than that of his hired ian's. Therefore, if the farmer also oafs on rainy days the loss on he above basis would be somehere in the neighborhood of $15.00 er month. If we assume the time we ave a hired man as six months in the ear the total loss in time for him nd the farmer will be about $90.00.

There is still another loss to be considered. Suppose it becomes necesary to stop a man and team in the usy season to do some piece of work hich could have been done just as vell on a rainy day. Time is worth nore at that time than it was on the ainy day and the failure of the man nd team to keep at the more important task may result in several ollars worth of hay being left out in he bad weather to spoil.

Many farmers say they would gladly vork on rainy days if they but had omething to do. The trouble here s not in their failure to have anything o do but rather in their failure to see what there is to do. The odd jobs are many and it is often hard to tell which ne should be attended to first. Among he many important things that a armer and his hired man could do on a rainy day are: Cleaning the barn, weeping down the cob webs in the arn, repairing and oiling the harness, getting the machinery ready to use at east a month before needed, greasing he wagons and carriages, cleaning the ellar and sharpening tools.

It would be easy to go on indefinitely and name over work which ould be done on rainy days. If the armer would but look around him he ould see much which could be accomplished at a time which would otherwise be lost and not until he does his can be truly refute the statement hat he is a poor business man.—J. R. Bowen.

QUESTIONS AND ANSWERS

Springdale, Utah.

Dear Sir:

One of our cows got two teats cut n something last year I think it must have been on a wire fence. They healed up alright and she was milked several months. Now after she has ome in again the milk looks O. K. but on running it through the separator there is blood collected in the bowl. Can anything be done for the cow? and would it render the milk unfit for human food after being separated? Thanking you for a reply in your valuable paper I am

yours truly,

John R. Brawford.

Answered by Dr. H. J. Frederick.

Bruised Udder.—I believe the affection troubling your cow at the present time is not due to the injury of a year ago, but is something that has occurred recently causing the rupture of a blood vessel in the udder of the cow. This may be caused by a bruise or an injury of some kind causing the animal to give bloody milk in one or more quarters. Animals affected in this manner should be milked more frequently than common. Determine which quarter of the udder is affected and use some vaseline or olive oil on the affected quarter, gently massaging the same. In this way it will soon be overcome and the milk may become normal again.

Springville, Utah.

Utah Farmer:

Will you please tell me through the Utah Farmer if liquid glass can be used the second time for keeping eggs. I used a large stone jar to keep them in. The liquid is so clean and nice. I would like to use it again if it will keep them good.

R. M. Johnson.

Answered by Dr. Byron Alder.

A stone jar makes the very best container for storing eggs in waterglass. It is advisable not to use the waterglass more than one year. As soon as all of the eggs are taken out the liquid should be thrown out and the jar thoroughly cleaned. A fresh solution of waterglass should be used each year. If any waterglass is left over and not mixed with water it can be held over and used for mixing the next year's solution.

ANSWER TO GRANVILLE OLSEN BY GEORGE STEWART, ASSISTANT AGRONOMIST

Hooded hulless barley has done very well in Utah, but it has not done better than the hulled and hooded varieties. The complaint against its feeding quality comes from millers who consider it rather difficult to grind. This is the only objection that I know to it. Since, however, it has no advantage over some of the other varieties and since they do object to it, we are not recommending it commonly for Utah.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending May 28.—Cattle—Receipts, 1,258; market, steady; choice steers, $11.00@13.00; good, $9.00@11.00; feeders, $7.00@9.00; choice cows and heifers, $9.00@10.50; fair to good, $6.00@7.50; canners, $5.25@5.75; feeder cows, $5.00@6.50; veal calves, $9.00@10.00; choice bulls, $8.00@9.00.

Hogs — Receipts, 935; market, steady; tops, $16.50; bulk of sales, $16.50.

Sheep—Receipts, 9,275; market, steady; lambs, $17.00; ewes, $9.00@10.50.

Omaha, May 27.—Hogs—Receipts, 6400; 15 to 25 cents lower. Heavy, $16.50@16.55; mixed, $16.55@16.65; light, $16.65@17.00; pigs, $12.00@15.00; bulk, $16.55@16.70.

Cattle—Receipts, 2700; market lower, steady. Native steers, $12.25@17.25; cows and heifers, $9.50@14.00; western steers, $9.50@14.50; Texas steers, $9.00@12.25; cows and heifers, $9.00@11.50; canners, $7.50@9.50; stockers and feeders, $8.00@12.55; calves, $10.00@12.25; bulls, $9.00@12.50.

Sheep—Receipts, 7000; market steady to stronger. Yearlings, $16.00@17.50; wethers, $15.40@16.50; ewes, $10.00@13.00; lambs, $17.50@19.80.

North Salt Lake, May 27.—Cattle—Receipts, 62; market steady to weaker; choice heavy steers, $12.50@13.50; good steers, $10.00@12.50; fair steers, $7.75@9.50; choice cows and heavy heifers, $9.50@11.00; fair to good cows and heifers, $8.00@9.00; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $8.50@9.50; bologna bulls, $6.50@7.25; veal calves, $10.00@12.00.

Sheep—Receipts, 112, market steady; good choice wooled lambs, $16.00@17.00; choice sheared lambs, $14.00@14.50; choice wooled yearlings wethers, $13.00@15.00; fat wooled wethers, $12.50@14.00; fat wooled ewes, $10.00@12.00.

Hogs—Receipts, 83; market steady; choice, smooth fat hogs, 175 to 250 pounds, $16.50.

All roads of "service" lead to France.

This is the Mower that's Easy on the Team

Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

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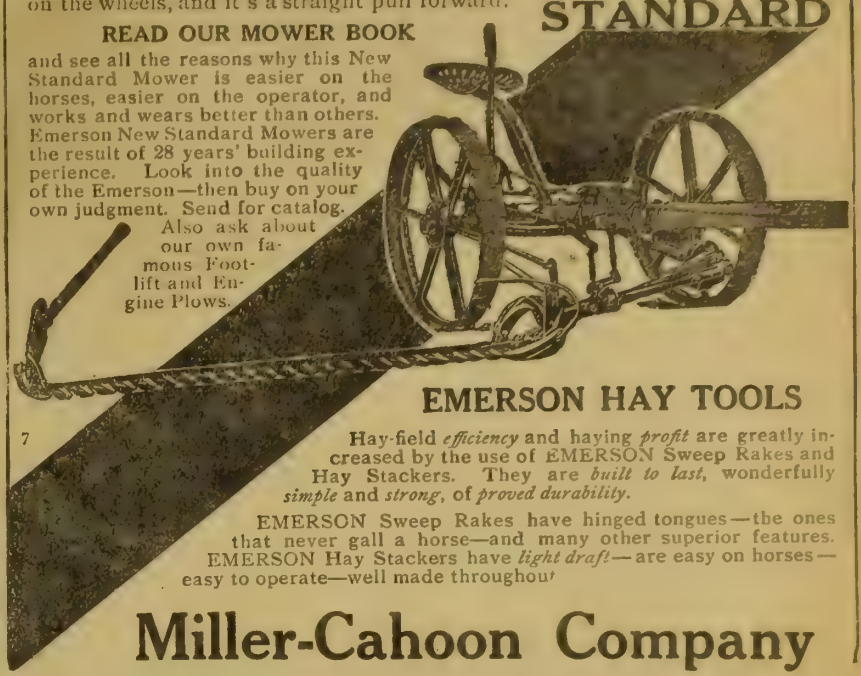
and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.



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Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

Miller-Cahoon Company

MURRAY, UTAH IDAHO FALLS, IDAHO

GET SHEEP

Recently the government conducted a farm survey of Utah County, and advised the farmers to get more livestock on their places, see bulletin No. 582.

A bunch of sheep should be on every farm in this state. They will convert farm and orchard weeds into morgage lifting profits, fence and enrich the farms, feed and clothe the family.

Here's what ten head of old ewes did for a Sanpete County farmer: They paid for themselves the first year. By the middle of the third year he had fattened his old ewes and cashed them in, this, together with the returns from the wool clip and marketed wether lambs paid the original investment with interest, and all costs of feed and keep, and left him with a bunch of young ewes with which to build up a big business on a small farm. In addition to all this, the farm had been enriched and the weed crop greatly diminished. So get a bunch of sheep on your farms. There is a good market for both wool and mutton right at home.

If you want to fence your farm, get sheep; if you want to pay off a morgage, get sheep; if you want to make big and quick profits, get sheep.

INFLUENCE OF THE LOCAL PAPER

Fletcher Davis publisher of the Hondo Anvil-Herald, delivered an address before the dry farming congress on the assigned subject of "Literature in the Farmers Home." In this excellent address discussing the local paper he has this to say:

I know from first hand observation: First, that the local paper is the first paper read in the farm home. It is read in preference to all other papers by both old and young and is the first periodical in which young people show an interest. The reason for this is its intimate personal touch with the people it serves. Second, that it is the closest read of any because it interests every member of the family. Third, that it is the best understood because it deals with matters more closely related to the life of its readers than any other paper; and fourth, that for the very reasons above set forth it is the most influential of all periodicals.

There is herefore a large weight of responsibility resting upon the shoulders of the most obscure country editor. He has an open sesame to the homes of his community and the hearts of their inmates through the very nature of his calling. He exerts a silent but potent influence upon the minds and hearts, the likes and dislikes of his readers, especially the young. How important then that he exercise discriminating judgment in what he publishes. How absolutely imperative that he be prompted by worthy motives and be guided by lofty ideals in his editorial expressions. The farmer should support the local paper. He should cultivate the friendship and good will of the local editor to the end that he may be encouraged to give the best service that lies within him.

"Give to the world the best you have And the best will come back to you," never had a truer fulfillment than when applied to the local editor. This doesn't mean, we wish to be understood, to give the editor your best pumpkin or your biggest squash and expect a year's subscription in exchange. It means you should give him your moral support and counsel. It means you should give him his hard earned money in cold cash and promptly when due. No man ever invested so small an amount more profitably than when he spends the price of a subscription with his local editor.

One of the best examples of careful buying that has come to our notice is that of a young man who told us that when he was ready to buy a tractor he found out what machine his local implement house sold, knowing that this house would give him good service if he bought their machine. On finding out, he got the names of fourteen buyers who had purchased the previous year and personally visited every one of them. Only one reported bad results, and he said that by looking over the farm he knew that man would have bad luck with anything. The thirteen machines that had given satisfaction were enough for him. Some advice is thrust upon us and some we have to go out and get, and the latter is always worth taking.

Stand behind the boys at the front —but not too far behind.

HOME

HOUSE CLEANING ECONOMIES.

Nancy Brooks.

Everything is so high-priced and there are so many demands for extra money just now that most of us feel impelled to prolong the use of our old furnishings, if in any way possible. This is right, but does not mean that we should continue to use them in a shabby, unsightly condition, but that we should restore, repair or remake as we best can and thus prolong their service instead of just their use.

Cleaning to Prevent Repapering.

Beginning with the walls, very often paper, otherwise good, will be so smoked and dingy as to seem unfit for further use. Especially is this true of light ceilings. But papers can be cleaned, and if only bad overhead it will pay to clean them, and especially if the paper is a high-priced one. There are a number of good cleaners on the market, enough of which may be had to clean a large ceiling for a few cents. The secret of successfully cleaning wall paper is in going over it in ong even strokes all the same way, with pressure enough so that all the dirt is removed from a place without going over it a second time. It may take the better part of a day to clean a ceiling but it will require as much time and labor to repaper it, and many times the cost. But where the ceiling paper is broken or loose, it must, of course, be replaced with new. However, if walls are still good only the ceiling need be removed. With a sharp pointed knife cut loose from the border and remove. Then in putting on the new paper care must be taken to fit it neatly into the angle of the wall, but this can be done so nicely as not to be noticeable. But if border is not too wide a better way is to drop ceiling over it a little and apply a new border. Or ceiling may be dropped to moulding where this is used and border omitted.

Suggestions on Mending.

Often paper on walls which is broken or loose can be repaired. Too repaste loosened paper, hold a piece of board tightly against the wall above the loosened strip, then pull up the strip to the board and tear across. Then cover generously with rather thick paste and replace, taking care to firmly press down all outside edges. In patching broken or soiled places, cut the new piece out along lines of the design and if perfectly matched it will scarcely be noticed.

Ragged window shades can sometimes be made good looking again by turning end for end. If not too bad, they may simply be cut off a little and rehemmed on the machine, using a very long stitch.

Worn rugs are a problem, yet much may sometimes be done with these. Where faded they may be brightened up greatly by touching up the colors with wool dyes. First clean the rug thoroughly, rehem if ends are frayed, and put down as usual. Then with the dyes and a small brush such as is used by children in the schools, go over the design and touch up the faded parts, especially the larger figures. As a good sized space is gone over, cover with a wet cloth and with a very hot iron rub till dry. This will do much to set the colors and make them permanent. Small rugs with frayed ends may often be made to look good again by applying new fringe. Large, seamed rugs of small, conventional design may sometimes be ripped, and worn paces changed to come where they will not be conspicuous and where they will be less used.

Curtains and Linoleum.

Curtains may sometimes be made over, or evolved from something else on hand. I have in mind two pairs of pretty curtains made from one. The old pair were longer than needed and of 40 inch material. A narrow valance was cut from one end, the rest split, hemmed and finished with a narrow edge quickly crocheted of carpet warp. And for hall curtains this woman used a piece of big flowered, red and white percale which had lain packed away for years, and which harmonized nicely with hall and stair carpets.

A great deal may often be done with old linoleum. Worn through places may be cut out and new pieces set in so neatly as to be hardly noticeable. Or if a different kind must be used the new piece can be proportioned and cemented down over the worn place to look like a rug. Or a real linoleum or cheaper congoleum rug may be bought and cemented down. But if a new piece or rug is put over a hole, the hole should first be trimmed and filled with at patch of some sort, or the new will sag into it. Where the design is partly worn off in places these may be touched up with oil paints and the whole given a good coat of varnish, or if design is practically all worn away, the whole covering may be given a good coat of floor paint and the life of the linoleum greatly prolonged.

TAKE CARE OF THE SCREENS

J. M. Smith.

Flytime is about here and the screens for the windows and doors must be gotten out of storage. In most cases this is going to reveal the sad effect of last season's neglect, and many of the screens will have to be renewed before they can be used again.

Probably no other part of the home equipment is so badly neglected or will return so much profit for a small amount of care as do the screens. In the first place, they should be substantially made, with corners well fitted together, fastened with screws and strengthened with flat corner irons. They should be made full length of the windows in most cases, should be hinged at top so they can be opened when desired. Each frame should be fitted carefully to its particular opening, and both opening and frame should be marked plainly so that there will be no chance for getting a frame in the wrong place. Don't depend on your memory or on a list posted some place, as you may not be there next time they are to be put in place. Metal figures made especially for this purpose can be purchased in nearly any hardware store, or very serviceable figures can be made by using the point of a screw driver.

When finished and properly fitted, the frames should be given two coats of good paint, especial care being taken to get the paint into the joints at the corners. They should then be covered with good wire screening. The copper coated wire is much better, but the cheaper black wire will give good service if properly cared for.

In the second place, the screens should be painted every spring before being put in place. The paint should be rather thin and should be brushed on each side of the screen but not rubbed back and forth, as that has a tendency to produce air bubbles which will clog up the screen openings. Plenty of turpentine or other dryer should be used to make the paint dry quickly. A light coat should be given the frames, and at the same time any screen around porches should be gone over in the same way.

In the third place, all window and door screens should be taken down each fall and stored in a dry place. If possible they should be placed straight on edge in a sort of rack to keep them from twisting, although they can be laid one on top of another if carefully handled. No chaff, hay, or other trash should be allowed to collect on them.

The writer, when a boy on the home farm, made a set of full-length screen frames of pieces ripped from discarded lumber, fastened them together with nails and with no irons to srengthen the corners, painted them, and tacked on ordinary black wire screening. The first three or four years, these were taken down and stored each fall and painted before being put up in the spring. After that they were left in place the year through, but were painted each spring. When my father left the farm 14 years later, these screens still had the original wire on them and were apparently almost as good as ever. Since that time they have been in the hands of renters and have had little attention; but several of them, now 18 years old, are still on the job and in fair condition. So don't be afraid to give your screens a little attention and a little paint this spring.

THE PORK CALL

John M. Evvard.

America and America's allies are pleading for more meat, particularly fats, and look to the swine producers of America, especially of the corn belt, the greatest swine producing section of the world, to produce enough pork and fats so as to avoid the predicted shortage.

The willingness to answer this call is evident and swine men everywhere are anxious to respond quickly and effectively on a good, substantial buisness basis.

The pork shortage situation is drifting into a near critical state, and definite, immediate action, which is protective and stimulatory, is most imperative.

The situation demands that forward looking, liberty loving hog producers join vigorously in the chorus of virile voices that call for action—action unmistakable, as expressed in the democratic appeal to the food administrator.

HIS IDEA OF IT

"So you approve of the government's action in taking over the railroads."

"Yep," replied Mr. Growcher. "I approve of that and prohibition for several reasons, one of them being that now a lot of people can quit lecturing on the subject and go to work."

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We have them from $35.00 up. Send for our catalog.

We carry electrical appliances of all kinds.

Eardley Bros. Co.

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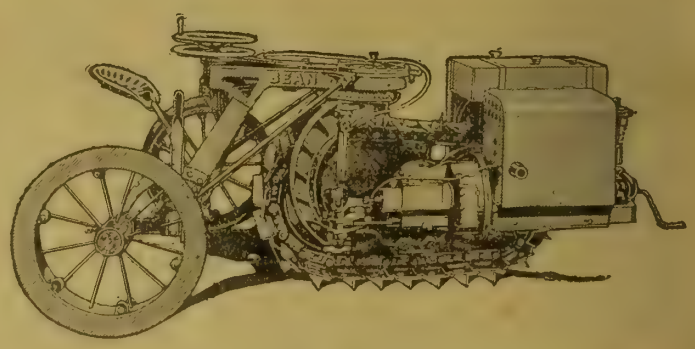

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You can Plow, Plant, Cultivate, Disc, Harrow, Drill, Haul, Harvest. In fact it does all Farm Work usually done with horses.

You can depend on the Bean TractPULL TRACTOR as it is made of the very Best of Material. Equipped with NEW DEPARTURE BALL BEARING AND HYATT ROLLER BEARINGS.

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Each purchaser is furnished free a $25.00 service coupon book which entitles you to exactly that much service.

Call at our nearest branch for full information or a post card will bring it. Order now to insure delivery.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

HOW TO GET RID OF ANTS IN HOUSE

As long as household conditions are such as to attract ants, measures for getting rid of the insects will be of little value. The first step in freely a house from these pests is, therefore, to clean up all food that may be scattered about and keep food supplies which may attract ants in ant-proof metal containers, or in ice boxes. Cake, bread, sugar, meat and similar substances are especially likely to attract the insects. The use of baits is not recommended because of the danger that these will serve merely to draw more insects into the house and thus actually to increase the nuisance. Where it can be safely used however a syrup poisoned with arsenate of soda has been found of effective. The formula for this syrup is one pound of sugar dissolved in a quart of water, to which should be added 125 grains of arsenate of soda. This mixture is boiled and strained and on cooling is used to moisten sponges which are placed where they can be reached easily by the ants. The insects collect the syrup and convey it to their nests, so that the whole colony is ultimately poisoned. Although this method has been found effective, as has been said, it should be remembered that the arsenate of soda is poisonous to human beings and to animals as well as to ants, and that its use must be safeguarded with the greatest precautions. Where the ants can be traced back to their nests and these are in accessible places, it is possible to destroy the colonies by injecting with an oil can or small springe a little bisulphid of carbon, kerosene, or gasoline into the nests. All these substances, however, are inflammable and precautions must be taken, therefore, against the danger of fire. Though the common garden or lawn ants which build their little crater nests around houses are distinct species from the true house ants, they may find their way into the house. Their colonies may be destroyed by drenching the nests with boiling water or injecting a small quantity of kerosene or coal oil into them. Where larger areas are affected or with a very strong soap wash prepared by dossolving any common laundry soap in water at the rate of one-half pound to one pound of soap to a gallon of water. Another method is to inject bisulphid of carbon into the nests, the quantity of the chemical depending upon tne size of the nest. After the bisulphid of carbon has been injected, the entrance to the nest should be closed by the fot in order to retain the chemical, whicn will then penetrate slowly through tne underground channel and kill the ants. Although its fumes are disagreeable, they are not poisonous to man and the higher animals.

With Self Starter and Electric Lights

Here's what one man and a Moline-Universal Tractor can do in one day of 10 hours:

Plow 7 to 9 acres.

Disc 27 acres with a 7-ft. tandem disc.

Disc 38 acres with a 10-ft. disc.

Harrow 76 acres with a 20-ft. peg tooth harrow.

Plant 22 acres with a two-row planter.

Plant 43 acres with a four-row planter.

Cultivate from 14 to 20 acres with a two-row cultivator.

Drill 35 acres with a 10-ft. grain drill.

Harvest 25 acres with an 8-ft. grain binder.

Harvest 10 acres with a corn binder.

Mow 25 acres with an 8-ft. mower.

Rake 40 acres with a 12-ft. rake.

Rake 25 acres with an 8-ft. side delivery rake.

Load 12 acres of hay.

In addition, it can be used on the belt for running threshers up to 24 inch capacity, silo fillers, corn shellers, feed grinders, wood saws, clover hullers, hay presses, pumps, lighting plants, etc.

There is no end of odd jobs that can be done with the Moline-Universal Tractor.

Announcing the New

MOLINE UNIVERSAL TRACTOR

Model D

BECAUSE of its ideal design, construction and performance, this new Moline-Universal Model D enables one man to farm more land and produce more food than ever before possible. It is the world's most dependable farm hand and solves the farm help problem.

Most Advanced Construction

New features include self-starter, electric lights, electrical governor, perfected overhead valve, four-cylinder engine that is free from vibration; complete enclosure of all moving parts; differential lock which increases traction in soft ground.

Every part is designed on the basis of quality and service. Drop forgings, heat-treated parts, steel cut gears and unusually large bearings add extra years of endurance.

These new features, together with the well known Moline-Universal type—all the weight on two wheels, one-man control and ability to do all farm work including cultivating—make the Moline-Universal Model D the best tractor that money can buy.

Phenomenal Pulling Power

Of its total weight of 3380 lbs., 98% is used for traction. That's why the Moline-Universal has phenomenal pulling power.

Conservatively rated at 9-18 horse-power, the Moline-Universal Tractor has more than ample power for heavy belt work. Its greater speed enables it to plow as much in a day with two plow bottoms as the ordinary three-plow tractor. Yet it is light enough for such work as cultivating, mowing, etc., which do not require as much power.

One Man Operates Entire Outfit

The Moline-Universal attaches direct to the implement, forming one compact unit. It turns in a 16-foot circle and backs with the implement attached as readily as it goes forward. One man has complete control of the entire outfit from the seat of the implement and can thus do the same work that requires two men with other tractors. Operation of the Moline-Universal is so easy that a woman or boy can handle it.

In fact anyone who can drive an automobile can run a Moline-Universal Tractor.

Moline Tractor Implements

The greatest care has been used in designing a full line of implements for use with the Moline-Universal. "Moline" trademark on a tractor or implement is a guarantee of dependable service.

Moline dealers are now accepting orders for Model D Tractors, and our new and modern plant—the world's largest exclusive tractor factory—is being crowded to the limit in an effort to build tractors fast enough to keep pace with the demand.

On request we will be glad to send you our Tractor Catalog which completely describes the new Moline-Universal. Address Dept. 33.

MOLINE PLOW CO., Moline, Ill.

Manufacturers of Moline Quality Farm Implements since 1865

GREENS BETTER THAN MEDICINE

Mary Scott.

The humble dandelion is coming into its own now. It is being recognized and placed upon the list of valuable foods. Dandelion farms are being planned. Dandelions are grown in greenhouses, too. The dandelion is replacing the pill-box and the obnoxious medicine spoon. When one feels low in the spring and needs a tonic, one need no longer spend money for medicine; one buys rhubarb, dandelions, spinach and any other similar greens; that is, one who is wise does this. Eating greens comes natural in the spring and is nature's way of giving the proper tonic.

Dandelions are invaluable for the iron they contain, and rank next to spinach. It is much better to eat foods that have iron than to take iron as a medicine.

Dandelions also are valuable for a slight laxative property. This comes chiefly from the roughage they furnish, which is necessary for the intestinal tract. They have to clean out the intestine and to prevent putrefaction there. Many persons have autotoxin (self-poison) from food that putrefies in the intestinal tract. By eating plentifully of spinach, dandelion, lettuce, cress and other greens, one may get rid of much of this. Then, all the tender greens which come in the spring not only give a variety to the menu, but they also furnish mineral matter. We should make use of all of them, and, where they are plentiful, not only use them, but can them for next winter.

All the dead leaves should be thrown away and then the greens should be washed thoroughly in several waters. It is better to lift out the green than to pour the water off them, because in the latter case tne sand or grit sticks to the greens, but if the greens are lifted out of the water the sand will drop to the bottom. Dandelions have a rather strong flavor, and for this reason should be blanched before being cooked. To do this easily one may place them in a piece of cheesecloth and plunge them into a kettle of boiling water and boil for 3 minutes. They should then be lifted out of the water and placed into cold water and allowed to remain there two or three minutes and then drained. One may blanch the dandelions in the morning and set them aside to be cooked later in the day, or they may be cooked immediately, just as one prefers. The dandelions may be cooked and then chopped, or chopped first and then cooked.

They should be cooked until tender, which will take from 15 to 20 minutes. A piece of bacon rind cooked in with the dandelions will improve the flavor very much, and, if bacon is not accessible, one may use diced salt pork.

Dandelions cooked in this way may be served with vinegar or they may be seasoned with a sour sauce. Sometimes the dandelions may be combined with other foods. An excellent recipe given for dandelion and bacon is as follows:

Two tablespoons butterine.

One cup of bread crumbs.

Two cups cold and chopped dandelions.

One tablespoon onion juice or minced onion.

One tablespoonful of lemon juice or vinegar.

Salt and peper to taste.

Brown the bread crumbs slightly in the melted butterine, add the greens, onion juice an other ingredients. When this mixure is hot serve with hardboiled eggs or eggs put through a ricer and place pieces of boiled bacon as a border.

If you have tender dandelion leaves, these may be chopped fine and seasoned with onion salt, celery salt and salt and pepper to taste. Add sufficient salad dressing to bind together properly and place between pieces of bread. Brown bread makes the best sandwiches.

Lambs quarter and sour dock and shepards purse may be cooked and served in the same way. These do not need to be blanched before being cooked.

A small girl in the primary department excitedly told the teacher:

"We got a new baby at our house Doctor Andrews brought her."

Another little girl, on the other side of the room, said: "We take off of him, too."

The Care of Your Storage Battery

By William Calligan.

The storage battery, as applied to the modern motor car, is one of the most important parts of the electrical system, and when it is working right is the source of a great deal of pleasure, but when it is not working right it is the source of a great deal of annoyance. I shall try in this article to give a few pointers upon taking care of it.

First I shall say a few words about the construction. Each cell of the battery consists of a jar of suitable shape usually made of hard rubber, and in the jar are the lead plates and acid of electrolyte. The number of cells in a battery depends upon the voltage required; the number and size of plates depend upon the amperage required. The lead plates are made in the form of lattice work (they are sometimes called grids), and in this lattice work is pressed a paste made of lead ovide and other material. The negative plates when finished are of spongy lead. The acid or electrolyte is made by mixing oil of vitrol or sulphuric acid with distilled water; the preparation is about one part acid to four or five parts water. Only chemically pure acid is used, the acid being poured into the water, never the water into the acid. A hydrometer syringe is used to test it.

Keep Plates From Touching.

When the plates are in place in the jar, there is a space of about 2 inches between the bottom of the jar and the bottom of the plates. This is to allow a space for sediment so it will not touch the plates and cause a short circuit. They are kept from touching each other by thin separators.

In figuring the size of a battery for certain requirements, a space of 6 by 6 inches of positive plate surface is allowed for every 25 amperes required. There is always one more negative plate than positive plate.

Do not get the idea that a battery actually stores up electricity; it does not. The current when passing through produces certain chemical changes; and when the current is cut off and the circuit closed, the battery starts to resume its former condition; and in doing so it produces a current of electricity flowing in the opposite direction to that when charging. The positive plates when fully charged are of a deep brown and the negative plates are gray. When a battery is fully charged, the acid is in the water; and when it is discharging the acid leaves the water and is absorbed by the plates. In discharging there will form upon the plates a white sulphate, and the nearer a battery is completely discharged, the harder will be the sulphating. If this sulphating or discharging to the extreme is allowed very often, the plates will be ruined. So you should not allow your battery to become completely run down.

The battery is used to crank the engine, for lighting, and, in most cases, for ignition, and also for operating the horn. It is kept charged by the generator on the car, and the charging rate is controlled by the regulator. If charged from an outside source, the rate of charge is from 8 to 10 amperes to start, and finish at 4 or 5 amperes.

Overheating is another thing that must be guarded against. It is caused by overcharging, and charging and discharging too rapidly. After a long, hard trip, feel of your battery terminals and see if they are very warm. If they are, it is best to insert a thermometer (made for the purpose) in the vent and notice the temperature; 110 degrees Fahrenheit is the limit to which it should rise.

In overheating, the plates are liable to buckle or bend out of shape, and this causes the paste to crack loose and fall to the bottom of the jar; and when this sediment is piled high enough to reach the plates, there is an internal short circuit. It also lowers the effciency of the cells in which it occurs. The only remedy then is to have it overhauled by a service man.

Cause of Overheating.

Another cause for overheating is allowing the solution or acid to get too low. When the acid gets below the top of the plates, the active surface is reduced just the amount of surface uncovered, and that throws extra work on the covered space. This extra work causes the overheating. Low solution will also cause sulphating.

I should say, in connection with overheating, that if, on a long trip, the battery gets too warm, the regulator may be adjusted, or, if this cannot be done, run a slower speed.

Do not depend upon the performance of the battery to determine the internal condition. If the lights or horn work, or even if the starter works well, don't think that the battery must be all right. Use a hydrometer syringe. I have seen batteries that seemed to work all right but did not have life enough to raise the float in the syringe. Don't guess at the condition; find out.

Keep the acid up to the proper level by adding distilled water; but don't keep the cell too full as the contents are liable to slop over. Never use water taken from a well or cistern, nor water which has come in contact with any metal. You can catch rain water that will do just as well by setting a glass dish out in the rain. Let it rain for four or five minutes to wash the dust from the air and then catch the water and bottle it up to keep it clean.

If there is no leakage and no acid has been spilled, all that is required is to add water occasionally. But if there is a leakage of the acid or any has been spilled, a little clear acid must be added; this had best be done by a service man.

Never short-circuit your battery by a heavy wire or lay any tools or iron on the top to cause a short circuit; it is an unnecessary drain on it. Always keep the top clean—I might say, keep it clean all over. Sometimes the electrolyte will slop over; this should be wiped off as soon as possible. Use a cloth or a bunch of waste. It is a good idea to keep the battery terminals greased with vaseline to prevent corroding.

If the battery will not stay charged, or seems to run down more than it should, examine the wiring and see if there is not a ground or a short circuit; sometimes the trouble will be in the switch. If the wiring, connections, and switches are all right, the trouble may be inside the battery; in that case it will have to be overhauled.

If any of the cells seem to need more water than usual, examine the battery box and see if it is wet, or, if the car stands for any length of time, possibly the floor under the battery will be a little wet; in that case, a jar is probably cracked and will have to be replaced.

In taking care of batteries over winter, some people care for them themselves, while others take them to a service man. If you take them to a service man, you need not trouble yourself about them until you want to use them. If you keep them yourself, it is best to store them where the temperature does not vary too much; that is, do not expose them to extreme cold or heat. Test them once in a while with a hydrometer, and if the reading drops, give them a charge from the car by connecting them up. Be sure to get the positive wire on the positive terminal. If you do not remember which one is positive draw a little acid from the battery and put it into a drinking glass; start the engine; by dipping the two terminal wires in the acid, bubbles will be seen to raise to the top. The wire from which the least amount of bubbles raises is the positive. Always return the acid back to the same cell from which it was drawn.

If your battery ever should freeze, not not thaw it out too fast. Do not put it into an oven or too near the stove; let it thaw out slowly.

In using a battery to crank the engine in zero weather, prime the engine and have everything in proper shape to start. The capacity of a battery in winter is about half what it is in summer.

I think I have mentioned the main points in taking care of batteries, and if the reader will follow my suggestions, he will keep his battery in good condition, unless it is injured by an accident.

TRAINING AND OPPORTUNITY

R. J. Samuel.

Specializing has come to be the big thing in the race for success. Careful and systematic preparation is absolutely necessary in meeting competition, no matter whether it is in fruit growing, selling plows, or making shoes. And specialization cannot be had without thorough preparation and concentration on one line.

The day has long passed when farming was the occupation of the ne'er-do-well. It is no longer looked upon as the last job for a man who has made a failure of all else. But instead, the fundamentals of farming are becoming so well understood that few indeed are tempted to venture into the highly specialized branches of farming without thorough preparation, without a more or less prolonged service in practical work and some study of the principles underlying that particular specialty.

Agriculture is as large, weighty, and deep as study as law or medicine, and it is just as hard to bluff your way through to success in agriculture, without a knowledge of the business, as in any of the "professions." The more extensive that knowledge, the more thorough the preparation for the work, the more certain is the ultimate success. And it is so easy today, to get this knowledge and training. The hundreds of free agricultural colleges of this country provide the training for any branch of agricultural work, and afford opportunities never before provided in the history of the world. When we stop to realize the wonderful opportunities of today, and the easy facilities for obtaining the best of training and education it is all the more surprising to see our young men idling away their time, or doing work for which they are not the least prepared and for which they have no liking.

There is no such thing as "luck." A "rabbit's foot" or "buckeye" is of no avail in meeting twentieth century competition. Success comes only to those who are prepared to fight; who understand the game and who have the knowledge and training that will enable them to reach the goal.

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We have for sale 60 acres of very choice land. This property is located in the best part of the Bear River valley. It now has 40 acres of alfalfa and 20 acres of grain. We can sell this for $160 per acre, on very easy terms.

In Cache valley we have one 71-acre farm, a quarter of a mile from the railroad station. The property is all under a very high state of cultivation and has been farmed for ten years. Can be had for $125 per acre; 10 per cent down and ten years on the balance. This includes water right paid to date. Will exchange for Salt Lake City property.

Three 40-acre tracts lying west of Tremonton that we are offering for sale at $140 per acre; 10 per cent down and ten years on the balance.

A number of first-class farms for sale in southern Idaho, containing 40, 80 and 160 acres; 10 per cent down and ten years on the balance. Also have several first-class farms to exchange for Salt Lake City property.

We have a proposition to offer to sheepmen or cattlemen that has never been offered before. We have for sale several million acres of the finest grazing land in the United States, on the railroad, plenty of water, lots of shade, and only 12 hours' ride from one of the best markets in the country. We will sell you this ground at a very low cost—from $4 to $12.50 per acre—give you ample time to try land before buying, and if it does nto prove satisfactory you are not required to take it. For further information, call or write. It will be a pleasure for us to explain this proposition to you.

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WE WRITE FIRE INSURANCE.

COMMUNITY AND HOME CANNERY

(Continued from page 3)

all well and good to say that this is not entirely wasted because some is fed to the hogs. When fruit and vegetables are disposed of in this manner, each feed is costing the grower at least $1.50 per hog or about $5.00 per day. Think it over. Would you pay the price for buttermilk at the creamery?

The process of canning by the One-period, Cold-pack Method, so named and explained by Mr. Benson of the State Relation Service in Farmers' Bulletin 839, is the method of general practice in the canning of foods, whether in the home, community cannery or the large commercial plant. The process is the same in either case, being founded on the fundamental principles of sterilizing the food product, i. e. killing all organisms present at the time of packing and so confining the food in air tight containers that it will keep indefinitely.

The first steps in any canning method consist in a preparation of the material to be canned, the thorough cleansing of all containers and utensils used in the operation. Great care should be exercised in the selection of material to be canned. It is indeed a falacy to expect a first class product when the can is opened, when anything but fresh, sound, disease-free products are used.

The successive steps in canning, familiar to the housewise, are to place the cleaned vegetables through the blancher and cold-dip, pack in containers, cap, exhaust, test, seal and process, if in tin cans; or if glass cans are used the jars are carefully tested, filled and processed, and then sealed. The processing is the important step, or that of complete sterilization. This varies in the different methods, only as the possible temperature and pressure varies from two hours in the open hot water to only a few minutes with the steam pressure cooker.

We have learned of the great advantages of a cannery. Now the question which most naturally arises in our minds: How may we avail ourselves of such a system? There are several methods, one of which may fit your particular needs. You may purchase a small home pressure retort, having a daily capacity of 150 quarts, for the small sum of $20.00. This size is used on the kitchen stove and occupies only the space over one hole. If you cannot purchase one alone, cooperate with your neighbors and by rotation one outfit can be made to serve three or four families.

Two Nebraska girls purchased on of the small steam retorts and their reports show that 22 hogs and 17 quarters of beef were canned in 17 homes in one month last winter.

Any housewife with a small outfit can easily convert the fresh meat of fall and winter into a savory, appetizing supply for summer which will always be ready for instant use. If you were served with a fine chicken dinner early next April the taste of a delicious young springer would surprise you to learn that the meat was from a two-year-old hen canned last fall at the close of the laying season, and that by so doing her own value in wheat had been conserved.

Can your meat in the winter after the fruit and vegetable jars have been emptied. The meat will be used before the next fruit season and the containers have served a double purpose. Another feature of this method, so much appreciated by the housewife, is that instead of a long process of cooking on a hot summer day, the meat for dinner is already prepared. It was cooked last winter when the coal was being used for heating purposes. Another important item of conservation.

Where a plant of larger capacity is necessary, one may be established by the co-operation of the community. All prospective customers buying stock in the enterprise, or in some cases an individual is persuaded to install a plant for custom trade, or a system similar to the one now used in Gooding County, Idaho, may be applicable.

Gooding County Community Cannery

Early last spring, when the call came for the war gardens, all patriotic citizens responded in the utilization of all available land. We have in one part of Gooding County, Idaho, one of the most fertile valleys in the nation, situated in the canyon of the Snake River. The valley is a small one, being only one to two miles in width by ten miles in length. Due to its geographical situation the central community is about six miles from the nearest railway station, making it exceedingly difficult to place fruits and vegetables on the open market.

The County Commissioners, at that early date, foresaw the great need for methods of conservation of the increased yield of perishable foods. The idea of a cannery was mentioned and resulted in the purchase and installation of a steam pressure outfit, consisting of a 10 horse power steam boiler and two steam tight retorts, each having a capacity of 144 No. 2 cans, 90 No. 2½, or 21 No. 10 cans.

It was intended that the plant should be a commercial one, consequently patrons were urged to dispose of their products through the usual channels. The people responded admirably to this suggestion. The containers in every cellar were filled and tons and tons of fresh foods were trucked to the nearby towns, and only that part of the crop which otherwise would have been wasted was taken to the cannery and placed in tin. This would have been wasted food amounted to over 42,000 quarts. This sum consisted of 13,300 quarts of Elberta peaches; 10,000 quarts of tomatoes; 9,000 quarts of apples; 5,000 quarts of corn; 2,00 quarts of string beans; 1,000 quarts of table beets; 1,0000 quarts of plums; 1,000 quarts of apricots; 500 quarts of peas; 100 quarts of cherries and 100 quarts of pumpkins. We are now canning 5,000 quarts of fresh beef, mutton, pork and chicken. This sum total of 47,000 quarts of food will be increased to over 200,000 for next year. The plant will be enlarged and people will plant larger gardens, knowing there is no danger of over production.

The plant having been purchased and installed by the County Commissioners at an expense of only $600.00, and being operated at cost by the County Farm Bureau, every tax payer feels a keen interest in the success of the enterprise. He takes his own product and in the course of two or three hours returns home with his food in an unperishable pack, at a cost of only nine cents per quart, the initial cost of tin and labor necessary in the operation.

In practically every industry today the necessary labor is the big question. The Gooding County plant employs seven women and five men, all supplied from the immediate neighborhood. The women are housewives, living in comfortable homes and need not be working. However, there seems to be a fascination in the cannery which is so inviting they cannot resist, and consequently we have the most efficient help possible.

That we may in a greater sense appreciate the economy of such a plant, let us consider the 5,000 quarts of corn, a product so little canned west of Nebraska. This amount prepared represents: 8,750 pounds of corn prepared for the table; approximately 30,000 average sized ears in the roasting stage. If we figure the value of this corn at 15 cents per dozen ears, which would be a fair profit to the corn producer of Idaho and possibly elsewhere, it would cost 7½ cents for the corn and 9 cents for the tin and labor, or a total of 16½ cents for a No. 2½ can of corn. The regular No. 2 corn can contains one pound and four ounces and retails for about 20 cents. The No. 2½ can, or 1 pounds 12 oz. can, would have a retail value of 28 cents, a saving of 11½ cents per can to the consumer, or $575.00 for the 5,000 cans.

In the canning of 13,300 quarts of peaches the grower received 3 cents a pound for his fruit, which was sold to the consumer at 15 cents a can, 8 cents less than the retail price, or a difference of $1,064.00.

To summarize briefly, an investment of $600 has conserved and preserved 47,000 quarts of food, given a handsome profit to the producer and a saving of over $4,000 to the consumer.

Such a cannery with such a system has a place in most every county in the nation. The installation of which would "Help the Allies Win the War."

THRIFT—HOME BUILDING

By S. W. Straus.

In many cities of the United States at the present time, home-owning campaigns are being conducted. This is a commendable aspect of thrift. In fact it embodies one of the most noble exemplifications of this sterling virtue. Statistics show that about one-half of the Americans own their own homes, so there is still a large work to be done along this line of economic endeavor.

Thrift does not consist merely in saving money. Money-saving is only an elemental component of thrift. To be thrifty, one must be a money-saver, but learning to save money is only one of the primary steps to be taken in the building of a thrifty character.

There is a vast distinction between saving merely for the sake of accumulating or saving for a definite and worthy purpose.

The day a man begins saving money for a home marks the beginning of a new and finer life for him than he has ever known before. He is saving for the most worthy object possbile. The home is the unit of which the nation is constructed. It is the solid foundation on which society rests. It is man's finest token of civilization—it is everything that a man might live for or die for. In the vocabulary of progress it has no synonym.

President Wilson tells us that "If men do not provide by saving, for all those dependent upon them, then they have not opened their eyes to any adequate conception of human life."

There are relative values in saving, based both on motive and purpose. The man who saves money merely for the purpose of investing it in an illegitimate business enerprise, could not be called a commendable practicer of thrift. The miser is unpraiseworthy. Those who hoard their money in secret drawers or chests are worthy only of condemnation. These are all practitioners of misguided thrift.

On the other side, we have those who save for various purposes. Young men or young women who save their modest accumulations in order that they may acquire a college education are worthy exponents of true thrift. Parents who save for their children lead ennobling lives, as do all those among us who, with some fixed and worthy purpose, set aside from their small incomes as much as circumstances will permit.

Among these are the men and women who are saving to own a home.

Let the movement be encouraged everywhere in America. Let us be known as a nation of home-owners. Nothing will give us more substantiability. It is thrift developed to one of its finest possibilities.

What sweet memories the word home brings to many of us! How fortunate were we that had a home! Give your children a definite place that they can call home and when they have grown older their memories of it will be among the happiest thoughts of their lives.

TO SAVE WORK IN LAUNDRY

Sarah Russell.

A good idea is to provide a long strip of heavy muslin, which should be kept in the laundry exclusively for one special purpose, and never used in any other way. On wash days this cloth is spread, and with common pins all the handkerchiefs, collars, cuffs and doilies are fastened to it. It is then folded together, and it is but the work of a moment to attach it to the line with a clothes pin. This saves many minutes of extremely tedious and unpleasant work, and answers the need even better than the usual way of pinning the pieces separately.

Another idea is to pin the dainty articles of infants' wear near one end of a dry sheet, then fold the sheet over, making the hems meet; this brings all of the fine garments inside the fold of the sheet. There is no whipping or beating, and no danger of tearing or soiling delicate fabrics.

It is one of the most trying ordeals for the woman who does her own laundry work to go from a hot room filled with steam and vapor to the chilling and bitter wind outside. After being put through the wringer, every piece should be carefully shaken out, and all pieces of the same kind may be placed together. If clothes are put into the basket in proper order and condition, the work of hanging them out is reduced at least one-half. They also dry in better shape and are easier to iron. Clothes pressed into folds in the wringer, then hung upon the line still in wrinkles, and dried that way, are exceedingly troublesome when they reach the ironing board. It is an axiom of the housekeeper that "work properly begun is half done."

The war calls for the team work of soldier son and soldier father—the hero of the trenches and the hero of the furrow.

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LIVE STOCK

WHY KEEP SHEEP ON THE FARM

A. L. Myers.

In these days of excessively high priced wool and mutton, many people who have formerly despised sheep are becoming interested in them. There are indeed many reasons why sheep should be kept on the farm. In fact, if we are to continue wearing wool clothing and eating mutton, sheep must be kept on the farms. The ranges are rapidly disappearing. The open ranges are being broken up, the forest reserves are stocked to full capacity, Australia and Africa are producing sheep to the maximum and still there is a shortage of forty million pounds of wool and a corresponding shortage of mutton. With these conditions before us, there will always be a demand for wool and mutton which will make sheep raising a lucrative part of the farm business.

The chance of loss is small in the farm sheep business since comparatively little capital is invested in the flock even at the present high prices. It takes a rather wealthy man to now stock up in cattle but a man of limited capital can buy a few sheep and very soon have a large flock, returning most generous profits.

Sheep return two cash crops annually, wool from the breeding flock in the spring and mutton from the lambs in the fall or winter. The advantage of cash coming in at different times throughout the year, rather than all at once, is appreciated by all farmers.

Sheep make more economical gains than any other type of livestock. They stand next to hogs in the amount of gains per given amount of feed consumed. Their advantage over hogs lies in their ability to consume roughage, hogs requiring a large amount of concentrates. They will not only eat anything that cattle will and make more pounds of gain on it but will also eat weeds and brush, on which a cow would starve. Due to their weed consuming ability, they will clean a pasture of weeds so that often it will support as many cattle as it formerly did besides feeding the sheep. They also keep the fence-rows clean and are excellent gleaners, picking up all waste grain and even eating much of the stubble after the grain has been harvested.

Another big reason why sheep should be kept on the farm is their ability to improve the soil. Not only is their manure of higher value than that of most animals but due to their roving habits of grazing, it is thoroughly scattered. Because of their sharp hoofs, it is well tramped into the soil where it is soon available for plant growth. Due to the fact that they always search out one of the highest parts of the pasture to fold at night, they leave more manure there. This is an advantage as these places are usually less fertile, hence need the manure more than other portions.

In addition to these reasons which are in a measure selfish ones as they mean money in the farmer's pockets, there is a patriotic reason for the keeping of sheep. Throughout the Nation and the world, there is a call for meat and clothing which cannot be met unless everyone does his part. Sheep simply mean more livestock on the farm for they do not limit other livestock when kept in small numbers. Hence sheep should be kept on practically every farm. Just as they have been foremost in the promoting of civilization ever since Biblical times, so will they now be one of the strongest factors in defeating the Kaiser and "making the world free for democracy."

FEEDING THE COLTS.

The young colts should be well fed this year regardless of the price of grain. There has never been a time when strong vigorous horse power has been more needed on our farms than at present. This condition, which will surely continue, makes it necessary that the colts be well fed in order that they shall grow into the biggest and best horses possible. The market calls for good big horses and pays well for them. Hence, if any surplus horses are to be offered on the market it is necessary that they be well grown in order to bring the big returns in dollars. Prices of grain are high, it is true, but we are raising horses that will produce more high-priced grains and which will sell for a profitable price on the market.

The old substantial crop, oats, is yielding splendidly and assures an abundance of the very best of colt feed. There is no successful horseman but who is fond of feeding oats liberally. One horseman, who is recognized as the best feeder in the state, says that he has his colts eating regularly before they have reached the age of three weeks. He often sprinkles brown sugar over oats that he has put out for his colts in order to make it more appetizing.

Proof of the correctness of this man's practice is found in the fact that he sells mature geldings regularly at from $675 to $750 per pair and pure breds at from $1,250 to $2,000 per head. Recently he sold a pair of four-year-old geldings for $700. They had been put to work at the age of three and had worked regularly throughout that year. At the age of four they had helped put in 180 acres. Thus they had more than earned their keep from the age of three years. Had these young horses not been well fed from the start they never would have developed to their maximum. Neither would they have been as useful on the farm and it would have been impossible for such a satisfactory price to have been received.

Summer feeding keeps the colt growing. On pasture we find good horsemen feeding their colts in a pen or creep where they are away from the older horses. In the barn we find boxes arranged at low places where the youngsters can reach them and which are out of the way of the dams and older stock. As a single feed it is doubtful if anything equals oats. However, when prices permit, it may be advisable to feed a mixture. Oats, 6 parts; bran, 3 parts and oil meal, 1 part, is found to give very good results in securing gain and thrift. Later in the season, if the price of corn is reduced to a fair level, it may well be used as a portion of the ration. —H. E. McCartney.

FIT COLLAR TO HORSE

Dr. J. W. Benner.

A collar should be fitted to the horse and not the horse to the collar. The collar that is too large should not be used on a horse in the hope that he will grow large enough so it will eventually fit. A collar that fits well in the spring may not fit at all in the fall.

When one is fitting a horse with a collar the animal should be in a natural standing position on level ground with his head held at the heigh maintained while at work. The collar, when buckled, should fit snugly to the side of the neck and its face should follow closely and be in even contact with the surface of the shoulders from the top of the withers to the region of the throat. At the throat there should be enough room for a man's hand to be inserted inside the collar.

Many Materials in Use.

The styles of horse collars are created mostly by the use of different kinds of material in their construction. Such materials as heavy duck, ticking,

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and leather are used either alone or in various combinations. All-metal collars may also be purchased, but are not so much used. The stuffing used in horse collars is coarse material, such as rye straw, curled hair, and cotton fiber.

The all-leather collar, stuffed with seasoned rye straw with a layer of curled hair in the facing, is a satisfatcory kind. The cost is somewhat greater than on the collar made wholly of duck or ticking with cheaper stuffing, but the service given by this collar is usually so far ahead of the latter that the all-leather style proves to be the cheapest in the end.

The collar selected should be examined carefully every time it is going to be used. All dirt and sweat found on the face of the collar should be cleaned off and the surface which comes into actual contact with the neck and shoulder of the horse should always be smooth and hard.

Care For Animal's Shoulder.

In order to prevent galls and more serious condition it is not enough to give close attention to the selection and care of the collar. The shoulder of the horse should always be watched and given special care when the animal is at steady work. If the selection of the collar has been properly made and all other things in regard to this piece of harness looked after, the care of the animal's shoulder is a simple process. Under these conditions washing the shoulder with soap and pure water, after the harness has been removed at the end of a day's work, and thoroughly drying the part by rubbing it with clean cloths, is all that is necessary.

The colt that is being broken to work in the spring should be started in on light draft while the weather is still cool, so that his shoulders, as well as the rest of his body, may be toughened and put into good working condition before the hot summer weather starts.

Other common causes for diseased neck and shoulders on a horse where preventive measures should also be applied are implements with excessive tongue weight, or excessive movement in the tongue when the implement is being drawn, sidedraft, a free going animal hitched to a slow or lazy one, walking on a ridge or in a furrow that is too narrow, which may cause the animal to slip constantly or sidestep and in this way injure his shoulders. Besides, the neck and shoulders are exposed to the usual number of mechanical or accidental injuries.

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WHAT DOES IT COST TO PRODUCE A POUND OF PORK

Prof. W. J. Carmichael in Berkshire World.

Farm methods vary so much that it is difficult, if not impossible, to reach any definite conclusions about the cost of production of pork under any and all conditions. The method of handling the swine and the ages and number of the females which are kept are among the most variable factors and are the difficult ones with which to deal. I believe that in order to make a careful study one must take the average farmer, if possible, as a unit, and if that does not seem feasible, some other unit should be chosen. I have used the farmer producing about one carload of hogs anually, because such is a convenient unit for marketing and is, I believe, in proportion to the possibilities of the average farm and farmer.

During the year 1916, supervised farm accounts were carefully kept on a number of Illinois Farms where swine were raised to the extent of producing about a carload of swine in the twelve months. A study of 29 of these farm records shows that the average increase in weight of pork per sow was 1,218 pounds (or about 5.4 pigs per sow), the hogs having been marketed at an average weight of 225 pounds. A distribution of the approximate costs on these farms follows:

1.0 per cent horse labor.
1.0 per cent equipment expense.
2.5 per cent overhead charges.
3.8 per cent interest.
3.5 per cent man labor.
5.1 per cent rent.
83.0 per cent feed and medicine.

100.0 per cent.

On these farms corn furnished the big bulk of the feed. In nearly every case it was supplemented with some purchased feed as well as some home-grown small grain or pasture. The consumption of corn was at the rate of 6.6 bu. per 100 pounds of pork produced. By converting the pasture into corn equivalent at the rate of 50 bu. of corn per acre pastured, which is none too high on the farms in question, and allowing for a corn equivalent for the supplementary feeds, it seems that the food consumption was at the rate of 8.2 bu. of corn for each 100 pounds of pork sent to market or increase in swine flesh on the farm during the year. To this must be added the cost of the other items of expense, such as labor, interest, and overhead. Assuming that these are approximately 17 per cent of the total cost of production, we find that the corn equivalent for each 100 pounds of increase in pork on these farms was about 10.0 bushels. This does not make any allowance for (a) decrease in value per pound for the sows and boar; (b) risk from disease outbreak (no cholera was found in or near any of these herds during the year) and (c) profit for the farmer. It must also be borne in mind that these men were above the average in managerial ability and had more consistent and perhaps more careful supervision than is possible or practicable to apply to all farms.

Some work done at the Nebraska Experiment Station relative to the cost of production for the 50 pound pig indicates that the feed cost per 100 pounds of pigs varies from 7.2 bu. of corn to 11.9 bu., or on an average about 9.5 bushels. To this we must add the feed required to increase the hog to 250 pounds weight, which is very liberally allowed as 8.9 bushels of corn for each 100 pounds of increase. Assembling this data, it seems that each 100 pounds of pork in the 250 pound market hog should cost, under nearly average conditions, about 9.0 bushels of corn, or corn equivalent for feed along. Adding to this the 17 per cent of the cost of production, as referred to previously, it seems that the cost should approximate 10.7 bushels of corn for the 100 pounds of pork, having made allowance for the decrease in value per pound for the boar and sows, but none for disease, risk, or profit.

Assuming that you are interested in an estimate as to the costs during the various months, I am giving below the percentage costs as estimated for the four months the sows are carrying their pigs and the eight months required to fit the shoats for market and bring the sows up to their normal weight:

Month	Per Cent of Feed Fed
1	3
2	3
3	3
4	4
5	5
6	6
7	7
8	8
9	10
10	13
11	17
12	21
	100%

The risk in hog raising is a very difcult item to estimate. After considerable direct communication with Illinois stock men and observation of their experiences, it seems to me that an allowance of 10 per cent for risk is quite sufficient. Adding that to the liberally allowed 10.7 bushels per 100 pounds of pork, we have 11.8 bushels as the cost to the average farmer for each 100 pounds of pork on foot in his feed lots. Just profit should be added to this to renumerate him for his managerial ability. However, if he is very careful, he will have a fairly liberal margin of profit with the allowance which I have made. In order to encourage extensive production, some real and apparent inducements must be offered.

In thinging over the whole proposition of pork production on an increased scale, presumably involving holding the hogs to attain at least a weight of 225 pounds, and probably more, I deeply feel that a premium should be given the producer of these heavy hogs inasmuch as his costs are undoubtedly very much greater than those of the man who markets light weight hogs. Each individual pound of pork put on the hogs after weanning time normally requires more feed than the preceding pound. Risks are also greater with the heavy hogs. In my opinion, it is just as important to have a sliding scale for hogs of different weights as to consider the corn price at different months of the hog's life, if we are to make an equable distribution of prices which will insure the farmer that the swine business is on a remunerative basis when viewed from all angles. If we will assume that the 225 pound hog is our standard for market and the value per 100 pounds, as expressed in bushels of corn, is 100 per cent, then it seems that the man who markets the 300-pound hog should receive approximately 105 per cent, whereas the man who sends his hogs to the packer when averaging 150 pounds should get but 90 per cent of the standard allowance of bushels of corn per hundred pounds of pork.

LIKE BEGETS LIKE

It is not superfluous for us to print the axiomatic phrase "like begets like." This thought should be brought to the attention of the farmer and particularly the livestock breeder repeatedly. Select good seed no matter whether it be animals or plants that you are breeding. Get stock that comes from strains that have proven their ability to beget their kind uniformly. Remember there is no such thing as standing still; your herd is either getting better or degenerating all the while. A constant vigil is essential to keep the stock up to standard. Persist continually to better your production and better profits are sure to follow.

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Remember, a serum may be "clarified," or "clear," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. Cutter's Refined Serum is not only clear but it is Germ Free.

Write for our two new booklets, "Hog Cholera Prevention," and "Special and Detailed Information Concerning Hog Cholera Immunization." From the latter you will learn what constitutes good work and why a competent veterinarian should be employed.

Prices.

Cutter's Refined, Germ-Free, Anti-Hog Cholera Serum is 2½ cents per c.c.

Cutter's Regular, or "old type" Serum, is 1½ cents per c.c.

Cutter's Hog Cholera Virus, for use with either type of serum, is supplied at 1½ cents per c.c. It is dependable.

We prepay shipping charges.

Let your veterinarian order for you and encourage him to be liberal in estimating the amount of serum to use: safety lies in giving more than may be needed rather than trying to figure too fine.

Should he be prejudiced in favor of some other serum, there is a reason that concerns him but not you, except insofar as it should make you more insistent that Cutter's Serum be used. In such case do your own ordering direct from us. You will get "Cutter's" promptly, prepaid.

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POULTRY

ECONOMIC VALUE OF POULTRY

A decade ago poultry was looked upon in this country as of little economic value. Both poultry and eggs were cheap and the farmer paid practically no attention to methods of feeding and breeding; in fact, he considered that the chickens his wife was bound to keep were a nuisance. The wife, though she had no definite knowledge of the cost of maintaining her birds, claimed that it amounted to little or nothing because they picked their living on the farm principally from what would otherwise go to waste. In the summer they lived on insects and weed seeds picked in the fields and to that extent were a real benefit to the farm; in the winter they found their living about the feed lots and pig pens with the addition of a little extra grain from crib and bin. For this small amount of extra feed, she argued, the chickens supplied the table with wholesome and nourishing food and besides paid part and sometimes all of the grocery bill.

As a rule the farmer paid little attention to these stories and refused to be convinced that poultry raising was really a profitable enterprise, contending that if a record was kept of the grain fed, the cost of the feed would be greater than the value of the products derived from the flock. In many instances that was true because the birds did not receive the care and attention necessary to make them profitable. The mere fact that hens pick up waste grain does not necessarily mean that they return a profit. There are good and poor layers in every flock of hens, just as there are good and poor milkers in every herd of dairy cows, and if no attention is paid to keep the flock or the herd up to standard, in a short time the poor individuals outnumber the good ones. When this stage has been reached instead of a profit being reaped at the end of the year an actual loss is often sustained.

In recent years much definite knowledge concerning the management of the farm flock has been acquired and today the poultry industry is recognized as one of the important and most profitable branches of agriculture for the money invested in it. As other lines of agriculture, farm poultry raising needs careful attention. It must be conducted on sound business principles. Due attention must be given to breeding, feeding, and housing if profits are to be derived therefrom. It cannot be conducted in a haphazard manner and be a success. Modern equipment is required for handling the flock economically, and special knowledge is needed concerning feeding and breeding. Lack of suitable equipment for handling both young chicks and old birds is lacking on too many farms and the result is heavy and unnecessary losses and consequently small profits with frequently no profits at all.

For heavy winter egg production early-hatched pullets are essential—pullets that reach maturity before cold weather so they may be ready to lay by November 1st. Year-old or older hens will not lay that early; they seldom begin till the approach of spring when eggs become cheap and feed high in price. To hatch out chicks early, incubators and brooders are necessary; in fact in the hands of the careful poultryman they are more economical for hatching and brooding than the hen at any time. Keep the hen laying eggs throughout the year as long as possible.

The average farm flock should lay 120 eggs per hen per year instead of less than half that number as is now the case. We have heard farmers remark that the government is in small business when it is sending men through the country to urge the people to raise more poultry; but they are not posted in regard to the value of the hen as a converter of raw grain into a high type of human food. A properly-fed hen laying 120 eggs in a year will produce a pound of eggs from 3.5 pounds of grain, while a steer takes three times that much feed to produce beef having the same food value. Neither the hog nor the sheep can compete with the hen in converting feed into meat and eggs. On forty pounds of whole grain at 2.25 cents a pound and twenty pounds of properly balanced mash feed at 3 cents a pound, a good hen will produce 120 eggs, weighing fifteen pounds, in a year. And these eggs have a fuel value equal to eleven pounds of sirloin or fifteen pounds of round steak. Similarly a hen or a young chicken can also produce a pound of meat from less grain than can any other farm animal, hence the reason why Uncle Sam sees in the hen one of his important allies on the farm.

According to the latest available figures the Missouri hen adds annually close to 80 million dollars to the farm income. Of his amount 53 million dollars' worth is sold off the farms of Missouri while the remainder is consumed on the farms. On the same basis the Kansas hen produces annually 17 million dollars' worth of food products, which is equal to one-fourth the value of all the cattle, hogs, and sheep annually sold for slaughter in that state, greater than the value of all the milk and cheese sold, and one-third greater than the money annually received for the state's output of butter. In Missouri the products of the hen in 1916 had a value very nearly equal to that of all the wheat, oats, and tame hay produced in the state that year, and two-thirds the value of the state's corn crop. The hen is a bird of great economic value and a most important factor in the country's problem of feeding the world. Let us give her every chance this year to do her best.—The Farmer and Stockmen.

POULTRY HOUSE SANITATION

Many of the diseases which cut down farm poultry profits can be traced to a lack of sanitation in the houses. We have found that the open-front house is the first step in the prevention of disease. Hens need plenty of fresh air and they can stand a cold temperature. It is damp, impure air and draughts which cause colds and roup and devitalized flocks. The house with the open front and the tight back and sides insures a good supply of fresh air and it will not be damp if it is kept clean. Old burlap sacks can be used on frames and these cheaply made curtains can be lowered on extremely cold nights or when the storms are blowing from the south.

In maintaining the house in a sanitary condition we can begin with the floor. It must be raised sufficiently above the outside ground to keep out the moisture. If the foundation of the house is of cement, and the cement wall extends a foot above the ground, it pays to fill in that extra foot with gravel and sand, and in that way insure a dry floor. Cement makes an excellent floor when thickly covered with litter, but an earth floor will be satisfactory in the farm poultry house, if the cement wall extends deep enough into the ground to keep out rats.

The litter should be emptied into the house until it is about one foot deep. The birds will soon scratch it to pieces and work it down to a depth of about four to six inches. Wheat or oat straw makes an excellent litter. When the litter becomes tough and slightly moist, we know that it is fine fertilizer, but unsafe to leave in the poultry house, and it is removed and spread on the berry patch, or on some field requiring the fertility. Dirty litter is the cause of many sick birds during the winter, and it costs very little to change the litter on the farm where there is usually an abundance of straw.

The dropping board is necessary, and it should be cleaned every day. Hang a bushel basket and a hoe on convenient nails in the poultry house, and make it a regular duty to clean the board immediately after feeding the birds. The droppings can be stored in barrels behind the house, until they are ready to be spread on the garden. When a dropping board is not very carefully constructed of matched lumber, there will be many cracks remaining to catch the dirt and form breeding places for mites. Covering the board with heavy roofing paper will assist in keeping it clean for at least one year.

The roosts should be smoothly planed, "two by three's" attached to cross-pieces which can be hinged to the rear wall of the house. When cleaning or spraying the dropping boards, the roosts can be raised and hooked to the ceiling. This enables the poultryman to thoroughly spray the under side of the roosts, where mites are especially apt to hide. We have found that the mite problem consists in protecting the roosts. If we paint new roosts thoroughly with kerosene oil, and then renew the application once each week in the summer, and once each month in the winter, we have found that there is absolutely no troubles from mites. Some breeders add one part of crude carbolic acid to ten parts of the kerosene, and find that it is slightly more effective. This mixture makes a cheap and efficient disinfectant for spraying the entire house. The barrel orchard sprayers are desirable for spraying poultry houses. Some breeders attempt to spray their houses with small hand potato syrayers, but this means hard unnecessary work, and results are often unsatisfactory. Whitewash is still used on many farms, and it gives the interior o fthe houses a clean bright appearance. However, we have found that the whitewash has a tendency to make the house slightly damp, and we believe that the oil sprays are more effective and less expensive to apply.

The feeding utensils are frequently disease carriers. Water pails should be scalded frequently, and placed on a low table where they will not be scratched full of litter. When wet mash is fed in troughs, the troughs should be hinged to the wall, so that they can be protected from the litter after feeding time. They should also be carefully cleaned at frequent intervals. Buttermilk and sour milk should be fed in ordinary crocks, as they are heavy and not easily tipped over, and they can be scalded without danger of breakage. These crocks should also be placed on the table, to protect them gives the interior of the houses a clean scratching in the litter.

Perhaps the most important point in keeping a house in a sanitary condition, is to breed from strong vigorous stock and keep the birds free from lice. We treat every bird with blue ointment twice each year by rubbing in a piece beneath the vent about the size of a pea and then giving a slight smear under each wing. I have never seen lice in poultry houses unless they were also on the birds and by protecting our birds with the blue ointment we have found that our lice troubles end immediately.

Placing permanganate in the drinking water until it is a dark crimson will assist in preventing the spread of colds and this is an important factor in keeping the house in a sanitary con- from the dirt, when the birds are dition. Poultry houses require constant attention if the flocks are maintained in the healthy condition which brings profit to the farmer. It only takes a short time each year to carry on the system of sanitary management which makes the farm flock an important item in the yearly income. It simply means an hour here and there and a few half days with the team, and while the work can never be neglected entirely it really does not take an exorbitant amount of time compared with the satisfaction and profit to be derived from a healthy flock in a sanitary house.—R. G. Kirby.

WITH THE BROODER CHICKS

With the chicks coming fast, one hatch following another, some poultrymen, and women too, take it for granted that the chicks of later hatches are not as strong as the early hatches. Now, while there may be some little truth in this idea, it is rather overworked. The fact of the matter is that the person having the care of the chicks has become a little tired of routine and has commenced to shirk some of the things he or she did for the first hatches. Patience, a much-needed element in dealing with little chicks,

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has become just a little frayed out and the chicks are accused of being "little fools," etc. The fault is not with the chicks but with the poultryman, who takes it for granted that the chicks on hand have had his experience.

Don't Use Dirty Brooders.

Again I have seen men who actually put a new hatch of chicks into a dirty brooder from which chicks six to seven weeks old had been taken. The brooder had not been cleaned during the period the first hatch were under it. Now it was not possible for those chicks to do as well as the first hatch, yet the man really expected them to. I never found out how far his expectations were realized, but it is safe to say that out of one thousand chicks if he raised one hundred he got more than he deserved.

Perpetual Patience.

To succeed with the chick raising, there must be as much patience expended on the last hatch as on the first; each lot must be taken in hand and trained to the brooder warmth, or they will suffer some night when it is a little cold. This is one mistake that is frequently made—trusting to warmer weather—but it is not safe. Train the chicks the first few days to find their way to the warming up place, then they will always know where to go if they feel chilly. Don't crowd.

The next thing in late hatches is to put no more in than you would for an early hatch. There is just as much danger, or rather more, for if the night happens to be warm during the early hours the chicks spread out more; then if it turns cold they are very liable to bunch up, so it pays to be just as particular in this respect as though it were in winter hatch.

Preparing The Brooder House.

If the brooder house is a stationary one, it should be cleaned and all dirt from the preceding hatch removed, the floor covered with clean sand, then short litter to top off with. The runs should be spaded up and sown to barley, oats or some other green feed that will be tender and ready for the chicks as soon as they can be let out. Shade in chick raising is not needed in the caring for early hatches, but it is one of the important items in the late hatches. Natural shade can be given by a little management in nearly all yards, but where that is not possible we must resort to artifical shade of some kind. Gunny sacks at fifteen cents each are out of the question, but a coating of linseed oil on newspapers will serve to toughen them so that they can be laid across wire mesh of almost any size and held in place by narrow slats or boards.

It does not need a very large space to serve as a shelter, the chicks soon learn where to go and if the ground uderneath the shade is kept moist by throwiig a bucket or two of water under every evening the soil will be kept loose by the chicks bathing in it.

Everlasting Warfare on Mites.

Saving late hatches may save some of our boys' lives, so don't neglect them. Keep them clean, be watchful for lice and mites. The late chick has many more enemies than the early chick to contend with and requires more watching to see that his enemies do not get too strong to prey on him. Any good dip will keep mites down. Kreso Dip No. 1 is as cheap and easy to use as any of them, and if troubled with fleas, spray the ground around where the chicks run as well as the walls and floors of houses and brood coops, and where possible turn coops up to the sun. Mites do not like sun. What they like is a rather moist, dark place—the darker the better—so by giving the coops a good airing in hot sunshine you are making life unbearable for mites.— Pacific Rural Press.

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CEASE RAISING VERMIN

W. L. Blizzard.

Did you ever stop to think how much pork two or three million hog lice will eat in a week? The loss does not end with what the louse eats, either. It takes a more phlegmatic animal than a hog to be contented and happy, and grow fat and prosperous looking, in spite of a horde of vermin that keep crawling around, hunting for new places to make a puncture.

Lice Interfere With Growth.

When lice increase to large numbers, as they are likely to do if not destroyed, the skin of the hog becomes covered with scales and sores. In extreme cases swelling and inflammation develop as a result of the piercing of the skin hundreds of times a day by the parasites. The irritation thus produced is an annoyance to the hogs, evidenced by their restlessness and by their rubbing against any convenient object. Such affliction interferes with the growth and fattening of hogs, especially of young pigs. Lice not only produce direct injury to hogs, but also leave them in a debilitated condition, which means a greater susceptibility to various diseases.

Dipping is Insufficient.

To dip your hogs is not enough, if they are badly infested. The buildings where they are kept should be thoroughly treated. The lice crawl from the hogs and hide in the crevices of the building, and in the bedding. If you go to a great deal of trouble to rid your hogs of lice and neglect to destroy those that are hiding in the building, it is only a short time until the hogs are badly infested again.

A good plan is to apply to the inside of the hog shed a generous amount of whitewash, to every four gallons of which a pint of crude carbolic acid has been added. This is the most convenient method of combating lice in a building.

Wet Entire Animal.

The most effective metnod of dippings hogs is by the use of a dipping vat which compels them to swim, and which is deep enough to allow them to be pushed under. In applying dip, care must be taken to wet all parts of the animal's body, as lice are commonly found on the inside of the legs, behind the ears, on the breast, back of the fore legs, or in the folds of the skin on any part of the body. Use some reliable dip, and if necessary repeat the treatment several times.

WATCH THE FARM SEPARATOR

L. W. Morley.

Is the separator running all right? If not it should be looked after at once. Be sure that the machine is level and securely fastened to a firm foundation. Remember that the speed of the separator is an important factor in its efficiency. If the crank is turned too slowly an excessive amount of fat will be left in the skim milk. The milk should not be allowed to enter the machine until full speed is attained.

A temperature of 90 degrees Fahrenheit is best for separation. If milk is cold when separated there is too much loss of fat. If the milk becomes cold it may be warmed by placing the can of milk in hot water. It is preferable, however, to separate the milk soon after it is drawn and before it becomes cold.

The separator should be kept clean if the highest efficienecy of the machine, and the best product is to be obtained. At the end of each separation flush out the bowl by pouring into the supply can about two quarts of luke warm water. The parts may then be washed with warm water and then rinsed in scalding water after which they should be allowed to dry.

PAINTING FARM BUILDINGS

Wm. F. Purdue.

There is no question about the profit in keeping all buildings thoroughly painted, but while painting with poor materials is possibly better than not painting at all, yet by far the greatest profit will be derived by using only good materials in painting farm buildings. Really, the cost of good paint is only a minor item in the keeping of buildings well painted, the cost of the labor required to apply it being the larger factor, so that where home labor is used to apply it the greater expense in painting is eliminated. In any event, one cannot afford to use any but the best paint on account of the time required to apply it, and the resulting cost of the application, since the good paint will last much longer and application will not need to be so frequent as where the poorer grades of paint are used. The cheap grades of paint may give a good appearance to the job for a time, but they will not preserve the wood as will paints mixed with linseed oil, which not only gives the paint a bright and glossy appearance, but acts as a preservative of the wood by keeping out the moisture and the germs which cause decay.

Any of the standard makes of prepared paints can be used by anyone who will carefully follow the printed instruction accompanying them. However, where the best results are wanted from paint, the practical painter's knowledge makes it well worth what it costs to employ him.

A new building may be primed with prepared paint or with a coat of lead and oil mixed in the proportion of five points of lead to one gallon of oil. Something always depends upon the character of the wood, however, as to how thin the priming coat should be. If the wood is soft and absorbent the paint should be made very thin for the priming coat. If a ready-mixed paint is used it must be thinned with about two quarts of raw linseed oil and one pint of turpentine to the gallon of paint. If the timber is hard and non-absorbent the priming coat must be thicker. One quart of oil and an equal quantity of turpentine will be a sufficient addition to each gallon of paint. Great care should be exercised in putting on the priming coat brush it well into the wood. This coat is the foundation for the succeeding coats and it must be put on right. The priming coat, if properly mixed and applied, will dry with a dead surface—that is, without gloss. The next coat will adhere to such a surface far more firmly than to a glossy surface.

A building that has been painted so long that the paint is dry and cracked or chalking should be gone over and the old paint which is peeling scraped off with a steel scraper; sandpaper the worst spots where the paint cannot be detached. If the old paint is dry and absorbent, thin the new paint with oil and turpentine, and put on the finishing application with a second coat of the paint as it comes from the can.

When a building has stood long enough without paint to become weather-beaten the clapboards will be more or less warped, and many off them split at the ends where the nails hold the boards in place. Before the painting is done the old nails should be driven in and, where necessary, put in new nails in order to draw in each board and make it lie close to adjoining boards. Next put the priming on. This is best done with pure linseed oil, for you cannot put a coat of paint on an old weather-beaten building without showing laps, because the paint sets so quickly. If a coat of clear linseed oil is first applied the pores of the wood will be sealed sufficiently to hold out the oil of the next coat, so that it may be put on smoothly and evenly. This is very important.

A safe rule is to paint only on dry surfaces in dry weather, and to allow a week between coats. Cold weather is really better than hot weather for new paint, provided the thermometer does not fall below 40 degrees before the paint can harden on the building naturally.

FIVE MINUTE SPONGE CAKE

2 beaten eggs, 1 cup of sugar, 1 cup of flour, 1 teaspoonful of baking powder mixed with the flour. Mix well and add last of all, 1 cup of hot sweet milk. Use any sauce preferred.

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Care of Farm Harness

R. B. Rushton

There is never a single week, nor hardly a day in the year but what I have occasion to use some of the harness mending tools. On any farm where as much as a half dozen horses are kept with their full and complete equipment of harness of different kinds and several vehicles of different sorts, there is constantly coming up some repairing to be done. It is therefore important that one should keep a good kit of tools, and I don't doubt that almost all thrifty farmers have the same opinion .

While I don't have a shop for harness mending and such work regularly equipped, I do have a place where I can keep the tools and do the work; and while I don't claim to save a great deal of expense in actual money. I often save a lot of very valuable time by doing in a few minutes work that I would lose several hours in sending to a shop and getting some one else to do.

If I am in a right big hurry when something breaks, to mend and use it, I often use copper rivets. But, of course, one cannot make a lasting job or as nice looking as when sewed. I try to keep a bunch of different sized waxed ends, so that I nearly always have one to suit any sort of job when I get ready to use it, whether it is a bridle rein or the traces of a set of harness to mend.

As a clamp is a very necessary tool in sewing leather, one ought to have one, but it is not necessary at all to buy it. The best way to make one is to have a hardwood block six inches long, four inches wide and three inches thick. Then have two pieces of hardwood board, very smooth, four inches wide and a half inch thick. One of these pieces can be screwed on to one side of the block, and the other may be attached to the other side with a hinge.

The block should, as stated, be three inches thick, but should be only two and a half inches on one edge so that when the boards that form the jaws of this clamp come together the edges can get close enough to grip leather or other thin articles and hold them secure. In order to make the clamp hold what is put in it, the easiest way is to have a "tee bolt." That is a bolt with a long head. This head should be as long the width of the jaws of the clamp. And on the other end of the bolt, under the nut, there should be a flat bar long as the board is wide, with a hole through the middle large enough for the end of the bolt to come through so the nut will hold the bar or strap against the side of the clamp, and it can then be screwed tighter without risk of splitting the wooden clamp.

Into the jaws of this I put two pieces of leather to be sewed together, so the line of sewing will be along the edge of the jaws of the clamp, and with awl and waxed end, can do about as good a job of sewing as a regular harness maker.

I have found that it always pays to keep on hand some waxed ends, and just as soon as a rip is noticed in any of the harness, mend it at once. It saves time and it always makes the harness look better and last longer.

In this connection I will say that it is very important at the end of the working season to clean up and oil the harness. It will add a hundred per cent to the life of it. I soak my harness that is to be oiled in warm water for one night. Then hang it up to dry, and while still soft, rub in to it all the neat's foot oil I can get it to absorb. After it has been hung up for 24 hours I put on a coat of harness blacking of dull finish, and later some with polish in it.

It pays to do all this, not only in the longer life of the harness, but in the satisfaction of having your rig look nice and well kept. When I drive I want my outfit to look as well as anybody's, and by careful management I am able at all seasons of the year to have them in nice shape.

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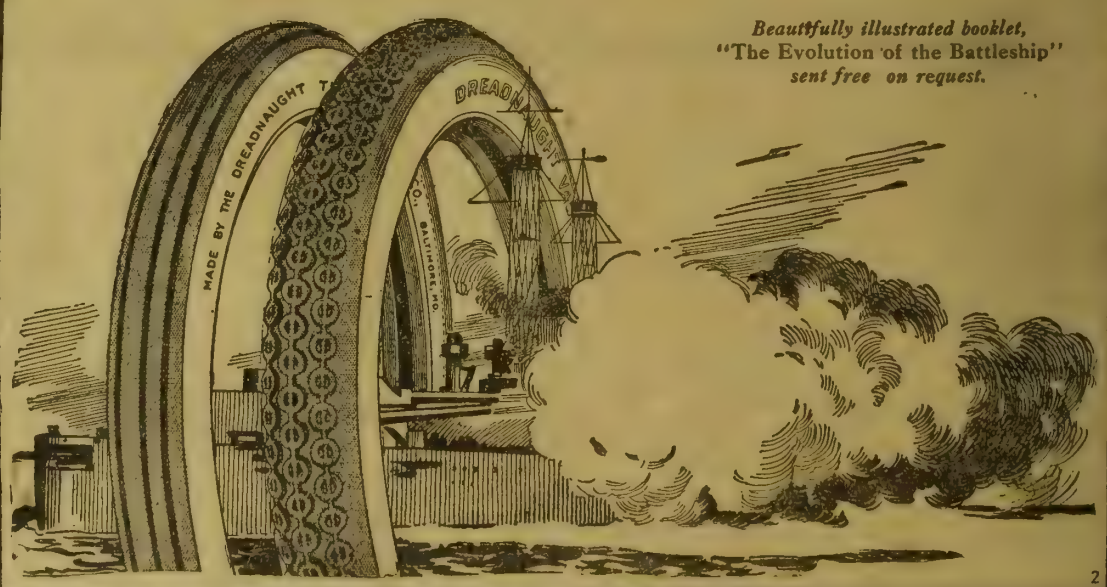

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FUNCTION OF THE TONSIL

In the course of an entertaining dissertation on tonsillectomy, the Dayton, Ohio, News sapiently remarks that "the functions of the tonsil, if it has any at this time, are not very well understood."

It is possible that "the functions of the tonsil are not very well understood" in Dayton, Ohio. At this distance one cannot gauge the advancement of medical and surgical science in that benighted Ohio community. But in Salt Lake the functions of the tonsil are thoroughly comprehended by the gentlemen of the medical profession and by such laymen as may require medical attention.

The function of the tonsil—draw nearer, children,—the function of the tonsil is precisely the same as the function of the appendix. They are located in widely separated portions of the anatomy and, at first blush, might seem to have absolutely no relation. But they are intimately related. Four appendices are equal to one automobile while the number of tonsils required to buy an automobile varies with the financial circumstances of the patients. The rich man's tonsils properly handled can yield wonderful returns.—Exchange.

ANIMAL PRODUCTS SAFE AND PROMISING

Even under present conditions of farming it is wise to look ahead, and plan for after the war. From the figures that are being sent out by government officials there is a shortage, not only now, but far into the future of livestock. Just at the present time feeds are high, but there must be a relative value between feeds and price of livestock it is coming nearer all the time. No farmer can afford to change his farming practice with the change of the market prices. The man who is going to make money is the one who has a definite plan of rotation with all the livestock his farm will support.

It is just such conditions that we are now going through that makes men loose their heads and make changes they are sorry for afterwards. The future looks promising and safe for all kinds of animal husbandry and animal products. There is going to be a demand for the better kind, the higher quality and right now is the time to weed out the scrub of all kinds and produce the better ones. Secure pure-bred cows, horses, sheep and hogs if possible, if not get as near as you can to pure bred and breed up.

Send in your subscription today.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 45 JUNE 8, 1918

The Silo Will Help Production

The silo will help to increase the production of all kinds of livestock and their by-products, because it helps to lower the cost of production. In other words a farmer can produce 100 tons of ensilage cheaper than most any other kind of feed. To the farmer who is asked to increase his production, feed is an important factor. A balanced ration for the dairy cows, and a better feed for beef cattle is available when one has plenty of ensilage.

There are two ways of making money on the farm. One is by getting high prices for products. The other is producing these products more cheaply. When the prices rule lower the farmer looks to find how he can produce more cheaply. Naturally, since the silo is offered as a solution, he wonders whether it will meet his own particular needs especially. I have known the value of the silo by coming in contact with many users. As a feed for beef animals, both for the block and show purposes, it has given especially good results. All feeders admit that good pasture is the ideal place for the animal to get the very best results in gains of flesh, although often good pasture is not at hand and its substitute must be found. Grass is juicy, green, succulent, palatable, nutritious and digestible. Corn or sorghums cut green in the field and placed in the silo are juicy, succulent, palatable, nutritious and digestible, and come nearest being a substitute for pasture of anything that can be had. No one will argue that it equals grass pasture, but no one can deny that it is a substitute of almost equal value. When we consider that corn, sorghum, oats and pea grow so much more tonnage to the acre, we must concede that they excel pasture almost four to one. The only advantage the pasture has is that it eliminates the labor of feeding, but since we can have pasture only a short time in the year, common sense will tell the farmer that the silo will make him independent of the season, and that he can not afford to do without it.

Another point in its favor is its convenience. With silage ready for feeding every day in the year much less help is required to care for a herd of cows or cattle than will be needed where it is necessary to cut or shred fodder in the winter time. Ten to twenty minutes per day will be all the time required to get out the silage and feed the herd. Practically all the talk about silage for feeding has been and is concerning its use for winter feeding, but I insist it is almost as necessary in the summer as in winter. If we could be sure we would have plenty of rain and resulting good pastures all summer, silage would not be so necessary, but almost every summer brings a dry period when the pastures get poor and stock fall off in flesh and the cows shrink so in their milk that unless we feed them it is hard, even if later we do have good pastures, to get the cows back to their normal milk flow.

Nearly all of the best dairymen like to supply some feed to their cows even when on the best of pastures, both for its food value to the cows and for its manurial value to the pastures and nothing is more convenient for this purpose than good silage. Every farmer who feeds livestock cannot well afford to be without a silo. Just a little experience in the use of silage will convince any man that the silo is an absolute necessity.

As the economy and efficiency of the silo there is no question. It is not a get-rich-quick scheme, but it is simply a means to an end. It is one means by which the farmer can increase his number of animals on the farm. It is a means by which he can decrease the cost of production. It is a means by which he can retain the fertility of the soil. The prices of dairy products and beef have ranged high for a number of years. Stock cattle as well as cows have sold at high prices and still the producer complains about the profit he is able to realize. He should not complain about the price of either, but he should look to the cost of production, and he will find that the great percentage of this cost is his feed and the only manner by which he can decrease it is through the use of the silo. The silo furnishes a means by which Utah can again be repopulated with cattle and the repopulation of our state with cattle is the big question, for not only the farmer to solve, but it is up to the business interests of Utah in some manner finance that sort of game.

Some method must be devised by which to increase the animal husbandry. It can not be brought about entirely through the silo. but it can be stimulated. The farmer is complaining of the high cost of production, the business man the high cost of operating his business, the laboring man of the high cost of food products, and the government sending out experts to determine the why of these complaints, and if we will look around we can readily see that waste contributes largely to all of these complaints.

Any waste of feed should be prevented if possible. The silo is one very efficient way of taking care of this waste.

Building a silo with which to save feed and increase the production of the farm is not making a sacrifice. The farmer who has to borrow money with which to buy the silo is making one of the best investments he ever made in his whole farming experience, for he is building for the benefit of his land and for the generations that are to come. At the same time he is meeting an emergency and helping to provide food for a hungry world.

A farmer with ten or more cows cannot afford to delay the construction of a silo another season, and now, is a good time to plan

(Continued on page 16)

Economy of Using Machinery

R. B. Rushing.

Man's time was never more highly valued and never more carefully taken account of than now. The laborer in our great factories is paid so many cents per hour for his work. He receives pay for the actual time that he is at work. If he arrives an hour late he has rendered no service during that time and therefore he gets no pay for that time. When he receives his wages at the end of the week he realizes that the time lost was worth something to him. The man that is paid by the week may be a little more careless of his half-hours and hours; the man who works by the month may regard his hours more lightly; and the man whose time is his own may fritter away days after days, but all of his time has its value nevertheless.

Since time is valuable it behooves us to make it as profitable as possible.

There may have been a time when the farmer placed but little value on his time, but those days are gone. The intelligent, progressive farmer of today realizes that his time is worth money to himself, and that he has it in his power to make it worth more or less depending upon the way in which he directs his energy. He may not get as quick or as direct returns for his labor as the workman who receives his pay envelope every week, but if his efforts are well directed their value will be returned in due time.

There is no way in which a farmer can more easily increase the value of his time than by the use of suitable labor-saving and time-saving machinery. The man who has only a small garden spot back of house, and a plot of grass in front of it, can get along very nicely with a spade, a hoe and a lawn mower, but the farmer who has a quarter section to till and mow would be very foolish to try to get along with such tools for the purpose of saving the expense of a plow, a cultivator, a mower and such other tools as would enable him to handle his work properly. The man who has a full section of land will need to spend much more for tools, teams and necessary appliances for carrying on his work, but if his expenditures are wisely made the amount will be returned to him many times over.

This is an age of farming by brains and steel. The farmer who buys most wisely just the tools which he needs to cultivate his fields and harvest his crops with the least expense for time and labor is bound to make his business most profitable. It is in the selection of the machinery most suitable for his conditions, and most economical for his particular circumstances that the farmer needs to use his best judgment and exercise his greatest care.

No man who has 500 bushels of wheat to deliver to the railroad 10 miles away needs to be told that he cannot afford to hire men with wheelbarrows to take it there. He knows that he must have a team of horses and a farm wagon.

The farmer who has 40 acres of wheat to thresh doesn't need to be told that it would be a waste of time and labor to try to pound it out with a flail, for he knows that a steam threshing machine is the thing for that purpose. But that same man may not have figured out how much time and labor might be saved by using riding gang plows instead of the single walking plows which he has been using for years.

The man with the 80 acres of corn to plant doesn't need to be informed that he should have a planter for that work. It may, however, require many hours of hard talking to convince him that he cannot afford to gather his crops without a corn harvester and a husker and shredder. The planter is an old used machine and he knows its value. The others are comparatively new and he may not appreciate their worth.

Few dairymen of today need to be told that a cream separator will soon pay for itself many times over by the increased profits which it will produce.

But many (even dairy farmers) need to be informed that by placing watering basins before each cow their winter's profits will still be increased.

Many more of them need to be told that it is time to put down a well and buy a pump and to keep their stock from drinking out of the polluted pools and streams. It will require long arguments to convince many of those who have pumps that they cannot afford to pay a man to work that pump handle for four hours every day when a windmill or a gasoline engine would do the work much better. It is safe to say that under any conditions the cost of pumping water with a windmill or a gasoline engine is less than the cost of a man's board. Then is such machinery not a paying investment?

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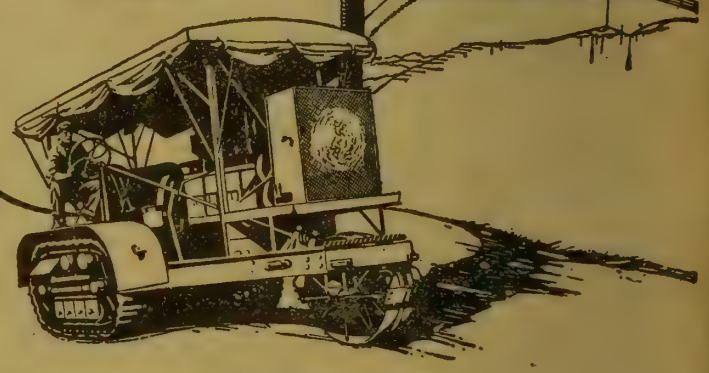

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THAT PITCHFORK

A pitchfork is indespensible about the barn, but is also a very dangerous instrument. Man and beast have both been seriously injured with this instrument. A man cannot be too careful in the handling of the fork. In taking it up into the hay mow he should be cautious. It will be better if he will throw the fork into the mow first, then climb the ladder. Even then he should be certain that the fork does not slip back on top of his head. If caried in the hand the tines should point downward, so that if one falls he will not fall on them. After the hay is thrown from the mow, the fork should not be dropped at random into the bunch of hay. One should look where it is to fall. A child or animal might be in the spot you intended dropping the fork.

One day my brother threw a bunch of hay out of the barn loft and carelessly dropped the fork into what he supposed would be the bunch of hay, but it fell on the back of a steer that happened to come up as soon as he saw the hay. The steer began to run and jump and bawl as he took out through the field with the pitchfork sticking straight up in its back. Finally the weight of the handle overbalanced the fork and it came out of the steer's back. It was quite a painful wound. Never slide the fork out of the mow with tines pointing upward. If you should slip onto the fork as you descend the ladder fatal injury might result. Boys and men have been killed in such a manner.

It is not even a good plan to drop the fork into the bunch of hay so that the handle will be left sticking straight up. A person might fall on the point of that, and altho it is blunt it would do some injury. After all, I believe it will pay the farmer to have enough forks so that he can keep one in the mow and another below to handle his hay.

A person should never throw a fork down on the ground. An animal might run against it or a person might stumbled into it in the dark, running the points into his limb. Hang the fork up or set it to one side where there will be no danger.

One should also be careful not to put the fork near the horse's head while he is eating. This is often done when putting hay into the manger. Sometimes the horse's nose is stuck by the prongs and he throws his head up, either running the sharp points further into his nose or striking his head against the wall of the barn or some cross piece above him. I have seen horses painfully injured in such manner. Make the horse take his head out of the manger until the hay is put into it.

Never set the fork with tines upward against a hay rack. It is very apt to catch some fellow when sliding down from the stack. I knew a man who was nearly killed by sliding onto a fork. A pitchfork properly handled is a useful tool, but a dangerous weapon when carelessly thrown about.—W. D. Neale.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending June 4th—Cattle—Receipts, 2,652; market, steady; choice steers, $10.50@12.50; good, $8.50@10.50; feeders, $6.50@8.50; choice cows and heifers, $8.50@10.00; fair to good, $5.50@7.00; canners, $4.75@5.25; feeder cows, $4.50@6.00; veal calves, $8.50@9.50; choice bulls, $7.50@8.50.

Hogs—Receipts, 1,237; market, steady; tops, $16.00; bulk of sales, $16.00.

Sheep—Receipts, 4,482; market, steady; lambs, $17.00; ewes, $9.00@$10.50.

Omaha, June 3.—Hogs—Receipts, 4600; market mostly 15c higher; heavy, $16.40@16.45; mixed, $16.45@16.55; light, $16.50..16.60; pigs, $12.00@16.00; bulk of sales, $16.45@16.55.

Cattle—Receipts, 4600; market steady; native steers, $12.25@17.40; cows and heifers, $9.50@14.00; western steers, $9.50@14.25; Texas steers, $9.00@12.50; cows and heifers, $7.50@9.50; canners, $7.50@9.50; stockers and feeders, $7.50@13.00; calves, $8.00@12.50; bulls, stags, etc., $8.00@12.50.

Sheep—Receipts, 4300; market strong; lambs, $15.75@19.60; yearlings, $16.00@17.50; wethers, $14.50@16.50; ewes, $10.00@13.00.

Be sure and read the advertisements, it will pay you.

ESTABLISHED 1904

PUBLISHED EVERY SATURDAY

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VOLUME XIV. LEHI, UTAH, SATURDAY, JUNE 8, 1918 No. 45

Intelligence In Trees

C. S. Harrison.

Man is the climax of nature, of law, and Providence. All things converge towards him. He is royal and has been twice crowned. Once "with riches and honor" and again "with loving kindness and tender mercies." For him the fields toil and the great stretches of grain turn to silver and golden grains. For him the flocks and herds increase. The cow becomes a chemical laboratory turning crude material into streams of life. How the patient fowls work for him. Her product and progeny—over two hundred millions of dollars' worth a year, are worth more than the output of all our mines of silver and gold. For him toil the patient ox and faithful horse and now we come to another great toiling host which from spring till fall work for him with a persistence which excites our wonder. Let us think of moment of the laborers in the vegetable kingdom.

There is no sound of saw or hammer, no call to toil—no laborers' song, yet at the same time persistent, tremendous, quiet work on an immense scale.

"The labor of the olive" an imperial fact addressed in poetic garb. We love the thought. It opens a wide door. When the warm winds thaw the snow and the genial sun ushers in the spring, and the frosts let go their grip of the roots, it is like the call of day to the sleeping world, calling them to breakfast and to work. Then the work begins. Behold the lilies how they grow. They toil not, they spin not—according to human view. That is, like man they do not card and spin and weave. They use no pencil or paint brush. But consider how they grow. Down in the silent earth the tiny rootlets wander, threads of life gathering in sustenance quietly, noiselessly, ceaselessly, day and night. Like tireless servants they are reaching out for dainties to send up to that resplendent flower which shame the glory of kings. Curious, is is not, how they can in their knowledge of those delicate tints whose intricate material for the making of each of these delicate tints whose intricate tracery is the despair of the artist. Spring has come and as with a bound of joy the whole vegetable world springs into life and goes to work. There is the peony. She sends up these leaves—flowers of themselves—foliage plants of wondrous beauty—forerunners of the glory yet to come. These roots search the earth for material to put into the radiant flowers whose smiles so cheer and enliven us. The rose is hard to work—new wood must be formed for those dainty flowers : the roots must send up the choicest tid bits to weave into beauty and fragrance. Oh, the wonder and the miracle of these yearly new creations!

Here is a bed of Columbines. They take the rainbow in pieces and save every tint and color for garments of their own. Those roots never get confused. The roots of the double blue do not send up material for the white, and the reds never rob the purple of their coloring. Could we work on thus without mistake? But here each one is paying particular attention to her own business, and each stands forth arrayed in her own fashion, and no one ever thinks of borrowing a neighbor's clothes.

See that cherry tree. How busy! Unseen messengers are scurrying here and there to hunt up material for that cantle of white in which the tree is to be arrayed. Then how busy the flowers are. The stamens must shed their pollen to fertilize the blossoms, and when the blooms fall the tiny fruit appears; then how the roots must work. But they do not falter. Every day the cherries grow larger and larger. But where do they find that rich tissue with which each one is wrapped until the whole tree is one vast bouquet of beautys? A stupendous flower touched and painted by unseen fingers. I have known a man to gather seven bushels of those beautiful cherries from a single tree. How much hard work was done to reach such splendid results?

There is the strawberry. Did you ever see such a diligent little toiler? Just watch that plant; consider the berries, how they grow; invisible machinery, is at work to turn out 'God's best." The fruit might be of the color of cobble stones—no, it must not only be luscious, but lovely in color or form. It must be complete and there is a ball of delicate juices wrapped in tissue of glowing red which makes the mouth water to think of it, and just think how that little plant has to work to turn out a dozen or two of those wonderful berries for the king's table.

There is a grand apple tree—not as imposing in appearance as the Columnar Lombardy or the giant cottonwood. But it is a faithful, hard working tree. It is a Jonathan. First the immense task of producing that glorious mantle when the tree is one mass of bloom, and you might say as you look on that great mass of fragrance and beauty where the happy bees are gathering their treasures. "This is enough. Don't try to do any more," but the reply is. "We have only just begun, wait until fall." In the meantime who can describe the work of those faithful toilers, the roots and the leaves. Between the bark and the wood there is a highway of commerce. You put your hand on it, and you do not feel the rush of enterprise, the coming and the going, and when the golden autumn comes on that noble tree there are bushels of the choicest fruit—perfect in form as if turned out by the most intricate machinery, with a coloring such as only artist nature can paint. Such a luscious pulp wrapped up in such dainty covering. You may take off your hat to that tree, as one of the most industrious of all the armies that toil for man. So look all over the farm and it is work! work' everywhere. Here is the timber grove. How cool and delightful when the breeze comes through on a summer day. You say it is all quiet here, yet quiet but busy. Do you know what the record of those yearly rings mean. They are the records of a summer's work. Two feet added to the height, an inch added to the diameter; figure up the aggregate and how many loads you can take from the forest, and then you only take away the equivalent of the growth. Those trees are in haste to grow, that their labors may feed the stove and bring the warmth of summer into the chill of winter. They have been condensing the sunbeams for you, and storing them up—wrapping them in that rough bark so you can have posts for your farm, poles for your sheds, lumber for your buildings and fuel for your stoves. Plant trees in the waste places and they will dig gold out of the earth for you, and gladly they will toil night and day for your comfort. What faithful friends stand guard around us!

The trees, the blessed trees, not only check the burning blasts of summer, but they defend you against the cold north winds of winter. And is it not wonderful that you can take a bare brown piece of earth, and on your own volition fill it full of faithful friends who will stand by you in summer's heat and winter's cold, and work for you as you can hire no man to work both day and night?

Surely we live in wonderland if we could but open our eyes to the miracles which are going on all around us.

Feed The Cows Regularly

E. L. Vincent.

The worth of cows for the season depends largely upon the condition they are in when they go out to pasture at the beginning of the year. In earlier days I used to wonder what was the reason my cows fluctuated so one season with another. When the surrounding conditions were quite the same during the summer months, I would find that some years my herd would do a great deal better than they would other seasons. And I could not for some time satisfy myself as to the cause of this marked variation. You know, when a thing affects your pocketbook, you after a while begin to do more than wonder about it; you put such brains as you have to work to find out what is wrong and then to devise ways and means for remedying the trouble.

And in the course of my investigations along this line, I came to the conclusion that it was when my cows were in the best possible physical condition at the time they went out to pasture that I realized the most from them during the working season; while on the contrary, if they were poor and weak in bodily vigor, my returns would be correspondingly curtailed.

It was worth something to me to have that point settled to my satisfaction; for then the way seemed to be pointed out for the next step. The why and the wherefore of this state of affairs as I reasoned it out is as follows: Every kind of an animal will try to make itself comfortable. Poor cows are not so. They are all the time gaunt and not exactly satisfied with themselves. Take a cow that is bearing a calf, as most of our cows are at this season of the year. There is a constant drain on the mother's body to meet the conditions of the growing offspring. Not only must the cow keep up her own bodily flesh, strength and vim; she must all the time keep pouring into the coming calf the material which will make bone, blood and muscle. If she does not get enough feed, and feed of the right kind to do this, both the mother and the offspring must suffer. Natural causes produce natural results. So the cow comes out of the ordeal in a run-down state that forbids that she should be able for a number of weeks to do as good work in the dairy as if she had been fed well and otherwise cared for as she should have been.

When a cow goes out to grass in this debilitated condition, the first thing she does is to build up her depleted body. Self-preservation is the first law of nature. So it naturally follows that the cow eats and drinks and does business largely for herself for some weeks. She will not give as good milk, nor so much of it, as if she had been fairly treated for the month of six weeks prior to calving.

Now, here is where I put two and two together. I said to myself: "From this time on, I will keep my cows up in the best shape I can the last end of winter. I will not let them get poor in flesh or run-down in bodily vigor." And I have tried to do this ever since, and the consequence is that there has not been this mystifying falling off some years in the proceeds from my dairy.

It takes a little more feed, especially ground feed, to do this than it does to pinch a cow through till grass comes. There is a temptation sometimes to think: 'Well, if I can only get my cows through to pasture, I will be all right. I must skimp them down. Hay is short; ground feed is high in price. I will have to cut down my rations for the next few weeks."

It is the costliest thing a man can do. Economy in the feed and care given a herd of cows at this season of the year is economy that costs more than it comes to. Indeed, I very much doubt if any man ever saved anything by pinching his cows on feed. He always gets the worst of it. For nature will not brook any attempt at abuse.

Far better that a man should spend a few dollars more for hay or grain than to attempt to "get through" on short commons. His cows if kept up in good shape these coming weeks before pasture comes will then be in condition to go out and begin working, not for themselves alone, but for their master. They will give more milk and it will be better milk, so that the returns will begin to come in right along.

Another point is well worth noticing here, and that is that if feed is short, we need to bear on a little harder with the care we give our cows. That is, we must groom them more regularly and do it with the greatest possible sympathy, so that the bodily comfort of the animals will be fully conserved. That may seem strange to some who never have studied into the matter as they might. Here is the theory, and it works out well in practice: The well-groomed cows gets more good out of the feed given her than the one that is left to get rough and shaggy and her hair all matted down over the pores of the skin. A clean body helps to maintain health, and a healthy cow is the one that is most profitable to her master. Elimination of waste matter goes on all the time, more or less hampered by the state of the bodily organs. The skin is one of the great organs for carrying off waste material from the body. Keep it clean and the cow feels better, eats less and gets more good than she would if not fed properly from the hay, grain and other food given her.

These things I have found out for myself and they are worth something to me. They will help any man who will make his own observations and act accordingly.

DAIRYING

WAR TIME DAIRYING

J. H. Frandsen, University of Nebraska.

Article III.

"Keep-A-Cow" Movement.

Food Administrator Hoover is advocating the "peep-pig" movement for the suburban population in order to meet the heavy demand for pork. Why not a "keep-a-cow" movement too, for the people of smaller towns and villages and outlying districts where vacant lot space is easily available for growing alfalfa and forage crops which form a large part of a cow's ration. Even the grass and hay going to waste on the roadways in many places could easily be conserved for feed. Where such waste material can be found, it offers an opportunity for the patriotic citizen to add something to the feed suppply of the nation. It may also help to teach thrift to boys and girls many of whom are growng up without employment or responsibility of any kind. The writer knows of boys who by keeping a few cows have earned the money necessary to put them through high school and college.

While milk ordinarily can be produced more desirably on dairy farms where special attention is given to this as a business, the suggestion of keeping a cow wherever feed and labor are available is given as a war measure in the hope of increasing the quantity of food wherever it is possible to do so economically.

Hold On To The Good Cows And Add More.

To help supply the demand for dairy products practically every farmer can care for a few more good cows. It has been estimated that at the present time the excess pasture and roughage in Nebraska alone would easily care for 200,000 additional cows. Nebraska with its ordinarily cheaper forage and grain offers special opportunity for the dairyman engaged in the manufacture of a high priced concentrated article, like butter, cheese or condensed milk which can readily be transported to any part of the world where the best markets prevail, giving him an opportunity to take advantage of the demands and larger profits that are not possible to the man simply engaged in the production of a bulky coarse product, the bulk and freight rates operating to shut off demands of distant markets. Now, more than ever before, is the time to weed out the poor dairy cow and replace her with a good cow. With feed high and labor scarce it is very important that every cow should be yielding the hghest possible returns and that more attention be paid to the selection, feeding and breeding of dairy cattle. For this reason a few fundamental suggestions are given.

The most reliable guide in selecting a dairy cow is to determine her actual butter fat record. This can be done by determining the per cent of butter fat through frequent tests of the milk by means of the Babcock milk tester.

Weigh The Milk. Keep a record of the number of pounds of milk given by each cow. Hang a spring scale in a convenient place where the milk can easily be weighed and mark down the weight of each milking on a chart prepared for the purpose. At the end of each month, add up the amount of milk produced to determine the monthly record. The year's record will show the amount of milk produced by each cow.

Test The Milk. Take a sample of each cow's milk about three times each month and test it for butterfat with a Babcock milk tester. A simple and complete outfit can be purchased for $5.00, and is so easily used that a farmer can learn to operate it in a few hours.

By carefully testing and weeding out the poor cows, the people of Denmark, in five years, have succeeded in raising the average annual production of each cow more than 40 pounds of butter fat. This has increased the profit of each cow over $20.00 per year. By adopting the same systematic method, Nebraska dairymen can secure as good results.

Cow Testing Associations.

Where a sufficient number of farmers in a community are interested in testing their cows, a cow testing association may be formed and a specially trained man employed to make regular tests of the herd at a small cost per cow.

The Dairy Sire.

In addition to weeding out the poor cow by systematically weighing and testing the milk produced by each cow, and effort should be made to improve the young stock on the farm through pure bred sires, which should be selected from heavy milking cows. Breed up and increase the productive capacity of your herd.

Community Breeding.

It is highly desirable not only that each dairyman build up a good herd but that all the dairymen of a community unite on the same breed of cattle. This enables near-by farmers to unite in purchasing high class sires. As soon as a considerable number of farmers have dairy cattle for sale, they can advertise together and secure a much better market than could be done by any single breeder, since they attract more buyers and can furnish cattle in car lots where a buyer so desires.

Winter Dairying.

There are many advantages in having cows freshen in the fall or early winter. In Nebraska, butter is generally fully one-third higher in winter than in summer. Cows which freshen in the early winter and all are well cared for during the winter period go on pasture at the time when they would naturally be drying up, and this lengthens the milking period and increases the annual yield of butter. The farmer has more time to milk cows in winter. The climate is more favorable in winter, where good shelter is available.

Classification of Dairy Feeds.

Inasmuch as protein and carbohydrates are the two feed constituents with which the feeder is most concerned, and to aid the dairymen of this state to make proper selection, it may be of value to roughly group some of the most common Nebraska feeds into two classes as follows:

1st. Feeds containing a high percentage of protein.

2nd. Feeds containing a high percentage of carbohydrates.

Feeds Rich in Protein.

Alfalfa hay, clover hay, pea hay, bran, oil-meal, cottonseed meal, oats, gluten meal, soy beans.

Feeds Rich in Carbohydrates.

Corn, corn silage, barley, oats, timothy hay, orchard grass, oat straw, carrots, sugar beets, mangel-wurzels.

As the protein feeds are required for the production of muscle, tissue and milk, and the carbohydrates for fat and energy, the feeder can easily see that a balanced ration must contain both classes in the right propor-

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PULVERIZER, PACKER AND MULCHER
3 MACHINES IN 1

for preparing your seed bed, will increase your crop 25% whether you raise wheat, barley, sugar beets, beans, potatoes, alfalfa or any other crop. A perfect, well pulverized and firm seed bed is as important for one crop as for another. The Western pulverizes and packs as deep as plowed and leaves a loose mulch on top to protect the moisture; saves 1-3 of expensive seed and time, labor and horse power in preparing a seed bed. It is especially adapted for breaking crust and cultivating winter wheat in the spring, or for breaking crust on sugar beets or beans either before or after they are up without injury to the plants.

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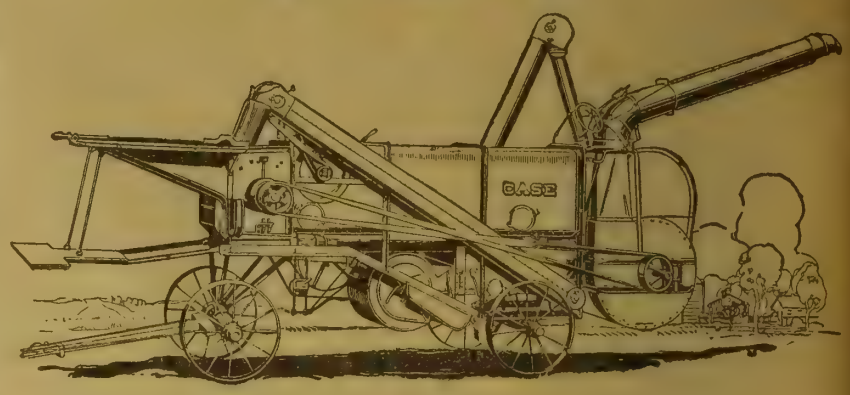

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tion. The feeder should bear in mind that home grown feeds are the cheapest and plans should now be laid to grow as much of it as possible next year. Provide plenty of alfalfa and silage or fodder corn or other forage crops.

Amount of Feed For Dairy Cows.

The following brief and simple rules will aid in determining the amount of feed required by each cow:

1st. Feed all the roughage, such as alfalfa, corn silage, etc., the cow will eat up clean.

2nd. Feed approximately one pound of grain for every three pounds of milk produced per day.

3rd. Give the cows as much feed as they will consume without gaining in weight.

4th. Feed some succulent feed, such as corn silage or roots, to make the ration more palatable.

5th. Be prepared to supplement the pastures by feeding silage when the dry season sets in.

Watch Pastures.

Watch the pastures closely next year. If they get short plant to supplement with some soiling crops or summer silage. For soiling crops plant corn, oats, sorghum, sudan grass or alfalfa.

Provide More Silos.

Silos constitute our best insurance against drouth and also enable more high priced grain to be released for human food.

TO INCREASE DAIRY PRODUCTS

The author of an excellent work on the dairy business lays great stress on the importance of keeping records of milk production and cites instances in which they proved very useful by showing that some of the cows which were tested in this way were being kept at a loss to their owners. These illustrations are followed by the assertion that many dairymen could reduce their herds one-half and the labor and capital as well) and still be making more profit.

It seems to me that the statement regarding the reduction of the number of cows in the herd should be somewhat qualified. The point is good but it is too strongly emphasized. It gives the dairy too much prominence in comparison with other lines of farming. This is unfortunate, for, as a rule, the dairyman is also a farmer. And even where it is very prominent the dairy is far from comprising all of his business. This work has other branches and they are so closely related to, and interwoven with, the dairy and with each other that their interests can not be treated separately with any degree of accuracy. If an attempt is made to handle them in this way some lines will not receive as much credit as they deserve because of failure to note certain benefits which, though indirect, are of considerable importance. This is true of the dairy business as a whole and emphatically so as regards the cows which fall below a satisfactory standard as milk producers.

The farmer who is also a dairyman has crops which he must dispose of in some way. If he keeps a proper number of cows he can feed a great deal of this material and thus get it into a more concentrated and much more valuable form. In this way he secures a home market for much of the bulky stuff which it would require a good deal of time and involve considerable expense to haul away. And, unless the cows are far below the average farm rate of production they will make returns in milk and calves that will add a considerable sum to their owner's income.

If the cows eat most of the roughage and a part of the grain that is grown on the farm they will make a large quantity of manure. And the farm needs all the manure they can make. Commercial fertilizers are a great help in producing profitable farm crops but they are to be used as an auxillary and not as a substitute for manure. And if the average farmer is to manure his land properly and economically a large part of what he uses must be made on his own premises and from his own crops.

The method which the author referred to advises for improvement of the dairy situation is open to serious objections. If the herd is reduced one-half by selling the poorer cows the home market for the coarse farm products will be seriously curtailed and the quantity of manure made on the farm will be greatly diminished. Then, too, there will be a question as to how these inferior producers are to be disposed of. If they are too poor to keep at home they can not honestly be recommended to prospective purchasers who want cows for milking purposes, and without a recommendation they will not be wanted. They will not be suitable for beef, or be promising for feeding, and will not sell for much for eitner of these purposes.

Perhaps it will be wise to adopt a method which is followed in many factories where different kinds of goods are made. Some of the products give a much larger profit than others but the managers prefer to keep work going on along all of the lines to curtaining its volume by dropping out the things which are the least profitable and going on with only those which pay the best. They may do some work at cost, or even less than cost, because it can help another department or keep the machinery going when part of it would otherwise be idle. The business is managed as a whole. No single item, but the sum of the items, determines what shall be done.

Any atempt to show how an unsatisfactory condition can be improved is worthy of praise and if adverse comment is made on the plan proposed the objector should try to point out "a more excellent way." In an effort to do this I would suggest that if any cows in the herd are hopelessly unprofitable they should be fattened, as far as possible on home-grown feeds, or else sold for just what they are and for what they will bring. Other cows, which are not so bad but are not paying very well, should be given further tests. Their low rate of production may be due to inheritance but in many cases it is the result of the unfavorable conditions under which tney are kept. Where the inheritance is not to blame a more liberal grain ration, a wiser selection of food stuffs, or greater regularity in the times of feeding, may soon cause a decided change for the better. In some cases, too greater protection from storms and from extremes of temperature would be of marked benefit.

These, and similar methods of improvement should be tried before a cow that is not known to be worthless for milking purposes is finally condemned. Probably some cows would not respond very much to such efforts but others would improve so greatly as to surprise their owners by the development of their hitherto latent possibilities. The cost of properly testing cows about which the owner is uncertain will be small and in the majority of cases the result is likely to be satisfactory.—J. E. R.

RAISING THE DAIRY CALF.

W. M. Rider.

The successful raising of the dairy calf is one of the big problems of the dairy farmer. The care and management of the calf from birth to maturity, requires good sound judgment, as to the proper methods to follow in its feeding and handling; and then takes also considerable patience, gentleness and detail oversight at all times. A few suggestions concerning the feeding and care of the calf are given at this time. One should bear in mind that no advice on how to feed any class of livestock can be followed to the letter, but that each calf or other young animal should be fed and managed as seems best suited to that individual during its successive periods of development to maturity. The aim at all times should be continued normal growth without any setback ,if possible.

Some rules to follow in the management of the dairy calf are:

1. Leave the calf with its mother for at least one day.
2. If the cow does not lick calf dry, it should be rubbed dry to prevent catching cold.
3. Disinfect navel and tie cord thus avoiding navel ills.
4. See that calf nurses often during first day. If necessary, assist it.
5. On morning of second day, take calf away from cow.
6. Place calf in a clean, dry and well-bedded stall during day and at night offer it 2 pounds of fresh warm milk from its mother.
7. Feed calf at regular periods, preferably three times a day until 10 days old, giving it 2½ pounds milk on third day at each feed; 3 pounds at

(Continued on page 13)

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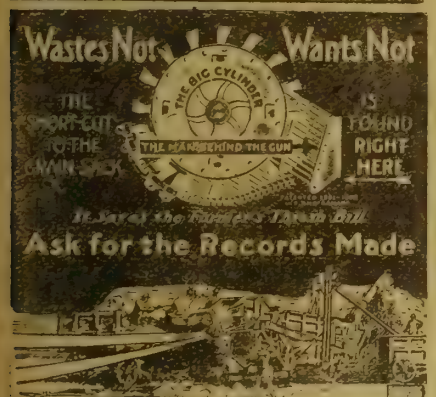

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Tools That Will Cut

Fred West.

Farm tools may be grouped into three classes for sharpening. Picks, mattocks, post-hole diggers, spike-tooth-harrow teeth, stone drills, crowbars and the like must be sharpened by forging, hardening and tempering. Axes, hatches, scythes, disks, mower knives, kitchen knives, shears and others of this class of tools are sharpened by grinding and whetting. Saws, boring bits and some of the cutters used on farm machines are put in good shape by filing.

Steel forging may be done on the farm as readily as grinding or filing. It is not necessary to take such work to a distant shop. Only a small forge is necessary and this may be either homemade or factory made.

The important things to remember in forging steel are to heat the steel evenly and slowly, not to heat it too high, and to hammer it quickly and not when lower than a red forging heat. To draw down a sharp, square point, as a spikeharrow tooth, for example, hold the bright, red-hot steel on the anvil at the proper slant, strike the top squarely two or three blows, revolve one quarter turn and hammer until the tooth is square. Then turn over and hammer the opposite side, finally bringing to the top the side opposite the first one hammered and striking it until the tooth is square.

Color Determines Temper.

After forging a steel cutter, drill or other tool to the form and edge required, the next important operation is to harden and temper it. To do this, first heat the steel to a moderate redness to a distance of from two to three inches from the cutting edge and insert it for about the same distance vertically into a tub of clean water for a few moments. Quickly brighten the cooled part by rubbing it on sandpaper or a soft stone and observe closely the temper colors as they run down from the hot body of the steel toward the cutting edge. When a yellow or straw color approaches the edge immerse quickly in water and cool the entire tool. The straw temper is about right for all the forged tools already mentioned, but if this proves too hard in any case, try drawing to a blue temper, which is the color that follows the yel low.

Coal, coke and charcoal are the most convenient fuels for heating steel on the farm. Charcoal is the best, as it is free from sulphur, which is very injurious to steel.

The patriarch of grinding wheels is the grindstone, and while there are now available a number of excellent manufactured wheels, none of them excels the wetted grindstone of medium hardness for sharpening edged tools. Some of the manufactured wheels are faster cutters than the grindstone, but the latter is fast enough for general farm use and there is less danger of drawing the temper of the tools with it.

The speed of the stone should be just less than that necessary to throw off the water used to keep the tool cool and wash away the cuttings. Use a stream of water about the size of a straw or less. If a trough is used under the stone never let the stone stand in the water, as this will make a soft spot and cause an untrue surface, while in winter there is danger that freezing will crack off a slice of the stone. An uneven or wabbly grindstone is an aggravation beyond measure. Any grinding wheel requiring two persons to operate it, or one located where it is exposed to the weather, is unhandy and more or less unsatisfactory as compared with the style operated by a treadle or by power.

The rule of grinding is to apply the tool so the surface of the wheel turns against the cutting edge. This prevents a wire edge and gives a clean, solid and smooth edge with the least amount of grinding.

In addition to emery, which is a natural abrasive, a number of manufactured abrasives are used in grinding wheels. All of these are about of the same hardness, which is much greater than that of the natural sandstones, but some manufactured wheels cut faster than others under certain conditions. These wheels are made by mixing the abrasive grains of any required size with a binder of clay or cement, pressing the mixture into molds and drying or fusing it. The wheel is said to be hard or soft, depending on the quality of the binder. If the dulled grains break out easily and sharp ones become exposed readily, the wheel is soft. If the binder holds the grain too long and the surface of the wheel becomes glazed, the wheel is too hard for the work.

Manufactured grinding wheels are generally made smaller than grindstones to reduce the cost. They should be run at a high speed, and to prevent drawing the temper from the tools a strong stream of water should be directed at the point of contact.

Manufactured wheels are used a great deal for dry grinding regardless of the risk of drawing the temper. This feature, together with their small size and fast-cutting properties, makes them popular on the farm. Then there are many tools, such as the chilled cutters used on plows and harrows, road scrapers and the like, that do not require water when being ground. Probably the most tiresome job is the grinding of mower knives on the man-boy-power grindstone. The grinding wheel with a sickle support reduces time and labor greatly.

The manufactured abrasives are especially useful in whetstones for sharpening kitchen knives, for the final finishing of almost all cutting edges after grinding, and for touching up moderately dull edges. These whetstones are made in all grades and may be used with water or oil.

Saw filing is the only class of tool sharpening that the farmer should have done by an expert. Almost every community or village has its boss carpenter who can file a saw, and the usual charge for such work is twenty-five cents. Three-cornered files, fretsaw files, mill files and cant files of medium fineness serve for saw filing and for the other cutters that must be filed.

BETTER THAN HORSE PLOWING

Raymond Olney.

Plowing is the hardest of all farm work for horses; it is the sort of drudgery for which the farmer most needs mechanical power. On a large percentage of farms in this country the tractor would prove a profitable and economical investment if used for plowing alone. So important is it to have spring and fall plowing done quickly and at the right time, tractor plowing has a great advantage over horse plowing. But for the sake of the highest efficiency and economy the farmer should not be satisfied to maintain a single-purpose machine, or one for which he finds only a few uses at the most. In order to get the most value out of it, he will put it to work at as many different tasks as it will perform quicker and cheaper than horses. There will be many, of course, for which the horse will be better adapted and vice versa.

It is well before buying a tractor to make a study of the tractive and belt operations on the home place that require power for their performance, and decide so far as possible how many of these can be done best with the tractor. With these different operations in mind, the prospective buyer will be in better position to select a type and size of machine that will be suited to his needs. Last year the first work to which I put my tractor was spring plowing. Following the plowing I used it for preparing the seedbed and seeding.

For this work a ten foot, double-throw disc harrow and a ten foot, single-disc drill were hauled tandem, thus performing the two operations at the same time. On corn stubble ground which was not previously plowed, I used a large I-beam ahead of the disc to pull up or break up the corn stumps and level the ground. After seeding we used the engine for hauling manure. In this operation two spreaders were used, one being loaded at the barnyard while the other was being unloaded in the field. Following this job the tractor was put to work grading and leveling roads.

When haying time arrived the work of mowing and raking was done with the teams, while the tractor was used for hauling the hay wagon and loader. We had two wagons equipped with ten by twenty foot racks, which with the engine enabled us to make quick work of securing the hay. For harvesting wheat and oats we hauled two eight-foot binders behind the engine. In place of the regular binder tongue a patent binder hitch was used on each machine which by means of a tiller wheel and an offset tongue, permitted the binder operator to control the width of swath independently of the engine. Our tractor and binders were also used for harvesting sweet clover for seed.

For threshing the tractor was put to work most of the time hauling bundles to the separator. Also for a short period it was belted to the grain separator in place of the steam engine ordinarily used. In spite of the fact that farming with mechanical power is very new relatively speaking, it is remarkable the progess that many owners have already made in putting their tractors to many different kinds of work. A neighbor for instance, says he has done everything on his farm with the tractor, except planting and cultivating corn and the quality of work in each instance is better than done with horses.

War story from an English cap: "Who goes there?" challenged a sentry. "Who t'hell wants to know? was the reply. "Pass, American," ordered the sentry.

"Before I take the case," said the Denver lawyer, "there is one thing to be looked into." "I presume," said the client from Boulder county, "you refer to my pocketbook."

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No. 2½ Cans Tomatoes Case	$3.29	Tall Sego Milk Case	$5.50	Pint Bottle Vanilla	98c
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SALT LAKE CITY, UTAH.

Quarter of a Million Dollar Dairy for Utah

That Utah is about to take another big step forward in the dairy cattle-breeding industry is evident from the plans just announced by the Wasatch Farms company of Salt Lake. Judging from the announcement Utah will shortly boast as large and fine a dairy farm as any western state. The Wasatch Farms Company is taking over the Smith Brothers Jersey Farm, owned and operated for the past nine years by Joseph F. Smith and his sons Joseph F. Smith, Jr., David A. Smith and Geo. C. Smith. From an original investment of $18,000 nine years ago the Smith Brothers Jersey Farm has developed into one of the largest and most valuable dairy farms west of the Mississippi river. The cattle bred on this farm have been sold all over the west and the Jersey herd is nationally famous. Some of the very best strains of Jersey blood are represented in the herd and practically of the famous grand champions of the breed in the breed in the past decade are ancestors to some member of the Smith herd. In the past five or six years practically all the prizes for Jerseys awarded at the Utah State Fair have gone to this farm, as many as 33 awards being won in a single year.

DAIRY BARN, SILOS AND MILK HOUSE AT WASATCH FARMS.

While the breeding of registered cattle has been the most profitable end of the Smith Brothers business the demand for Jersey milk has grown so fast that for the past few years it has been impossible to make production keep pace. At present, according to the officers, three times the production would not meet the demand.

Now the business is to be expanded and $250,000 expended in bringing the Wasatch Farms up to the most modern standards and to enable the dairy end of the business to meet the demands made upon it. In addition to the ordinary dairy products Wasatch Farms will be the first dairy in the intermountain region to produce certified milk. For this branch of the business a barn, milk house, ice plant and other necessary equipment will be provided separate from the dairy proper and every detail of the milk production will be under the supervision of a commission of physicians and health officials who will certify all the milk. Every cow used in this division and all employes will be inspected weekly by physicians and all buildings will be kept as clean as a hospital. Certified milk costs more to produce than ordinary milk but on account of the great demand for it and the obsolute guarantee of purity, cleanliness and food value the higher price it commands make it very profitable.

Jersey milk alone is too rich in butter fat for certified milk as this grade is used principally for babies, invalids and the highest class family trade. Experts agree that a combination of Jersey and Holstein milk is ideal and Wasatch Farms will invest $30,000 in pure bred registered Holsteins from the finest farms of America.

$20,000 WORTH OF PRIZE WINNING JERSEYS ON WASATCH FARMS.

Wasatch Farms plans in addition to establish its own means of distribution and furnish its own market for all its farm products. A milk distributing station will be established in the business district of Salt Lake and with it will be connected a high grade dairy lunch. The company plans to supply from its own farms all the dairy and farm products consumed.

Plans for the improvements have been completed and a part of the capital secured. The supporters of the project are offering a limited amount of stock for sale among dairy men and farmers.

Lucermo

The Ideal Feed For

Cattle, Sheep, Hogs, Dairy Cattle, Horses, Poultry.

NOW ON THE MARKET

Lucermo—the product of a $500,000 investment and years of experimentation on the part of animal feed experts—is now being placed on the market by the Hansen Livestock and Feeding Co.

We have been making Lucermo at the rate of 100 tons daily and feeding the entire output to our own stock in our three large feeding stations at Ogden, Lewiston and Logan. Our experience demonstrates the success of Lucermo beyond all question and we are therefore, increasing our output to 500 tons daily.

A PERFECTLY BALANCED FOOD

Lucermo has proved a tremendous success because it contains all the vital food elements, such as proteins, mineral salts, etc., in correct proportions, and hence gets results quickly and economically. Lucermo comes in eight different forms, one each for range cattle, range sheep, feeder cattle, feeder sheep, horses, dairy cattle, hogs and poultry.

Our own wide experience in feeding Lucermo, together with the results secured by many other prominent livestock growers, proves that it will fatten stock in two-thirds the time and at 99 per cent lower cost than other methods of feeding.

Our plant is located near Ogden on both the Oregon Short Line and the D. & R. G. railroads, so that we can ship immediately to any part of the State. A. L. Hughes arrival food expert of 15 years experience in the largest feeding centers of the country, is production manager and C. P. Richins, also an expert of long naming, is plant manager.

Lucermo is ready for you! Try it on your stock! Ask your local dealer—or communicate directly with us.

ADDRESS ANIMAL FOOD DEPARTMENT
HANSEN LIVESTOCK & FEEDING CO.

A. L. HUGES, Production Manager. LARS HANSEN, President and Gen. Mgr. C. P. RICHINS, Plant Manager.

Feeding Stations: Ogden, Logan, Lewiston, Utah.

Lucermo Plant. Ogden, Utah.

HANSEN LIVESTOCK & FEEDING CO.
OGDEN
UTAH

WEANING LAMBS

How to Treat Lambs and Care for Ewes at Weaning Time.

Lambs kept for breeding stock should be weaned when from 4 to 5 months of age. The lambs intended for market, on the other hand, should attain marketable weights before they are 5 months of age and should be weaned at the time they are sold.

Lambs at weaning time should be kept for four or five days at least on the old pasture, as they do not fret as much as in a strange place. The ewes should be removed to another pasture as far away as possible from the lambs. If the feed on this pasture be a little scant, so much the better, for this will help check the milk flow. The ewes and lambs should not be turned in together again, for a large amount of milk from a ewe that has not been suckled for two or three days is liable to cause digestive disturbances in the lamb.

At weaning time the ability of a ewe to produce a good lamb is often ruined because the necessary care is not taken to see that she is dried off properly. A little care at this time will be well repaid. Two or three days after the separation the ewes should be milked out. All of the milk need not be drawn from the udder, but enough should be taken to leave the udder soft and pliable. Mark with colored chalk ewes needing no further attention. In about three days the ewes should be milked out again and the drys marked. Further attention should be given four or five days later to those not dry. No effort should be spared to maintain every breeding animal in a sound and useful condition.

Yes, they are holding the line, but the folks back home must bring up the reserves.

HOME

FOOD VALUE OF MUTTON

May Sorenson.

With the food problem becoming a national issue instead of an individual interest, the housemother must put forth every effort to make her part efficient. She has to select and to prepare the food. To do this properly certain things must be kept in mind. She must study her family not only from the viewpoint of their tastes, but also from a physiological one. And she also must have in mind the nature of the work, or play, that they do. She must do this because certain foods do certain things to the body. For instance, some foods furnish a great deal of energy to the body and it would be foolish to give that kind of food to a professional man or a man who has to sit at a desk most of the day, for it would overload his stomach and take too much of his vitality to take care of it. On the other hand, it would be folly to give light food suitable to an invalid or a baby to a man who has to run a motor truck or handle iron or stone. Too much energy food will choke the sysem just as too much coal will smother the fire. Yet you cannot get up much steam with a thimbleful of coal.

Food is divided by home economists into three divisons that are easy to remember: First, the tissue-formers or body-builders, which include proteins, water and mineral matter; second, the energy or work and heat-producers, meaning carbohydrates, fats and proteins; third, the regulators of body processes, as mineral matter and water. From this classification it will be seen that we must have a varied diet to keep the body strong, energetic and well. And to get this varety so that all elments are properly represented is what we mean by a balanced ration. This balanced ration includes a protein food, a starchy food and a succulent or green food. Protein is found in lean meats, dried peas, dried beans, milk, eggs, fish, cheese, lentils, some nuts, wheat, oats, corn, barley and rye. Fat is the most concentrated form of energy and is found in olive, peanut oil and other oils, butter, cream, bacon and other fat meat and nuts.

Proper Food at Proper Place.

Carbohydrates supply energy in the form most economical to the body. These are found in all the cereals, just as protein is; the sago, tapioca; starchy vegetables, as potatoes; in sweets, as honey, sugar, sweet dried fruits. Mineral matter is distributed through the foods mentioned above and in green vegetables and fruits. Water is a food, too, as it helps to build the body and to regulate it. Over half of the body consists of water.

In studying the above lists it will be seen that it is not such a difficult problem to get the balanced ration after all. A bowl of well-cooked mush, with milk or cream, will give it for the average person. Oatmeal is richer in fat, phosphorus and iron than some other cereals. That may be one reason why it has been found a well-nourishing food in many countries, Scotland, for instance. Some of the cheaper cuts of meat are just as full of protein and mineral matter and fat as the more expensive. Mutton, for instance, was selling for 18 to 20 cents a pound, when a pin bone roast of beef costs 25 cents and a leg of lamb 25 cents. Mutton chops, 22 to 25, with lamb chops 25 to 30. The use of mutton is advised by the United States Government Home Economics Department. The following recipes have been tested in their laboratories:

Oven Pot Roast.

Three pounds mutton from the shoulder, one cupful potatoes cut into small pieces, one cupful carrots cut into small pieces, one-quarter cupful sliced onion, two tablespoonfuls flour, salt.

Put the meat into a earthenware bean pot and cover wth boiling water. Place the cover on the pot and let the meat cook in a moderate oven for two hours. Add the vegetables and the sale, cover again, and cook for one hour. Reduce the liquid in which the meat and vegetables have been cooked to one cup and thicken with flour.

Shoulder of Mutton Braised With Turnips.

Six pounds mutton from the shoulder, one onion, one carrot, one stalk celery, four cloves, one-half bay leaf, one quart water, six turnips, salt.

Cut the onion, carrot and celery into small pieces and put these with the shoulder of mutton into a deep baking pan. Cover and allow the mutton juice with them. Then add the water, cloves and bay leaf. Cook in a moderate oven until the meat is tender, which will be about 20 minutes for each pound. One hour before serving, add the turnips, which have been peeled and parboiled.

Braised Breast of Mutton.

One breast mutton, few slices bacon, one-half pint stock, one lemon one onion, salt.

Line the bottom of a casserole or other earthenware baking dish with a few thin slices of bacon, lay the mutton on these and put over it the lemon, which has been peeled and cut into slices. Cover with one or two more slices of bacon and add the stock and onion. Cover the dish. Cook slowly on the top of the stove or in the oven until the meat is tender.

Mutton Smothered in Tomatoes.

One and one-half pounds mutton steak, one cupful breadcrumbs, one small onion, poultry seasoning, salt, one can tomatoes, or 1 quart fresh tomatoes cut in slices.

Spread over the mutton steak a layer of bread crumbs mixed with the minced onion and other seasonings. Roll and tie into shape. Place in a casserole or other dish with a tightly-fitting cover. Pour the tomatoes over the meat and cook very slowly in the oven or on top of the stove for three or four hours. If the tomatoes do not cover the meat, add a little boiling water.

Utah had a greater increase considering population and acreage than any other state.

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7

COTTAGE CHEESE LOAF WITH BEANS OR PEAS

1 cupful of cottage cheese, ¼ teaspoon soda to neutralize acid, 2 cups of cooked beans, 1 cup of boiled rice (dry), 1 cup of dry bread crumbs (corn or Victory bread), 2 tablespoons of chopped onion or ½ teaspoon of onion juice, 2 tablespoons of savory fat.

Chopped celery or celery salt, or pimientos, or Worcestershire sauce, or mixed poultry seasoning.

Peas and small lima beans may be used whole, Mash larger beans or put them through the meat chopper. Mix beans, cheese, bread crumbs and seasoning well together and form into a roll. The roll should be mixed very stiff, for it will become much softer on heating. Bake it in a moderate oven basting occasionally with a well flavored fat. Serve with tomato or other sauce.

Suggesed dinner menu: Cottage cheese loaf made with dried lima beans; fried onions; buttered carrots, dandelion greens, spinach or green salad; oatmeal bread; coffee; apple or berry tart a la Liberty (i.e. a one crust pie with crust made of 50 per cent corn meal and served with cottage cheese on top).

SPICED CHEESE PUDDING

2 slices stale bread, 2 eggs, ½ teaspoon salt, 1 cup milk ¼ teaspoon soda, ½ cup sugar, ¾ cup seeded raisins, ½ teaspoon allspice, ¼ teaspoon mace.

Cut the bread into cubes and place in a greased baking dish. Beat the yolks and whites of the eggs separately. Blend the yolks with milk, salt and sugar, and cheese to which has been added the soda. Add the spice, chopped raisins and lastly fold in the stiffly beaten whites. Pour this mixture over the cubes of bread and bake like a custard in a moderate oven.

If desired the whites of one egg may be beaten separately; sweetened with one tablespoonful of sugar and spread over the top of the pudding, just before removing it from the oven.

SALT-RISING BREAD

One pint of sweet milk, corn meal to thicken, 1 gallon flour, 1 tablespoon sugar, 1 teaspoon of salt, pinch of soda. Set in warm place all night, in morning will be light. Put the flour in large bowl, add the sugar, salt, and soda. Pour in the mush and mix with warm milk and water (equal parts). Make a stiff batter, cove rand keep warm. In an hour it will be light. Work in flour to make a stiff dough, let rise, mold in loaves, put in greased pans—let rise again and bake 45 minutes in moderately heated oven. This makes the sweetest and most wholesome bread a family can use.

APPLE LEMON PIE.

1 egg, 1 cup of sugar, 1 tart apple, juice and rind of 1 lemon, butter the size of a walnut. Beat eggs and sugar together. Slice the apple very thin, place in a layer in the bottom of a pie pan lined with rich pie crust; add grated lemon rind and juice with 1 tablespoonful of water to the eggs and sugar, beat well, pour over the sliced apples. Bake with a top crust.

GINGER CAKE

1 cup molasses, ½ cup butter or lard, 1 tablespoonful soda dissolved in hot water, 1 tablespoonful ginger, ½ cup sour milk, 1 cup raisins, and flour sufficient to make a soft dough. Mix molasses, butter and ginger well before adding milk, soda and flour.

CHEAP SCRAMBLED EGGS

1 cup of cold oatmeal, 2 eggs, 1 tablespoonful of butter or lard. Heat, then add the eggs; when the eggs begin to set, put in the oatmeal and stir until done. Season with salt and pepper as desired.

BALANCED RATIONS

No words are more familiar to the ears of those people who attend farmers' institutes, livesock meetings and dairy conventions than balanced rations. It has come to be regarded as a truism that no animal can be kept in the best conditions or make a profit for its owner unless its ration is balanced to suit its needs. Men grow enthusiastic in discussing this subject and they will neglect no opportunity to study the nutritive value of the various feeds to which they have access and to learn what will best serve their purpose in the growing of profitable farm animals.

This is all eminently proper and I have not a word of adverse criticism to offer concerning it. This is a legitimate branch of farming and rightly commands the attention of a majority of farmers. But too often the study and use of balanced rations begins and ends with the animals of the farm. Too seldom is a thought given to the proper balancing of the rations of the farmer's family. Yet the latter is of as much more importance than the former as human life is more important than animal life.

It is true that the subject of balanced ration for the farmer and his wife and children has received more attention in recent years than it ever had before, but is not yet given the place it deserves among the things that are considered essential on the farm. Far often it is treated as if it were only a matter of secondary importance whereas it should always have first consideration.

While a properly balanced ration for the family and a knowledge of how to prepare it, is important at all times, it is doubly so now, when we are being asked to conserve foods in every way that we can and to find substitutes for many articles of food to which we have been accustomed all of our lives, in order that a sufficient quantity of those articles may be furnished to the soldiers. It requires a wide and varied knowledge of foods and their constituents to prepare a ration for the family which is nutritious, healthful and appetizing and which shall be perfectly adapted to all of their requirements. When it becomes necessary to use substitutes for articles which have always been regarded as indispensable, the task becomes doubly difficult. For, it should be remembered that none of these substitutes dare be inferior to the things for which they are substituted, because the people on the farm need to be better fed than ever before so that they can bear the additional burdens which are being placed upon their shoulders.

To permit the farmer and his family to be poorly fed in order to furnish a greater supply of the best food for the soldiers, would be literally "killing the goose that laid the golden egg." The time would not be far distant when both farmers and soldiers would suffer as the result of such a short-sighted policy.

Considered from every standpoint and in all its bearings, the subject of balanced rations for the family is one of the most important with which the farmer's wife has to do. Its successful mastery means strong, healthy, efficient workers on the farm and healthy, happy, growing children. Failure to appreciate its importance and to provide accordingly means just the opposite.—A. B.

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THROUGHOUT the West—go where you may—big town, small town, crossroads store—there you will find Ghirardelli's.

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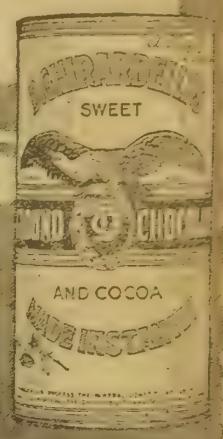

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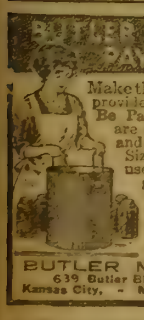

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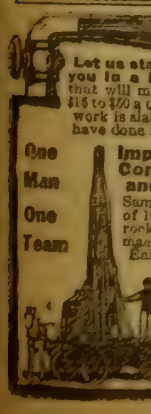

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Saving Damaged Trees

Some writers give the work the fanciful name of tree surgery. It really consists in cutting out decayed wood, filling cavities and bracing limbs which might be broken by the wind. Wealthy men have paid hundreds of dollars to save a single fine old shade tree. Sometimes the charm of an estate depends largely upon a few trees, the loss of which would be irreparable. Again, there may be some old fruit trees in the garden which are well worth spending a few dollars on, in order to keep them in bearing condition.

Nature pursues violent methods. With her blustering winds, her storms of sleet, her cloud bursts and the insect pests she fosters, many trees would have their lives materially shortened did not man step in with his palliative measures and give them many added years.

Wounds caused by the breaking of limbs or improper pruning are a prolific cause of tree troubles. The live portion of a tree is the cambium layer, just under the outer bark. This cambium layer is really a film of growing tissue and through it the sap ascends and descends. The outer bark protects it; the tree within is merely the skeleton or support. So long as the inner wood is sealed by the cambium layer it remains sound and whole. Expose this inner wood to the air and decay will at once set in. That is what happens when a limb is broken off or when it is severed with a saw and the wound not painted. The cambium bark will always seek to grow over a wound and often will succeed when it is but a small one. Large wounds, however, will eventually spell death for the tree if left alone. This is the way the great cavities in old trees begin. Gradually those cavaties are extended until the trunk is weakened and the tree goes down with a mighty crash before the gale.

On a well-kept place there will be no cavities in the trees because all limbs will be cut off close to the trunk at pruning time, and if branches are broken down by the wind the stumps will be cut off in the same way. Then the wood will be painted with coal tar of a heavy oil paint. Soon the bark will begin to roll over the edges, there will be no place for water to stand and no permanent damage will result.

On places which have been neglected, however, many trees with cavities will be found. Whether they will be worth the attention and expense necessary to save them will depend upon their natural value and their owner's attitude toward them. If the cavities are small the owner may do the work himself and the cost will be small.

All diseased tissue must be removed until only sound wood remains. Then the inside of the cavity should be painted with a heavy coat of coal tar as a antiseptic. Finally the hole should be filled with the best quality of cement mixed with good sand. If fairly large cavity is encountered, stones may be used to help fill it. The cement must not extend over the bark at any place or the job will be a failure for water will get in. The object is to cement over the hole in such a way that the bark will have a chance to roll over it, and to facilitate this, the cambium layer should be cut along the edge. The work is very similar to that of a dentist filling a tooth and really requires the same painstaking care. A simpler plan, though less sure is to fit a piece of zinc over a cavity, making it a trifle smaller than the hole, so that the bark will roll over it and seal the edges. It is good practice to treat a fresh wound in this way, if it is large.

Often trees start to split or show other signs of weakness but may be made secure by bolting some of the limbs together. The common plan of putting iron bands around the limbs is a great mistake, though, for these bands grow into the limbs and cut off the circulation. The proper way is to bore holes through the wood for the bolt and to screw a nut with a large washer to each end. It is an advantage, too, to have the bolt divided at the middle, with a few chain links to hold the parts together. Then the limbs, while fully supported, will be able to sway in the wind in their natural manner.

TREES FOR SHADE

Shade trees do not always have the consideration that they deserve. The farm home always has a vacant appearance without trees. They shade the home grounds and protect the home from the burning rays of the sun; they check and deflect the chilling winter winds; they impart moisture to dry parching winds. Trees properly placed on the home grounds emphasize and heighten the effect of the buildings; they give the farmstead a homelike appearance that cannot be had without them.

The kind of shade trees best suited to your conditions may not be suitable for your neighbors. One should study his conditions and become familiar with the adaptations of certain trees if possible. Still it is not easy to make a mistake in tree planting. The important thing is to plant trees.

Some people prefer both shade and fruits. This is not a bad plan if one has limited space. But farmers who have plenty of land for orchard, nuts, vines, etc., will generally find it best to plant hardy trees suitable for shade only in his yard rather than try to combine utility with beauty. Walnut and a few other trees make most excellent shade as well as bear nuts, but they are slow growers and it is a question as to whether it is not better to plant trees that grow fast and soon supply shade and other protection, rather than try to combine nuts and shade. That is a question each should consider and settle for himself.

There are a number of hardy, beautiful and useful trees which may be selected to plant near our homes. Most every home owner has his preference and none other will please him quite so well.

The elms are very pretty, generally hardy and grow comparatively fast. The American Elm has been popular since the first settlers came to America. The Indians had many traditions concerning the elm, and as history readers remember, William Penn made one of his famous treaties under a great elm near Philadelphia, said to be "the only treaty never sworn to and never broken."

There are several species of elms attractive and useful for adorning home grounds.

The maples are among our most attractive trees. They are much more common farther north, still they may be found in many yards and on lawns. They grow fast and are comparatively hardy, although maple scale sometimes gives trouble. Silver maple with its shining, lobed leaves and symmetrical branches is well worth considering.

Sugar maple, red maple, Norway maple and others are grown.

Box-elder is very closely related to the mapels. It, botanically speaking, belongs to the same family, Acer. It makes a dense, heavy, cool shade, as its habit of growth is suitable for this purpose. When left it produces a very dense, heavy head and has an enormous leaf surface.

The populars are preferred by some. They grow very fast and soon become useful, but in some trying climates and on thin or shallow soils may soon fail. The Lombardy has a very tall habit of growth and properly placed gives grace and emphasis to the home. However, in old age they present a rather pathetic appearance, as the branches die and the tree becomes "straggling." The Carolina popular has a more dense head and is better for shade.

The oaks are very desirable as a general rule. There are many of them, all of them worthy of attention. They are durable, attractive and long-lived. For shade and beauty and strength in setting they are very desirable for the yard or lawn. The oaks will give satisfaction.

There are many other trees, such as the sycamore, the cottonwood, the mulberry, the black locus that are worthy of consideration.

HOME MERCHANTS

A trade journal has made the startlong statement that 95 out of every 100 storekeepers in the rural districts and the small towns of the country are ready and anxious to sell out. We do not believe this statement to be true. Although we must confess that there is very large discontent among the merchants throughout the country, the art of merchandising has greatly advanced during the last 25 years, and the retailer in the smaller towns is the last business man to realize the change of methods or to put them in use, which is greatly to his disadvantage. Our merchants should wake up to the necessity of using in this day the most modern of methods in dealing with the public.

The catalogue firm is the dread of all rural retailers, and the dread has some justification, right in this community there are thousands of dollars going out of the town to different catalogue houses constantly, which should be spent in our home town for every reason, but mainly for the benefit to be derived by the entire community. For when you patronize the home merchant you are helping your own town and all the surrounding inhabitants.

The townfolk as well as the country people who patronize the mail order firms, we believe that they have made no direct saving and have not lowered their living costs. Even if they had they were neverthèless the losers in the end for the reason that they have sapped the business life of the community and their neighbors. For they have set the price of their lands and homes on the down grade. They have in reality depressed local wages and labor.

A chief cause of catalogue business taking business away from local business is that the rural merchant does not keep his store in the modern way, does not know how to buy merchandise or display it attractively, is ignorant how to advertise and to arouse interest.

But the small town retailer need not yield to the mail order house. Let him advertise, arrange and display his wares attractively, and manage his business modernly. He enjoys the surpassing advantage of personal acquaintance with his customers.

"What's the difference between a Socialist and a plutocrat?" "There are many, but the leading one is that the former fights for his principle and the latter for his interest."

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FARM BARGAIN

160 acres, cuts 200 tons of hay, 45 head of cattle, 4 work horses, implements, good pasture, a few apple, cherry, pear and small fruit trees, 8 room house, barn, machine sheds, wagon scales, blacksmith shop, close to school and open range, good water right. ($16,000 Terms.

FEDERAL LAND COMPANY
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The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

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I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.

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560 ACRE Cattle Ranch situated in the great Bridger Valley at Mountainview, Wyo. 2 Good Houses and all out Buildings in first class condition. This place is located near the best Range in the State nearly all free range. Over 300 head of cattle wintered off the hay crop of this place last year. The place is well fenced and crossfenced and has an excellent water right. Price $25,000.00. $12,000.00 down balance in 5 years. We have a few other places at a bargain if this don't suit. Make your inquiry today. Address

HARVEY & HARPER
Box 248 Evanston, Wyoming.

RELIABLE FARM BARGAINS

We have some very exceptional bargains to offer in southern Idaho. This land is situated right near the railroad and a good town. We are offering 40 acres all fenced with full water right, having been farmed for a number of years, and is one of the best little farms in that particular location. This farm is on the main county road, right near good schools, churches and first-class social conditions, at $75.00 per acre, 10 per cent down, ten years' time on the balance at 6 per cent. We will consider taking Salt Lake City property in part exchange for this.

40 acres in the same locality, 2-room house, good barn, sheds, well and other outbuildings, place all fenced, irrigation ditches all made, has been farmed for a number of years, 15 acres of alfalfa, balance to diversified crops. This property can be had for $90.00 per acre, a small payment down and good terms on the balance.

80 acres, all fenced; has been farmed for a number of years to potatoes, grain and sugar beets; full water right, on the main county road, right near schools and church. The price of this land is $70.00 per acre, 10 per cent down and ten years to pay at 6 per cent interest on deferred payments. Will also consider exchanging this for Salt Lake property.

184 acres at Thatcher, in the Bear river valley, right near the beet dump. This property has a first-class crop on this year, a part of which will go with the sale. This property can be rented for $24.00 an acre cash rent per year and we are only asking $185.00 per acre, $10,000.00 down, terms on the balance. This property is equipped with every modern convenience, first-class water right, water piped to the house and barns for domestic purposes. In our opinion this is one of the best farms in Utah and it is seldom a farm of this class is for sale.

KIMBALL & RICHARDS
"Land Merchants."
54 South Main St.
Was. 963.

WE SELL FIRE INSURANCE.

MOTOR TRUCKS USEFUL TO THE FARMERS

The suggestion has been made that extensive road improvement be stopped during the period of the war, but this has been considered a bit of false economy, because this is the period when motor vehicles are beginning to find their place on the farm. Now, more than ever before, farmers must economize in time, and improved roads over which motor trucks and motor cars can travel the greater part of the year are one means of economizing in time and marketing farm produce.

Good roads pave the way for motor trucks. These trucks are gradually coming to be used, more generally at present by men who make it a business to haul farm produce and livestock for farmers. In one nearby community, which is about eight miles from a shipping point, one truck owner does a great deal of hauling for his neighbors, thereby making his truck a paying investment. His truck is a flat two-ton truck, for which he had constructed a rack suitable for hauling hogs, sheep and calves.

The advantage of hauling hogs and sheep to the shipping yards in a truck is, that they can be gotten there in a much shorter time than with a wagon. The shrinktage on the road is heavy, especially if the way be long and the weather warm. A saving of a few pounds on each hog in delivering them quickly will easily compensate for the cost of transportation; time is a big factor when one is trying to keep down the shrinkage. Another man uses his truck in a similar way. One day between showers he made five trips to the city with baled straw, a distance of about three and one-half miles, hauling between thirty-two and thirty-five bales at a load. A team and wagon would have done well to make two trips, as the roads were rather broken and rough at the time. He hauls loose hay and straw also, hauling practically as much hay on the truck as is usually hauled on a wagon. As the body of the truck is low the bales are easily loaded or unloaded by one man. For light hauling the trailer has come into pretty general use. Its chief advantage lies in the fact that it can be hitched to the pleasure car. I have in former years seen farmers hauling a sheep, calf, truck and farm implements in their cars, but the trailer is largely used for this purpose now. Some have built their own trailers on a pair of buggy wheels, but due to the weight and frailty of such wheels they soon rack to pieces. Low, substantial wheels are necessary, for there is a great deal of side motion and strain on them while traveling fifteen or twenty miles an hour. The farmer who owns an automobile can increase its usefulness as an aid to his business by buying a trailer. Trips to and from town can be made quickly and larger loads can be hauled than if the car alone is depended upon.—J. L. J.

GETTING THE GOOD FARMER'S POINT OF VIEW

A gentleman who had been a professor of agriculture for a number of years naively confessed to us that it took him three or four years after he quit teaching in college to get onto the ways of the best farmers of his community. Theoretically he knew how farming should be done; but he discovered that the farmers did not take very much stock in him at first. They were amused at his effort at actual farming, and it took him some time to get their confidence and to learn the ways of the best farmers.

There are farmers whose ways should be avoided; but the best farmers of any community know a few things that the agricultural college can not teach, things they have learned by actual experience. They have learned a good deal about the soil, not scientifically or by reading or listening to lectures, but by actual experiments, although they do not call it experimenting.

Pennsylvania farmers fifty years ago knew about the benefit of liming the soil, though they did not know that lime flocculated the soil. They merely understood that it made the soil "more lively" as they said. They did not know that it corrected acidity. They simply knew that they could grow clover after they applied lime on lands where they could not grow it before—they did not know why. This applies to every state in the Union. Farmers have bumped into a lot of things, and by bumping have learned things which they could not learn in any other way.

Then it takes an agricultural professor some time to learn how to do the thousand and one things on the farm that can not be taught in books—how to hitch and unhitch; how to do this thing in a certain emergency, and how to avoid doing the other. These things can not be learned except by doing them.

We have observed that a great deal that is taught in the agricultural college is simply explaining why the things which the farmer did worked out as they did, telling the reason why the farmer did certain things. This is an important thing to know, and is really a great help to the farmer; but, after all, the important thing is to find out the fact, and then get the reason for it afterwards.

This explains why the farm reared student gets along so much better in an agricultural college than the man who does not know the art before he studies the science. Art and science should go together, but the boy reared on the farm, who has first acquired the art by doing every mortal thing that is to be done on the farm, and knows how to do it so well that it almost does itself, has a great advantage over the boy who has to learn the art as well as the science. We believe it would be a good thing for every town raised boy who goes to the agricultural college to take about two years off in the midst of his course, and go and hire out to the best farmer he can find, and by actual experience learn things which will be inestimable help to him afterwards. He is then much better fitted to finish his agricultural college course, and get the most possible out of it.—Exchange.

LATCHES

The latch on a gate or a door may be the means of saving time which is money and in some instances possibly prevent loss of life. The farmer who carries his gates around will not be interested in this article unless he is tired of following that all too common method.

The first essential is to have the gate or door swing freely on a good strong pair of hinges. Then comes the latch, which must be sufficiently strong to be dependable after many years' use. Life is all too short to spend time in lifting gates and doors and propping them open or shut. The old fashioned wooden latch, such as our forefathers used on their cabins, is not difficult to make and will answer the purpose quite well, but a good iron or steel latch is better.

Anyone who has a forge and is at all handy with tools can make good use of rainy days by making good serviceable latches that work by gravity similar to those used on houses before doorknobs were so common.

One thing to avoid in making or buying a door-latch is a projection of any kind that may catch and break harness as horses pass through. There are a number of good latches on the market that are quite durable and do the work for which they are intended but in buying a door-catch be sure to select one made of steel or malleable iron.

Swinging doors on windy days are a nuisance to say the least, but to those who work around such buildings they are positively dangerous. Several years ago there lived a certain well-to-do farmer not far from the home of the writer and on a very windy day as he was passing through the barn door it was blown shut with great force, striking him on the head with such force as to cause instant death. In this case a good latch would have saved a life. It is easy to imagine a small child wandering through the barnyard into the barn when gates and doors are left open through carelessness or lack of good fastenings, which might result in a serious accident or loss of life.

The time, spent in turning a wooden button or fastening a hook is lost when one considers that with a good latch a push and the door or gate is caught and held securely. A few hours spent in straightening sagging gates and doors around the farm and putting on good latches is not only an economy but it is a duty.—Walter H. Rowe.

FOR THE HOME TABLE

To make cream omelette place in a saucepan a tablespoonful of butter or butter substitute; as it melts add a level tablespoonful of flour and stir till perfectly smooth. Then add a cupful of sweet milk; cook till thickened, stirring constantly. Beat separately the whites and yolks of three eggs; mix the yolks with the hot white sauce, then add the stiff egg whites, season with salt and pepper and fry in hot drippings, turning carefully one half over the other half, when sure the omelette is set. Brown delicately, turn onto a heated plater and serve at once. This is a most delicious omelette and never fails. The quantities here given will serve four people moderately. The secret of a tender omelette is to cook it very slowly till the eggs are "set."

NEAR-MAPLE SYRUP.

Make a plain sugar syrup of granulated sugar and water and, when it has boiled till thick enough, take from the stove and add a teaspoonful or less of maple favoring, which can be purchased from any grocer.

This is the Mower that's Easy on the Team

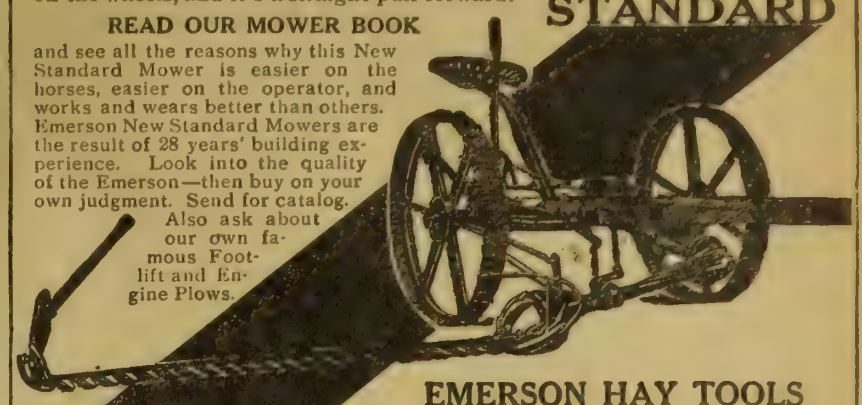
Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

EMERSON STANDARD

READ OUR MOWER BOOK

and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.



EMERSON HAY TOOLS

Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

Miller-Cahoon Company

MURRAY, UTAH IDAHO FALLS, IDAHO

Protect Your Ford Now

Don't let summer find your Ford unprotected against high motor temperature. See to it that your crankcase is always filled with

Simplex Ford Motor Oil

—made especially for Ford Cars driven in this intermountain section. Its velvety smoothness is absolute protection against friction. "Every Drop Counts."

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125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.

FREE BUS SERVICE To and From all Depots

All Cars Stop In Front of Our House

A home like place for local people where you will meet friends.

Good Rooms 75c, $1 and up.

The Windsor Hotel Co.

M. A. Scott.

LIVE STOCK

GETTING A START WITH PUREBREDS

In starting a herd of purebred hogs greatest care should be exercised in the selection of the foundation material. One of the very important phases of the beginner is to see that each animal he secures is of profitable type and characteristics on the basis of market production. His foundation animals should show stretch, capacity and should be from prolific strains.

The quickest way to get a money-making start in the purebred industry is to purchase bred sows. In selecting these individuals care should be taken, as suggested above, to secure only those who are of real brood sow conformation, how they should be purchased, and mated to good boars that have an established reputation. In selecting herd sows it should ever be remembered that one good sow is worth two or three of an inferior kind. Individuality is important, but unless that individuality is backed by such blood lines as will guarantee the reproduction of that individuality the purchase will never prove to be as satisfactory as it should.

The first year's crop of pigs should be culled exceptionally closely. This again emphasizes the importance of careful selection in herd sows, for it is only the prolific large, stretchy brood sows that can produce profitable pork for market. A beginner should be satisfied with a moderate number of purebred acres in his first year of business. It should be remembered that veteran breeders, who are nationally known and who have been prominent in the business for years, spent years of effort in reaching the position which they hold. Such effort should be given by new breeders to see that every animal sent out on a purebred order should be one that will mean a permanent customer, for it is only by these kind of sales that a reputation can be established and maintained.

In purchasing brood sows it is not advisable to secure too many of one line of blood, nor should they carry blood of many distinct types. If several sows of the same blood are purchased it is but a few matings before new blood must be introduced, which adds to much to the necessary investment. If the blood lines represent too much varied type, then the herd will lack uniformity and will represent a little herd character.

From the first crop of pigs the best gilts should be saved for use in the herd. Then, by careful selection of herd boars from the litters farrowed by the first sows, uniform type animals will be secured that will stamp the breeder as one with a purpose.

If it is necessary to purchase a herd boar, a new breeder should not be in a great hurry in making his selection. A poor boar is expensive at any price. The counsel of expert judges and breeders of long experience should be sought and carefully observed, although to make a success no new breeder should never eliminate his own originality from his breeding operations. He should have in his own mind a fixed standard and strive to reach it through his own efforts and the carefully weighed counsel of his more experienced fellow breeders.

Breeding of livestock is a business in which few can make themselves famous. It is one in which but a limited number can become prominent, and it is true that a vast majority are either ordinary breeders only or are absolute failures at the business. A new breeder should determine to make his name synonymous with breed development, by working toward a definite end and by establishing his reputation as a business man of highest integrity. The purebred breeding industry is not a "get rich quick" proposition. If properly managed and conscientiously handled it brings remunerative returns, thoroughly in keeping with the investment of time and money expended upon it, but it will not make anyone immensely wealthy, and a man who enters the purebred field with the idea of "getting rich quick" had better direct his efforts into other lines, and finally he should remember that in the ultimate end it is only those breeders who adhere strictly to their ideal that make a success, and that the measure of their financial remuneration is directly proportionate to the service they render, to their giving value received to their customers and delivering full measure each year to their ideal in production.

PROVIDE GOOD HOG HOUSES

Ray Ensinger.

Success in the business of hog raising not only requires good management in selecting, breeding and feeding but also demands good housing. Especially is this true six or eight weeks in the winter and up to the time they produce the spring crop of pigs.

Expensive houses are not necessary. The thing is to provide comfortable houses that are dry, well ventilated and supplied with windows to admit the bright rays of the sun. Damp-like holes back into the old straw stocks, which are used for shelter in the place of houses help the activity of germs so that even the healthiest of hogs may become easy victims of cholera or other diseases.

In the location of a hog house the best plan is to build upon high, well-drained ground and where there are good windbreaks. The south and east side of a grove is the best location as this breaks the cold winds and shelters the pens and yards.

Plenty of good exercise is essential for the welfare of the brood sows and their future litters of pigs. Scattering grain upon the ground makes them exercise more than feeding in troughs.

A south frontage is best for the hog houses. Windows placed in the upper half of the front admit the bright sunlight and long narrow openings at the tops closed with hinged doors which may be left open on warm or mild winter days to admit the sun and air. In the construction of the house care should be observed to provide a good tight roof and walls that are not full of cracks, especially on the north side. Leaky roofs where the cold rains beat in on the hogs, soaking up their bedding on the floors, and cracks that permit cold drafts of wind to blow directly upon the hogs, all cause troubles and disease with resulting losses. The houses should be sufficiently ventilated so they do not become overheated in cold weather. Hogs will pile up and the heat from their bodies produce considerable warmth. A smaller number in each pen tends to lessen danger of overheating and loss from pneumonia.

A few years ago there was a large loss of hogs on account of crowded, ill-ventilated and overheated sheds. For a time it was thought that the hogs were dying from cholera but later it was found that the loss resulted from improper housing. Hogs allowed to sleep on manure piles or around old straw stacks will become overheated and upon sudden exposure to cold are very susceptible to a severe attack of pneumonia. A hog's normal resistance power is high and if compelled to do so will use up the fat of his own body in keeping up his body temperature. Burning hog fat when hogs are hovering near the $20-mark is an expensive proposition to

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

the hog raiser.

Proper housing and sanitation will go a long way toward preserving the health of the hogs and will often save a serum bill as well as a preventative against ravages of cholera or other diseases which we must protect against.

ESSENTIALS TO GOOD HOG HOUSES

Here are the six major points to be considered by the man who is planning to build a hog house, as set forth by the Illinois experiment station:

1. A hog house should be located so that it is well drained, well lighted and gives access to pasture, good shade, pure running water and clean mud wallows.

2. The two principal kinds of hog houses are the individual houses and the large houses with individual pens. Each has its points of advantage.

3. For sanitation the building should be constructed so that it is dry, ventilated, free from dust and drafts, and so that the direct rays of the sun fall upon the floor of the pens at the time the winter crop of pigs is farrowed. These rays should also be excluded during the summer.

4. The building should be made serviceable by being built so that it can be used every day in the year, and be arranged so that the largest amount of work may be performed with the smallest amount of labor.

5. For large houses gates and partitions made of wire are best, because they do not obstruct the light and heat rays from the sun, do not hide the pigs from view of the attendant, nor from each other, and do not furnish lodgment for disease germs.

6. The large hog house is operated so that two litters per year are farrowed and grown for market and so that the pigs are put on the market at the most favorable season.

Sun light is the best disinfectant that nature has provided for us. It kills more disease producing germs than all other agencies combined. The consideration of sun light should be of first importance to the man who is contemplating building a hog house. Plenty of sun light will keep the house dry, warm and comfortable. It puts dampness to rout and makes a hog house livable.

RAISING THE CALF

(Continued from page 5)

a feed on each of the following days until the calf is ten days old, when it can be fed two times daily, giving 5 pounds of milk at a feed. This is continued until calf is three weeks old, when 6 pounds of milk is given at a feed.

8. At end of fourth week begin to change to skim milk by decreasing whole milk 1 pound a day and in its place use skim milk, 1 pound the first day and increasing a pound each day until finally only skim milk is fed.

9. Continue feeding skim milk until calf is six months old if possible. Skim milk should be sweet, clean and warm (95 degrees F.) and do not feed over 18 pounds a day.

10. If skim milk is not available continue feeding calf 12 pounds whole milk a day until calf is two or three months old. Profitable to feed milk until four months. A reliable calf meal can be used if milk is not available.

11. When calf is a week old teach it to eat grain, by placing a small handful in bottom of pail just after calf has finished drinking the milk.

12. Increase grain gradually and when calf is one month old it should be eating from ¾ to 1 pound a day. At two months it will eat about 1½ pounds a day.

13. The grain should always be fed carefully and each time the mangers cleaned out after the calf finishes its meal. See that the ration agrees with the calf and causes it to thrive.

14. At four months old the calf will be eating about 2½ pounds of grain; at six months 3 pounds. This will produce good results for the calf on up to nine months of age, then increase at rate of ½ pound each month.

15. A good grain mixture for calves up to 4 months of age is equal parts of ground oat, bran and oil meal, with milk and hay as outlined.

16. A good grain mixture for calves from 4 to 8 months is four parts bran; 2 parts of corn meal or gluten feed, and one part of oil meal, with hay and small amount of corn silage.

17. Begin feeding legume hay at same age you begin the grain; as calf learns to eat the hay feed it at rate of 1 pound per day per 100 pounds live weight. Do not feed too heavily of legume hay; it is quite laxative for young calves. A mixed hay is perhaps safer and is very good.

18. Provide fresh, clean water for calf. Do not have water too cold.

19. A small amount of corn silage can be fed two times daily to a four-months-old calf. Begin feeding about 2 to 3 pounds at feed and when calf is a year old, 18 to 20 pounds a day can be fed to advantage.

20. Young calves should become used to pasture gradually. Do not expect calf to grow its best the first year on pasture alone. Feed two to three pounds of grain a day depending on size of calf and character of pasture.

21. It is a good plan to dehorn calves by the use of caustic potash when calf is a week to 10 days old. Use care in use of the caustic.

22. Provide clean, well lighted and properly ventilated quarters. Avoid draughts, dampness and dark stalls.

23. Let them have plenty of exercise, protected from storms and excessive heat.

24. Keep calf growing and in a thrifty condition at all times.

25. Do not overfeed.

26. Be quick to detect digestive troubles and check them at once.

28. Judging together with common sense is necessary to successful calf raising.

29. Patience and gentleness are very close rivals of judgment and common sense.

30. Build up the herd by keeping the best heifer calves, from the best cows of known milk production and cost of keep. Use best pure-bred sire you can afford as to individuality, breeding and performance.

THIS IS NO JOKE

In these days of the high cost of living the following story has a decided point:

The teacher of a primary class was trying to show the children the difference between the natural and man-made wonders and as was finding it hard.

"What," she asked, "do you think is the most wonderful thing man ever made?"

A little girl, whose parents were obviously harassed by the question of ways and remains, replied as solemnly as the proverbial judge:

"A living for a family."—Pittsburg Chronicle-Telegraph.

To do it no more is the true repentance.—Luther.

A very fat old woman got stuck in the door of a car and could get neither in nor out. "'Sideways, ma'am! Try side-ways!" the conductor shouted helpfully. "Oh, drat the feller!" panted the old lady. "I ain't got no sideways."

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body — It is penetrating soothing and healing, and for all Old Sores, Bruises or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions, GOMBAULT'S BALSAM has no equal as a Liniment

We would say to all who buy it first it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

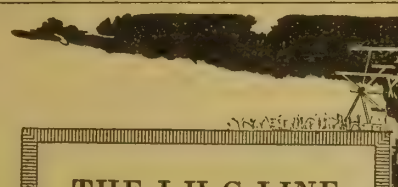
A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Gombault's Caustic Balsam did my rheumatism more good than $100.00 paid in doctor's bills." OTTO A. BERTH.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for booklet K.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.



IHC Machines Best Substitutes For Scarce Hired Help

THE I H C LINE

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Binders Headers Reapers
Rice Binders Push Binders
Harvester-Threshers

HAY MACHINES

Mowers Rakes Tedders
Combined Side-Delivery Rakes and Tedders
Side-Delivery Rakes
Hay Loaders
Sweep Rakes
Hay Stackers
Combination Rakes and Stackers
Hay Presses

CORN MACHINES

Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Huskers and Shredders
Shellers Stalk Rakes

TILLAGE

Disk Harrows
Peg-Tooth Harrows
Spring-Tooth Harrows
Cultivators (One-horse)

GENERAL LINE

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Gasoline Engines
Kerosene Tractors
Motor Trucks
Farm Wagons
Farm Trucks
Manure Spreaders
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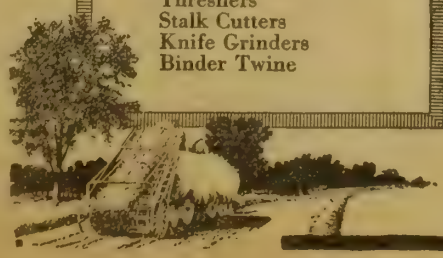
Knife Grinders
Binder Twine



THE American farmer produces more per man than any other farmer in the world. Using labor-saving machines, he produces record crops with less hired help than is required under any other system. Therefore, in the present crisis, with help so scarce, every farmer should use the most efficient farm machines he can get, the only kind that can be depended upon to make the necessary increase in production.

The International Harvester Company of America markets the full line of high-grade machines listed in this advertisement for disking and harrowing seed beds; planting and cultivating crops of all kinds; cutting, making and storing hay; cutting, binding and threshing small grains; harvesting, husking and shelling corn; shredding corn fodder, filling silos, fertilizing fields; skimming cream; and grinding feed. It sells efficient farm power machines, engines and tractors operating on the cheapest fuels a farmer can buy. It provides wagons and motor trucks for all kinds of farm hauling.

Many of these machines have been used by American farmers for close to seventy-five years. They have helped to establish the standing of the American farmer. They are better today, more efficient and more economical than ever before. In many cases, one or another of these machines will solve the hired help and farm power problems on individual farms.

International machines are sold through ninety branch houses and over thirty thousand local dealers. Any customer can place an order, or command the services of this organization, by a telephone call to the dealer, or a visit to the nearest town.

It is important this year that all orders for machines be placed as early as possible, preferably months in advance. See the local dealer, or write us about the machines you are going to need this year, and do it now.

International Harvester Company of America
(Incorporated)

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CHAMPION DEERING McCORMICK MILWAUKEE OSBORNE

Wasatch Farms Offers an Opportunity

to a few people to get into the cattle breeding and dairy industry on the ground floor on a big-paying basis

Some of the plans of the Wasatch Farms Company. Formerly Smith Brothers' Jersey Farm, owned and operated by President Joseph F. Smith and Son; Joseph F. Smith, Jr., David A. Smith and George C. Smith, who are the principal supporters of Wasatch Farms. The farm is at Holliday, 9 miles from Salt Lake.

Officers and Directors.

President, George C. Smith, Secy. and Treas. Fielding Invst. Co., Mgr. Smith Bros. Jersey Farm; Vice-President, George H. Butler, Assistant Cashier, The Utah State National Bank; Secretary and Treasurer, Glenn D. Grant, Cashier Beneficial Life Insurance Co.; Directors, Dr. Raphael S. Olsen, Baby Specialist; John F. Bowman, Attorney at Law; Oscar C. Hunter, Representing Shimer & Co., Inc., Philadelphia, Pa.

Produce Certified Milk.

Certified milk is produced under conditions that guarantee its cleanliness, purity, quality and food value. It sells 33 1-3 higher than ordinary milk. There is more profit in it than in any other kind of dairy product. Salt Lake today has no certified milk. Hospitals, physicians, invalids, visitors and people who can afford the highest quality milk for home use are demanding it. We have plans ready for the finest Certified Milk plant in the west.

Produce Market Milk.

Smith Brothers Jersey Farm—now Wasatch Farms—has never been able to supply the demand for its high-grade milk. Today three times the supply would not meet the demand. And Jersey milk brings the top price. We have plans ready for more than doubling the present production immediately and constantly increasing it.

Breed Registered Cattle.

Wasatch Farms has nothing but pure-bred registered cattle. The Smith Brothers herd has taken virtually all the highest awards for Jerseys at the State Fair for several years and there is a demand for their cattle all over the west. The herd is nationally famous. Many of the cows were imported from the Isle of Jersey. Special attention will be paid to breeding—the big paying end of the business.

Establish Up-Town Milk Station.

A modern distributing plant and milk station in the heart of the city will enable us to reach the consumer in the most efficient way. This milk station will be "different." Watch for it. Pepole who like to get buttermilk, sweet milk, cream, ice cream and other dairy products fresh from the farm will appreciate it.

Establish New-Plan Dairy Lunch

The products of Wasatch Farms will be sold directly to the public by the company. A big dairy lunch and refreshment parlor different from anything in the state is one of our plans. This will link up the farm with the public in such a way as to make an extremely valuable advertising medium as well as a source of profit.

Produce Farm Products.

Not only dairy products, but poultry, garden truck and other farm products that will serve our purpose will be produced. The company already has seventy acres within thirty minutes of Salt Lake. This will be increased to meet our needs. These plans have all been carefully made and future growth provided for.

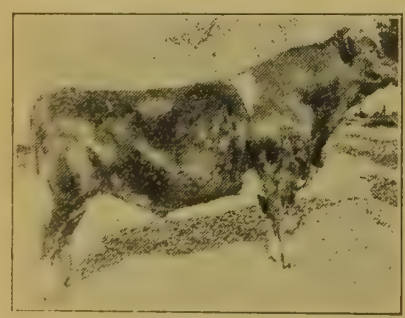
We Have a Limited Amount of Stock to Sell to Carry Out Our Plans.

We are selling only a sufficient amount of stock to complete our plans. But what is to be sold must be sold quickly. Contracts are ready to be let for the new farm buildings and the equipment for the certified plant must be ordered at once. Contracts let now will net big savings over future prices and work must be rushed to completion before fall. This announcement is intended to give an opportunity to those who would like to join in this enterprise to do so. We have one of the finest dairy herds in the United States; we have the farms; we have the experience; we have a model, producing plant. All we need is some additional capital to make one of the finest and most profitable business enterprises in the west.

SOME OF AMERICA'S FINEST JERSEYS
NOW AT WASATCH FARMS

JOLLY'S NEMORETTE
Granddaughter of World's Champion

EMMINENTS NEMO
Champion Butter Cow of Utah.



SCIENTIFIC SWIFT
A bull with a great record.

STOCKWELL'S KARMAC
Daughter of World's Champion Cow.

MAJESTY'S OXFORD VIOLET
Her calves are in great demand.

TAMBETTE'S LILAC
Imported from Isle of Jersey.

A part of the herd that made Smiths Farm famous.

The farm house and office of Wasatch Farms.

RESERVATION FOR STOCK

Wasatch Farms Co.,
54 Main Street, Salt Lake.

Please reserve.....shares of stock for me. Furnish me full information and if I am satisfied I will join you in establishing a modern dairy farm.

Name.....

Address.....

We want a few people to join us in this big project. Shares are $10 each, payable as called for by directors. Here's an opportunity for a few people.

If you want to be one of the few write us today.

Wasatch Farms Company

CITY OFFICE 54 MAIN STREET, SALT LAKE CITY.

POULTRY

POULTRY MANAGEMENT

In a recent bulletin from the Kansas Agricultural College, issued by the department of poultry husbandry, there are some timely suggestions. The following will be well worth remembering:

The objects of keeping poultry on the farm are to supply the home with fresh meat and eggs and to secure an income from the poultry and eggs sold.

Those who keep poultry largely for the home supply of meat and eggs will do well to select the Plymouth Rock, Rhode Island Red, Wyandotte, or Orpington. These breeds lay a medium number of brown-shelled eggs, and at the same time have a carcass large enough to meet most family requirements.

At present prices there is little question but that it is more profitable to keep fowls for egg production than for the meat they produce. Therefore, those who expect to secure a large income from their poultry will probably select such breeds as the Leghorn, Minorca, or Ancona. These fowls lay a larger number of eggs at a lower cost than the first-named breeds, but have a smaller carcass. They are superior to the heavier breeds as rustlers, but are affected more by sudden changes in temperature.

The selection of a breed within one of these groups is not as important as the selection of a good strain or family in the breed chosen. Some breeders select for egg production, while other devote more attention to shape and color. A growing number are developing families which combine all these qualities. The farmer, because of his requirements, will doubtless be more interested in the work of the last-named breeders.

The vigor of the fowls has to do with the health and mortality of the stock, the number of eggs laid, the per cent of these eggs which hatch, and the health and growth of the chicks hatched from these eggs.

A vigorous fowl should have a relatively deep, wide head, with a short, curved back. The eyes should be prominent and the comb well developed and fiery red. The body trunk should have the depth and width necessary to furnish ample room for the digestive and reproductive organs. A long, straight breast bone adds to the strength of the fowl, because it furnishes a better support for the digestive organs.

An individual supported by strong, parallel legs, with the nails of the scratching toes well worn, is desirable, while the long-nailed or "cow-hocked" individual should not be tolerated.

The development of the sex characters should not be overlooked. Hens with male characteristics lay very few eggs, if any at all. On the other hand, feminine cockerels are generally whipped out by the stronger males, and are poor breeders.

It is impossible to have the best of hatches unless the eggs are produced from vigorous hens which have been well housed and fed. The eggs from mature hens are more desirable for hatching than the eggs of pullets, for two reasons: (1) Mature hens' eggs are larger and hatch better than pullets' eggs, and the chicks hatched are larger and more vigorous; (2) pullets usually lay more eggs during the winter than hens; this tends to injure the hatching quality of the eggs laid during the following breeding season.

It is therefore advisable to select the strongest and most vigorous hens for the farm breeding stock. There is no reason why any distinction should be made between the breeding flock and the laying flock during nine months of the year. All should have the run of the farm. At least three weeks before the first eggs are to be saved for hatching, the breeding flock should be confined in a roomy pasture and mated with selected males.

It has been found, by recent experiment, that only the male can transmit to the female progeny the ability to lay the largest number of eggs. This is very fortunate for the farmer, because if highest egg production was inherited from the females, marked progress in egg production would necessitate the use of the trap nest and pedigree hatching, both of which are impractical on the general farm. As it is he can improve his stock by purchasing pedigreed males from high egg-producing lines and mate to his vigorous hens.

If kept closely confined the number of hens mated to one male should be from 8 to 12 for Brahmas, Cochins and Langshans; from 12 to 18 for Plymouth Rocks, Orpingtons and other fowls of similar weight, and 18 to 25 for breeds similar to the Leghorn, Minorca and Ancona.

EGG-PRODUCING FEEDS.

In a Three-Year Experiment Specialists Learn Values of Rations Under Different Conditions.

Feed to produce one dozen eggs costs 10 cents with pullets, 14 cents with 2-year-old hens, and 19 cents with 3-year-old hens, in a three-year feeding test recently reported by poultrymen of the United States Department of Agriculture. These were the cost figures of feed at the time of the experiment, which began in 1912, and must be corrected to present prices. Tables of rations and costs presented in the report enable poultrymen to make these corrections when compared to 1917 prices. In Bulletin 561 of the department "Feed Cost of Egg Production," the specialists describe in detail this test, which was undertaken to compare the costs of various rations fed under general farm conditions. Much information relating to feeding under the various conditions also was learned in the experiment.

Test Included 366 Fowls.

Starting with 6 pens of 30 pullets each, the test was enlarged to include 16 pens containing 366 fowls. Most of the pens were made up of 30 standard-bred pullets, bred and reared under the same conditions and selected for vigor, standard shape, and color. Some flocks consisted of fowls of one breed, while others contained more than one kind of pure-bred fowls of the general-purpose type. Pens of cross-bred pullets also were used.

With the exception of three flocks which were confined to good-sized yards, all the fowls were allowed free range over several acres of rough land. Detailed records were kept of the feed used, the weight of the eggs, and careful observations were made of the conditions which affect egg production, such as molting and broodiness. The test was conducted on the experiment farm of the Bureau of Animal Industry, at Beltsville, Md. Summarizing the results of the tests, the specialists draw these conclusions:

Average Egg Yields.

The average egg yield for the first laying year in all pens was 131 eggs, and the highest pen average yield was 169.5 eggs. In the second year the average egg yield of all pens was 92.7 eggs, which decreased to 78.2 eggs in the third laying year.

The average value of eggs over feed cost the first laying year was $2.56 per hen, falling to $1.41 the second year, and to $0.79 the third year. The highest average value in any pen was $3.41.

The general-purpose fowls consumed annually 72 pounds of feed, which cost $1.13, while the Leghorns at 55 pounds, which cost 87 cents.

Good results were obtained with rations both with and without oats. The use of this grain added variety to the ration without increasing the cost.

Effect of Feeding Beef Scrap.

Fowls not fed any beef scrap or other animal protein laid only 90 eggs during their pullet year compared with 137 eggs from the beef-scrap pens, and 84 compared with 83 in their second year. The eggs of the no-beef-scrap pens cost about 2.2 cents per dozen more to produce the first laying year, but these costs were about equal during the second year. The fowls not fed beef scrap laid very poorly in winter, thus materially reducing the value of their eggs.

Cottonseed meal used in place of beef scrap as a high-protein feed in the ration produced brown or greenish spots on the yolks of the eggs, especially in warm weather, making a considerable proportion of them unfit for market. Eggs were produced more cheaply and at a considerably greater profit on the beef-scrap ration.

Fish Meal as Source of Protein.

Fish meal at $7 a ton less than beef scrap proved to be a good high-protein feed, which can be used to advantage to replace beef scrap. The fish meal did not in any way affect the flavor or quality of the eggs.

General-purpose fowls allowed to select their own mash constitutents at a dry mash containing about 63 per cent corn meal, 19 per cent beef scrap, 9 per cent bran, and 9 per cent middlings. Leghorns ate a mash of about 66 per cent corn meal, 26 per cent beef scrap, and 4 per cent each of bran and middlings. No better results were obtained by this method of feeding than where the ground grains were mixed together in a mash.

Some Good Mashes.

Good mashes, as indicated by these experiments, may be made of 66 per cent corn meal, 26 per cent beef scrap, and 4 per cent each of bran and middlings, or 2 pounds of corn meal and 1 pound each of bran, middlings, and beef scrap, with a scratch feed in each ration of equal parts by weight of cracked corn, wheat, and oats, which is fed so that the hens receive about equal parts of scratch feed and of mash.

The Leghorns on free range gave a considearbly greater egg yield than those confined to a fair-sized yard. This difference was less marked in the general-purpose hens.

Cost of Green Feed.

Sprouted oats fed as green feed to hens confined to yards cost about 10 cents per hen a year and 1 cent per dozen eggs, not including any charges for labor and equipment. The hens ate on an average in one year about 1.3 pounds of oyster shell and 0.7 of a pound of grit, which together cost about 1 cent per hen.

The Leghorns did not lay as well in the winter as the general-purpose breeds, especially during their second year, but the Leghorns produced eggs about 3 cents per dozen cheaper during their first year, 6.4 cents cheaper in their second year, and 9.8 cents cheaper in their third year than the general-purpose breeds. One pen of Leghorn pullets produced eggs in their first year at a feed cost of 6.7 cents per dozen, while the value of the eggs per hen for the year was $3.41 over cost of feed.

Weight of Eggs.

The average weight of a dozen eggs from the general-purpose fowls during their pullet year was 1.53 pounds, 1.60 during their second year, and 1.63 during their third laying year. The eggs from the Leghorns averaged 1.45 pounds during their pullet year, and 1.49 during their second and third years.

The egg-production of the general-purpose fowls decreased 32 per cent in their second laying year. The decrease was considerably less in the Leghorns, their 2-year average egg production exceeding that of the general-purpose breeds by 19 eggs. The decrease in production from the second to the third year was only 4 per cent with the Leghorns, compared with 13 per cent in the general-purpose breeds.

The cheapest eggs are produced in the spring—during April, May, and June—while the greatest cost occurs in October, November, and December. The lowest monthly feed cost of a dozen eggs in any of these experiments was 4 cents, while in some cases no eggs at all were produced during the month.

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.

We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

$1000 Per Acre

Growing the ALTON IMPROVED RED RASPBERRY, Pamphlet free. Increase the yield of all your crops from 25 to 40 percent, grow from 200 to 500 bushels of potatoes, 300 to 600 bushels of onions, 30 to 50 bushels of wheat, 70 to 100 bushels, of oats per acre, all leading crops, in proportion, my free book tells you how.

H. A. PINEGAR
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DAY OLD CHIX
Wise economy is quality not price, we sell cheap when quality is the main consideration.
ARCADY PLACE HENNERY
is prepared to handle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.
A. T. SMURTHWAITE
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Black Diamond Dehorning Pencil.
Every pencil will dehorn 50 head from ten days to one month old for $1.00. Forfeit of $5.00 on any calf if it fails to dehorn.
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Registered Duroc Jersey Hogs.
Some good spring litters. Richard Defender and Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.
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Increase your profits by improving your stock.
Buy registered spring pigs now from
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WHO WAS HE?

"Father," said a boy of twelve, "who was Shylock?"

"What!" exclaimed his father, "have I sent you to Sunday-school for the past six or seven years, only to have you ask me who Shylock was? Shame on you! Get your Bible and find out this minute!"

GREAT ACCOMPLISHMENT

The government has accomplished more in the way of efficiency regulation and war preparation in the last eight months than in all its previous hitsory.

Send in your subscription to the Utah Farmer today.

Can't Be Fed As Herd

O. E. Reed.

Cows must be fed as individuals and not as a herd if they are to be fed economically. The quantity of milk produced by the cow is an indication of the quantity of feed she must have.

The first use of which the animal puts its food, whether producing milk or not, is to maintain the functions of the body. The feed in excess of this amount is used for producing milk, storing fat, or for growth of the foetus.

May Not Notice Underfeeding

Underfeeding is perhaps more common than overfeeding. The effect of underfeeding may not be noticed at once, as the cow will produce milk for a time by converting the surplus flesh of her body into milk. Hence, if a cow declines in weight while she is producing milk, it is an indication that she is not receiving enough feed On the other hand, the overfed cow may put fat on her body or she may get off feed.

A succulent ration should be maintained during the winter. Such a feed serves to keep the digestive organs in good condition. This succulence may be secured by feeding silage or roots. Silage makes the best succulent feed in this state because it is possible to obtain large yields of corn, cane, or kafir, which makes excellent silage.

Bulk and Nutrients Needed.

The feeds in a ration must be such as to provide a sufficient bulk to satisfy the appetite and feeding capacity of the animal, and to furnish the amount of nutrients needed by the cow. An animal may be fed enough nutrients in the form of grain to perform her work but she may receive too little bulk to be satisfied.

The roughage should form the foundation of the dairy ration. A cow should have all the roughage she can clean up, and the grain ration should be regulated by the amount of milk produced. A cow should be fed one pound of grain to each three pounds of rich milk produced and one pound of grain to four pounds less rich milk.

Ration Must Be Balanced

The three substances which must be considered in making up the ration of the dairy cow are protein, carbohydrates, and fats. These substances are found in all feeds but in varying proportions. The protein, or nitrogenous substance, is the most expensive. It is used by the animal in the production of hair, hoof, hide, horn, blood, and muscle. Alfalfa, clover hay, cottonseed and linseed meal, bran, oats, and gluten feeds contain a high per cent of protein. The carbohydrates and fats produce heat and furnish energy to make the fat that is stored up in the body and in the milk. Corn, kaffir, cane, corn silage, timothy hay, oats, and wheat straw contain a high per cent of carbohydrates.

A balanced ration must contain both protein and carbohydrate foods. Alfalfa and clover furnish protein in form of roughage. In order to balance the ration, it is best to feed a grain rich in carbohydrates. If the roughage consists of cane or kafir, then a grain ration such as bran or oats must furnish the protein. The protein feeds are the most expensive feeds on the market. If alfalfa, cowpeas, and clover can be grown in the locality, it is cheaper to use them in the dairy ration.

Must Follow Nature's Teaching.

Cows must be fed intelligently if the highest and most economical returns are obtained. One of the principal reasons for the low average production of the cow is that she is not properly fed.

Economic feeding resolves itself into the study and execution of the lesson which nature teaches. The cow makes her greatest production in the early summer. The intelligent feeder therefore will strive to maintain similar conditions as nearly as possible throughout the year.

Utah per acre, per man produced more food stuff than any other state during 1917.

THE SILO WILL HELP PRODUCTION

(Continued from page 1)

that silo which will increase the products from your cows, keep your stock in better condition, enable you to save nearly 100 per cent of your crop instead of half, save at least a third of your time in doing the winter feeding, and materally increase your bank account. If you want to appreciate the real merits of a silo, ask a farmer who is using one if he would do without it for more than double its cost.

The value of silage for dairy cows can be summed up as follows:

Silage adds palatableness to the ration.

Silage adds succulency to the ration.

Silage serves to cheapen the ration.

Silage enables the cow to produce milk and butter more economcally.

Silage is more easily handled than corn fodder.

Silage serves as a tonic and conditioner, keeping the digestive tract in good condition.

To summarize: Silage produces beef most economically, is a good feed for dairy cows, for calves and stock cattle, for fattening lambs and breeding ewes, for mules, horses, swine and poultry.

Good ensilage with our alfalfa make a combination that eastern farmers can not produce as cheaply as we can. With better feed at a lower cost, it will stimulate production. More livestock is what we need. The silo will help production and bring a better profit to the farmer.—R. E. Miller.

The Brigadier—Now, Captain Wilson, suppose you found your company cut off from the rest of the battalion, hopelessly outnumbered and surrounded on every side; what would you do? Captain Wilson, scratching his head—By gosh, General, you are a pessimist.

Every Hand in the Land!

Every Hand a Saving Hand
Every Hand a Helping Hand

Lend Your Quarters to Uncle Sam

Every One of Us Must Save Here for Victory "Over There"

EVERY one must lend some money to the Government. And every one can lend some, if only a little. No matter how slim our purse or how small our earnings, each and every one of us can spare a little for our Government if we practice a little thrift.

By investing in WAR SAVINGS STAMPS the person with only a few cents to spare can do his or her share as well and as nobly as the man with a million to invest. Remember, the Government does not ask you to give your money, but to lend it at interest. You make it work not only for those "over there" but also for you here, no matter how much or little it may be.

You may purchase WAR SAVINGS THRIFT STAMPS by paying the small amount of 25 cents at a time. Sixteen Thrift Stamps plus a few cents in cash are exchangeable for a Five Dollar WAR SAVINGS STAMP.

The Five Dollar Stamps cost from $4.14 to $4.23 each, according to the time purchased, and will be redeemed on January 1, 1923, at $5 each.

The Stamps will be sold during March, 1918, at $4.14 each, and the price will increase one cent a month during 1918.

At the average 1918 selling price, WAR SAVINGS STAMPS will yield you on the redemption date four per cent. interest compounded quarterly. In case of necessity they may be redeemed before January 1, 1923, with about three per cent. interest.

The investment is the soundest on earth. The entire wealth and security of the United States is back of them.

WAR SAVINGS STAMPS are as easy to buy as postage stamps. They are sold at post offices, banks or trust companies, many railway stations, stores, factories, agencies and other public places.

LET'S ALL INVEST AND HELP—EVERY HAND IN THE LAND.

National War Savings Committee, Washington

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Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 46 JUNE 15, 1918

WEEDS AND THEIR CONTROL

By George Stewart, Assistant Professor in Agronomy, Utah Agricultural College.

Natural selection has been operating so long that some plants are able to hold their ground against natural competitors. Weeds have survived not only against other plants but also against man, who by cultivation has attached them in new ways and in new places. The efforts to surround crops with conditions favorable to their growth has made the fight against weeds in cultivated ground still more relentless. On the other hand, crop-plants have been unfitted for competition by constant care and protection. Wheat, for example, would probably disappear in a few years, if it were left to take care of itself.

This ever-increasing keenness of competition makes weeds more and more fit to maintain themselves. Various are the methods they have adopted. To overcome them, man first must learn their ways: to find a weak place in their armor is his hope. New tools, new methods of cultivation, and the application of sprays are only attempts to send against a weed an enemy whose methods of attack the weed is not prepared to face. The farmer must know the nature of the weed he is attempting to control, what it can and cannot withstand, and how best to strike into its weakest part.

Occurrence.

No farmers are exempt from weed pests. They occur everywhere; they grew even in Eden. Ever since they have been spreading far and wide by the numerous and ingenious methods that they have transmitted to the next generation, or that they have since acquired in the struggle for existence. So thoroughly has nature done the work that no spot has escaped.

At the doorstep, they creep out from the edge of the stone or out of a crack; along the pathway, they cover all ground not constantly trodden; in waste places, they mar the landscape; in crops, they crowd and struggle for supremacy; and even in the cemetery, they grow from the graves of the dead. It is only the living man with a hoe or a plow that they respect; only from him do they hide their heads, and then, not until he uses sharp edges. Nor do they lack persistency; let him leave a single root, and though they languish for a time, if he does not find that solitary root by which they cling to the soil and to life, they take a fresh hold and before he is aware have tightened their grip until he realizes that he has lost his opportunity of easy conquest.

Kinds of Weeds.

Control methods for weeds are based largely on how long these plants live naturally. Four kinds deserve consideration: (1) annuals, (2) winter annuals, (3) biennials, and (4) perennials.

Annuals germinate in spring, develop normally throughout the summer, and ripen seed before winter. These seeds lay in the soil till the next spring. In general, these are our most common weeds and cause most trouble on account of their general occurrence. Pigweeds are examples.

Winter annuals germinate in the fall and live over winter as a cluster of leaves on the surface of the ground. The roots grow during the winter, because of which they are enable to grow rapidly when spring comes. They are most troublesome in fall-planted grain or on land that is prepared in the fall for early spring planting. Seed usually ripens with or ahead of the grain. Prickly lettuce, sometimes misnamed "milkweed" because of its thick sap, is our worst pest in this class.

Biennials live two years, usually ripening some seed the first autumn, but most of it the second season. These weeds persist along ditch banks or in our less frequently cultivated fields. Sweet clover and field thistle are the best known biennials.

Perennials live more than two years. They persist by means of root crowns or by rootstocks which send up new shoots each spring.

A root crown is an enlarged part of the stem closely connected with a top root. The root crown bears buds from which new shoots grow each spring. It is usually near the surface of the soil, sometimes just above but more frequently just below. This being just below the surface protects the buds of the root crown from freezing. Mallow, or "cheeseweed," and dandelion are famous examples of this class.

More notorious yet, however, is wild morning glory, or bindweed, which has rootstocks. These are underground stems which grow horizontally below the surface. These rootstocks vary in thickness from a sixteenth of an inch to a half-inch. They may be anywhere.

Annuals.

Pigweeds. Of these there are several—some reddish, some whitish, some erect, some flat, and some nearly spherical. They are all annuals and can be handled by two simple processes if vigorously followed.

1. No weeds should be allowed to ripen seed. The easiest way to prevent this is to kill the young weeds just as they start growth. Harrowing or any disturbance is fatal at this period. Later they have to be cut off with a cultivator or a hoe. Not even a few weeds may be allowed to develop seed for they bear anywhere from several hundred to several thousands. It is also well to encourage the germination of any seed which might lay over in the soil till next season. Frequent cultivation and a shallow plowing will help in this respect.

2. Not only must the farmer take care that no weeds ripen seeds, but he must also guard against the introduction of weed seed. Let him watch well the seed he plants. First-class, well-screened seed is always cheapest and safest. Threshers are dangerous, but may be guarded against by watching the first few bushels of grain threshed. If it is weedy it must not stand where there is any danger of its being used for seed. Hay or manure from other farms or from a nearby town may carry weed seeds. Any such manure should be well-rotted before being applied on the land.

Irrigation water is also an agency in introducing weed seed. Wind may also carry winged seed or roll in tumbleweeds. The remedy is both cases is potent: weeds along roadsides, ditch banks, fence lines, and on waste ground should be kept down or at least mowed before seeding. Community action of some sort is necessary to overcome this last difficulty.

Annual Grasses.—Grasses that live one year can be handled in the same way as the pigweeds, except that a little more care is necessary to make sure that all roots are cut, for they have several instead of one as do pigweeds.

Tumbleweeds.—Tumbling mustard and Russian thistle roll over the country driven by winds scattering seed everywhere. They spread so rapidly as to deserve special attention.

Cockle bur, purslave, and many others are also annuals. They need the same treatment as the others.

Winter Annuals.

Prickly lettuce and cheat-grass, or June-grass, are our worst winter annuals. Prickly lettuce grows upright, has milky sap, slightly toothed leaves that are from one to eight inches long. The head is something like a small thisle, the flower is yellow, and the seed winged. It is common in grain fields.

Pepper grass and shepherd's purse also belong to the winter annuals. They are troublesome in hayfields and pastures.

Cheat-grass throws out several reddish, hair-covered leaves in the late fall. Next spring it sends up a hairy top growth, the size of which in proportion to the moisture available. It turns white on ripening when the seed is barbed. It infests waste alfalfa fields, fence lines, roadsides, and range or sagebrush lands.

These weeds are controlled by the same general methods as are the annuals. In addition, however, late fall and early spring cultivations must to practiced vigorously. Clean seed bed for planting, clean seed, and later spike-tooth harrowing are the best control methods. Alfalfa patches should be vigorously springtoothed and not allowed to get too old.

Biennials.

Sweet clover, barley-grass (commonly called foxtail), burdock, and the common thistles are our worst biennial weeds.

Sweet clover is well-known. It is most injurious in irrigated grain fields. Barley-grass grows in bunches and develops bushy, whitish, rough-bearded heads. It is worst in old alfalfa fields, or in wet pasture lands.

Burdock has large rhubarb-like leaves and grows bur balls about half an inch in diameter inside of which are small black seeds. The burs stick in animals and the seeds drop out as the animals move about. Burdock and thistles infest only waste land, or neglected pastures. Immediate and thorough grubbing is fatal to these weeds.

Sweet clover should be cut down before seeding and plowed. Vigorous harrowing and frequent clipping are necessary to control barley-grass (foxtail).

On no account should these weeds be allowed to seed.

Perennials.

As already pointed out perennial weeds fall into two classes—those having root crowns and those having rootstocks. Control methods differ widely—more widely in fact than do they for annual weeds and for those perennials having root crowns. The rootstock makes that class many times more difficult to eradicate.

Perennials with Root Crowns.

Several bad weeds occur in this group but where seeding is prevented they should soon cease to trouble because they have no other means of multiplying. By virtue of food stored in the large root and root crown, they grow rapidly and produce many seeds. They should be cut off four to eight inches beneath the surface early in the season as soon as they begin growth. Most of the worst weeds in this group develop a matted sort of top growth that makes the tops difficult to cut because of their being so close to the ground. It is nearly as easy to cut below the root crowns as it is to cut back the top growth to prevent seeding. This very quality, however, means that seed is very likely to be matured unless great care is exercised to cut off the branches or to cut off the root below the root crown.

These weeds are usually worst on waste land, in meadows, pastures, alfalfa fields, in old orchards, or along fence lines, ditch banks, and walks where the plow is not used. Plowing each year or twice each year usually controls this kind of weed. The plowshare cuts off the root crown. Where land is infested it is wise to plow at least fall and spring to grub or hoe out the remaining weeds after the desired crop is planted.

Specific Weeds.

Mallow, or 'cheseweed," grows in a mat. It has rounded, scalloped leaves, a whitish to pinkish flower, and bears many seeds in a flattened dish or "cheese." It ripens many seeds that are easily spread by irrigation water or in manure.

Dandelion.—Well-known to all, it spreads its seed both by wind and water. It is common in any sodded area or spot not frequnetly plowed. It crowds out alfalfa and lawns.

Docks.—Several docks occur usually in wet spots, being nuisances in wet pasture lands. They have broad leaves, six to twelve inches long, and bear a cluster of reddish brown seed that extends all over a branched top. Drainage as well as cultivation assists in their eradication.

Lupines.—Lupines have heavy, fibrous root crowns. Their leafy top growth faintly resembles peas. They have pea-shaped flowers of any shade of white, blue, purple, or yellow. They

(Continued on page 10)

SUGAR BEETS

San Pete County, Utah.
Utah Farmer:

This spring I used the harrow on my beet field when the plants were still small. It was the first time that I ever had the courage to harrow small beets because I was afraid of tearing out and destroying the stand but the weeds were getting such a start and hand labor is so scarce that I tried it out anyhow. The weeds seemed to grow so much faster than the beets that I felt tempted to tear out the beets and replant, but I am now glad that I did not. The harrowing did a lot of good and only a little real damage to the crop. My soil is a mill loam and not very hard to work. I just wondered if many beet growers had tried harrowing the small beets. I did not weight the harrow.

P. C. J.

We were recently in two fields of beets that were very greatly helped by harrowing. If the soil and other conditions are wrong, very much harm can be done to a stand of beets by harrowing but if care is used in adjusting the harrow, in most instances, it will help. It needs to be a light harrow and the teeth should be slanted back. Where a light crust is forming, the harrow will stir the soil sufficiently to prevent the cracks opening which cause the loss of moisture.

This season, in some fields, the weeds started out at an alarming rate. The weed seems to have the ability to grow, even if the soil stays cold. Most weeds spread their roots quickly and gain headway before beets and other crops get started. The harrow, when judiciously used will aid in holding the weeds in check.

On some of your soils, both the harrow and the roller are used to splendid advantage but they must be used with discretion. When in doubt, use the culivator. Some of the best beet growers are cultivating their beets twice and even three times before the beets are thinned. It is true that when the beets are so small, careful driving is necessary. A careful count in one field, last week, showed a serious loss through careless cultivating. It was only a two-row cultivator and it may not have appeared to the man who operated the cultivator that he was cutting so many dollars out of his pocketbook. If some one had told him that he had a hole in his pocket and that he lost a silver dollar at the end of every fourth row, he would have been scared stiff and would have patched his pockets before driving another rod.

In checking over his field, it was concluded that he lost about 50 pounds of beets in each forty rod row. For each round trip in cultivating, which meant four rows of beets, he had lost 200 pounds of beets and at $10 per ton, this would mean a loss to him amounting to $1.00 per round trip.

That is rather expensive indifference. We did not meet the man or see the cultivator that he was using but it is likely that it would have taken him only about as long to properly adjust the cultivator and it would have taken him to patch a pocket in his trousers that might cause the leak. Sometimes, there is but little required in these adjustments. The first two acres in the field was well done and almost no beets were cut out with the cultivator but it appeared, in studying the results, that one or two nuts work-loose and a hurried adjustment or no adjustment at all was made. There was only about six acres in the field.

It is often the case that the man with a comparatively small acreage will be less exacting about his cultivator than is the man with a larger acreage, there seems to be a temptation to use the cultivaor set in about the same way that the neighbor used it and not make a change, for on many small acreages, one cultivator is used by several neighbors whereas, the grower with a large acreage understands the importance of having his own cultivator and have it equipped with the shovels and knives that are best suited to his soil.

We have occasionally seen damage that resulted from the use of the harrow on small beets and we have also found a great deal of damage that was done by careless cultivating; nevertheless, we have seen very much more damage done to beet fields because the grower did too little cultivatiing or stirring the soil and left too much for hand work. This is the year that horse labor must be substituted in evey possible way for human labor. It is also the very time when a little "head work" and skill in adjusting tools will count for more dollars in return for the effort expended than at any previous time.

Yes, you probably did the wise thing in using the harrow and the good that was accomplished much more than compensated for the relatively small number of beets that were injured. The irregular stand this spring, on many fields, caused some of the growers to feel discouraged at times but the last few days has shown a wonderful improvement. In July, many of these fields, if properly handled, will show probably 80 per cent of a full stand and that may mean as much as 90 per cent of a full tonnage yield.

FERTILIZER

By Mark Austin, General Agricultural Supt., Utah-Idaho Sugar Company.

No doubt most of our growers have read with interest the article in the Utah Farmer under date June 1st, by Messrs. Timothy and Bedford of Greeley, Colorado, on the subject of beet top silage. The information given certainly is very encouraging to the beet growers. It shows that the beet tops when siloed are just as profitable as the beets, if properly fed to livestock.

The great question which has confronted our farmers heretofore is fertilizer; it will be solved by the beet top silage. We hope all of our growers will save this very important feed by the simple methods heretofore suggested and feed as many stock on the farm as possible, so as to get the manure to build up the fertility of the soil, and, in this way very materially increase the tonnage of beets. I think there is nothing that has come to the attention of the beet growers of the West of greater importance and it certainly should have our careful attention.

If you do not have sufficient hay upon your farm to feed a car or more of steers no doubt you will be able to purchase it from farmers who are located outside of the extensive beet growing sections. It only takes a small quantity of hay to feed with the silage so the hauling of the hay a few miles will not be a serious matter, because the farmers and teams are not very busy in the winter. I know of some farmers in Idaho, who, last year, and the year before that, hauled hay to feed to beef and mutton eight to ten miles, so as to use the by-poduct of the sugar beet and get the fertilizer for their farms.

I would like to again call the attention of our farmers to the advisability of taking some of the alfalfa fields full of dandelions and other noxious weeds and plowing them under, thus giving the soil some green fertilizer. If done at once, they can be planted to good advantage to corn or potatoes. If this is properly done the land would be in elegant shape for beets for the next four years. Even the second crop of alfalfa, in the State of Utah, could be plowed under and then planted to corn not later than the 20th of July. Of course it would be planted too late to develop corn, but a good crop of fodder for silage could be raised, or it could be fed green to the stock, just as the farmer may desire; this would also prepare the land in good shape for beets the following four years. A number of our growers throughout the various states where we operate plowed under green alfalfa last year and where the work was properly done and the beets properly planted and cared for, the indications are that they will get an excellent crop. The method outlined is the best way to kill the alfalfa and as there are thousands of acres that needs plowing up and as the soil needs the fertilizer this matter should have the careful attention of the farmer.

June 10th, 1918

The first hoeing of sugar beets is more important this season than common.

In some districts, because of dry spots in many fields, the germination was iregular and now, since the rains, the plants have come through and therefor, additional thinning must be done and the best time to do it is while hoeing the first time.

In many fields, cultivating has been delayed considerably following the thinning. The owner felt the necessity of being with the thinners every hour of the day and that is always an important time for competent supervision. Only a few fields have suffered because of lack of prompt cultivation following thinning and serious losses can easily occur if the thinning operation is delayed unduly or done in a slipshod fashion. Some of the growers have gotten out early in the day with the cultivator and then helped with the thinners when they arrive, starting the cultivator again later in the day and in this way, some of the larger acreages have been kept thinned and cultivated in good order.

Where the cultivator is used by different growers, this plan of cultivating in the early morning and in the late afternoon can not always be worked out successfully because it sometimes takes more time to go for the cultivator than to do the cultivating. As the beets get larger before the thinners get to them, there is an even greater need to have the cultivator follow the thinning promptly and thus stir the soil and bring fresh earth around the more or less exposed plants.

Some of the fields that promised a poor stand of beets early, are now showing from 90 per cent to 95 per cent, and with a little extra care in the first hoeing, in thinning out the plants were germination was delayed, there will be practically a full stand. Remember that a weed will now draw a great deal of moisture and soil fertility out of the soil that the young beet plant needs. The root system of the weeds spread quickly and they rob the growing beet crop at a critical time. Therefore, it is important to do the first hoeing with but little delay.

As the season advances, the beet foliage shades the soil and the weeds do not have as favorable chance to make headway. Where fields have been thinned in the right way, promptly when ready to be thinned and then cultivated, the crop is coming on splendidly. A large part of the Utah acreage is showing fully one month ahead of the crop last year.

Every grower should realize that every time that he hitches to the beet cultivator this season, he is hitching up important war artillery. It is entirely possible for every grower to cultivate another ton of beets per acre into his crop. That extra ton of beets will bring an additional $10 per acre to the grower and it will also mean that enough additional sugar will be manufactured to sustain three or four soldiers for a whole year, on full sugar rations.

Hoover says "don't waste." So feed the pigs the small potatoes, turnips, carrots, beets, etc. They are better cooked up and fed warm.

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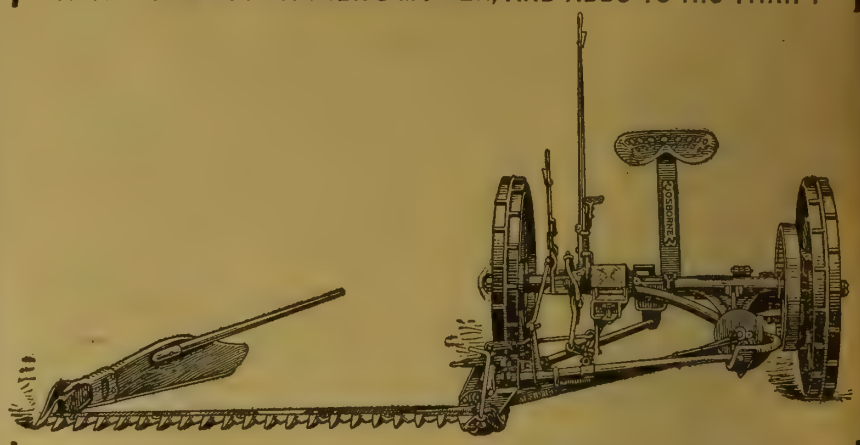

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Cheese Making In the Home With Five Gallons of Milk

Dr. W. E. Carroll, U. A. C.

The best grade of cheese cannot be made from perfectly sweet milk. The degree of acid necessary, however, is not great enough to be detected by the taste. Probably the method of testing for acid best adapted to use in the home is the following modification of the Monrad rennet-test:

Test For Ripeness.—The first step in this test is to prepare a dilute solution of rennet. To do this, carefully measure nine teaspoonfuls of water into a cup or glass. Add to this one teaspoonful of the original rennet extract, and stir thoroughly with the same spoon. Next measure out into a small basin (1 pint thirty two teaspoonfuls of the milk to be tested. The milk must be at the temperature at which the rennet is added in the cheese making process (84 degrees to 86 degrees F.). To this measured sample of milk at the desired temperature add one teaspoonful of the diluted rennet solution as prepared above. Mix thoroughly and quickly, using the thermometer as a stirrer. By means of the second-hand of a watch the exact time required for the milk to coagulate after the rennet solution is added is determined. The exact point of coagualtion can be more easily seen by scattering a few black specks (as the charred end of a partly burned match or a slight shake of pepper) on the surface of the milk. With the thermometer gently start the surface into a circular motion around the dish. The black particles stop the instant the milk coagulates. Care must be taken to keep the temperature of the milk as near 85 degrees F. all during the test as is possible. Under ordinary conditions the milk is sufficiently ripe ready for the addition of the rennet when the sample tested as above coagulates in from 30-60 seconds.

To derive the full benefit from this test, all measurements must be very accurately made and other directions followed carefully.

Milk for Cheese Making.—Only the best whole milk should be used in making cheese. If night's milk is to be used, entirely or in part, great care must be taken that the milk is drawn under the most sanitary conditions. All utensils with which it comes in contact should be carefully sterilized and the milk cooled down immediately after it is drawn. If it is storred during the cooling, less cream will rise and it will therefore be in better condition for cheese making. It should be kept coöl all night and free from dust, otherwise it will be too ripe for good results.

If some morning's milk is used it should be cooled to the same temperature as the night's milk before the two are mixed.

Period 1. Setting b.

Thoroughly mix the milk and measure the required five gallons into preferably, some rectangular or square vessel. Heat gradually to 84 degrees to 86 degrees F. and test for ripenness as described above. If not ripe enough, add a pint of clean sour milk and hold at this temperature till the test shows sufficient acid has developed.

Where this treatment fails to ripen the milk to the proper acidity without holding, a pint or more of clean sour milk may be added before the warming begins. After a few batches have been made, the amount to add can be gauged with considerable accuracy.

Adding Color.—When coloring is used it is best added just before the rennet ,being diluted in 10-20 parts of water and mixed thoroughy through the milk.

The amount of color to add depends upon the natural color of the milk and the depth of color desired in the cheese. In the spring, little if any artificial color will be necessary. The amount will vary from none to 0.1 of an ounce.

Adding Rennet.—When the milk is ripe enough (as shown by the test) and at the proper temperature (84 degrees to 86 degrees F.) the rennet extract is added. Dilute 1-6 of an ounce of rennet extract in forty times its volume of pure cold water. Thoroughly stir the milk and then add the diluted rennet by gradually pouring it in various parts of the milk. Stir briskly to mix the extract evenly throughout the milk. All motion of the milk should cease before it begins to coagultae. The vessel should be covered to prevent cooling of the surface. If all the conditions are proper the milk will begin to coagulate in from 10 to 15 minutes, and will be ready for the next step in from 30 to 35 minutes.

Period II.—Cutting.

When to Cut Curd.—Either of the following tests may be used to determine when the curd is ready to cut.

(1) Gently insert the finger obliquely into the curd and slowly move it forward. If the curd breaks with a clean fracture over the finger without leaving small bits of curd, and if the whey in the break is clear and not milky the curd is ready for the knife.

(2) With gentle pressure from the flat of the hand press the curd away from the side of the vessel. As soon as it will separate in a clean way, leaving no particles adhering to the side of the vessel, it is ready to cut.

(3) If watched carefully the following is probably as satisfactory a method as any "Two and one-half times the period from adding rennet till the first thickening appears gives the time of cutting."

Method of Cutting Curd.—The curd should be cut in as nearly uniform cubes as possible. This can best be done by using regular curd knives. These consist of a set of prependicular blades about 3-8 of an inch apart, long enough to reach the bottom of the vot, and another set of horizontal blades also 3-8 of an inch apart. The horizontal blades are first run lengthwise of the vessel, then vertical knives are run lengthwise and across. This, is done carefully, results in cubes of curd about 3-8 of an inch in size.

If such knives are not available, the vertical cutting can be done with a butcher knife and if care is taken these strips of curd can be cut or broken into uniform cubes. This is necessary so that the whey will be uniformly expelled. Care must also be

(Continued on page 14)

"Beneficial Use" of Irrigation Water and Public Records

By O. W. Israelsen of the Utah Experiment Station.

That "Beneficial Use" is the "basis, the measure and the limit" of individual rights to the use of water in irrigation is a well established doctrine in Utah. Repeated declarations by the Courts, and also by the State Legislature furnish ample evidence to support the above assertion. In consideration of these facts, it is surprising to learn that the public has no record of the actual amounts of water used in many of the sections where irrigation was begun in the early days. Very recently the writer had occasion to visit two water commissioners, who have during the low water season of the past 20 years divided the waste of a certain stream. During this entire time the public, as employer of the water commissioners has never asked for a written report of the amounts of water used by the various canal companies, and consequently no reports have been made and no information is to be had from the public records.

Under such conditions who is to say that all of the water has been beneficially used and none wasted?

It might be thought by some that the court decrees have been followed and that consequently, records of the actual amounts of water used are unnecessary. A little familiraity with the generosity, or possibly the lack of information, which accompanied the making of many of our early court decrees will soon show the utter impractibility of water commissioners following them today.

The following case is a typical one: According to one water commissioner a certain decree calls for 46 cubic feet per second for the irrigation of 200 acres. In an irrigation season of four months this amount of water would cover the 200-acre tract to a depth of 55 feet. This is just 18 times the average amount of water used by the farmers on our government reclamation projects during the last 6 years. It is moreover, to be sure, more than can be used, but as clearly pointed out by the water commissioner refered to; while such decrees cannot be followed they can make a great deal of trouble for the water commissioner.

Such a condition is of advantage to neither the individual water user nor the public.

If "Beneficial Use" is to be seriously considered the "basis the measure, and the limit" of all rights to the use of water, the public must not only insist that its representatives keep records of the actual amounts of water used by the various canal companies, but it must also know how much land is irrigated with the respective amounts of water each year.

Irrigation and Cultivation of Sugar Beets

By Mark Austin, General Agricultural Supt., Utah-Idaho Sugar Company.

The unusual hot and dry weather we have had thus far, this season, with the exception of a few localities where a fair supply of rain has fell, makes it quite necessary to watch the beets and soil very closely; especially is this so on the heavily manured lands and those recently broken from alfalfa and planted to beets. The farmers should see to it that the soil is not allowed to become too dry, or the beets will be stunted; they are then subject to all kinds of disease and insects. Even though the beets may be very small, if the soil is dry water should be applied at once so they will not suffer. This can be done by furrowing out every other row carefully, exercising care not to cover the beets with dirt. The water should then be turned into the furrows, sufficient to give the beets a light irrigation; care should be exercised so as not to flood them any more than can be avoided. You should have sufficient cross ditches so the water will not run too far in the row. By turning the water in every other row, should there be a little excess moisture and the weather turn cool, the soil between the irrigation furrows will absorb it so the plants will not be injured.

By keeping the beet fields free from weeds and plenty of cultivation will help retain the moisture, while the beets are small. Until the foliage becomes so large that further cultivation would be injurious to the beets, they certainly should be cultivated after each irrigation, to keep the soil in first-class condition. It will not be necessary to irrigate so often if the soil is kept thoroughly cultivated, as long as the foliage will permit.

It is hoped that this matter will have the careful attention of our growers. There was considerable loss last year on some fields by reason of the farmers being too late with their first irrigation; also some did not irrigate quite late enough in the latter part of the season and their crop was very materially reduced in tonnage. Beets should never be allowed to suffer for water any time during the growing season; the soil should be kept moist and in first-class condition. Of course the beets should not be watered while there is sufficient moisture in the ground, nor should they be over irrigated, but as stated above they should be kept in a growing condition at all times to get the best possible results.

The main object I have in calling this to the attention of our farmers now is, not that all beets need water at the present time, but with a view of getting our growers who have been a little careless in the matter to make their preparations for irrigation sufficiently early to properly take care of their crop.

June 10th, 1918.

DAIRYING

WAR TIME DAIRYING

J. H. Franksen, University of Nebraska

Article IV.

Selecting The Dairy Cow.

The essential points of a good dairy cow are indications of constitutional vigor, food capacity, development of the nervous system, good blood circulation, and the ability to produce milk abundantly.

1. **Constitution.** Well-distended nostrils and good heart girth due to breadth and depth of chest are the best indications of that quality of health and vigor commonly referred to as constitution.

2. **Food Capacity.** Great length from shoulder to hip bones, together with great width and depth of barrel indicates well-developed digestive organs, which enable the cow to consume and digest large quantities of food.

3. **Nervous System, or Nervous Temperament.** A good dairy cow is active and intelligent. Large, bright eyes, set rather far apart, a broad well-dished face, and a spare and angular form are good indications of a nervous temperament.

4. **Blood Circulation.** A good circulatory system is necessary to carry the digested food from the abdominal region to the udder. The milk veins should be large, tortuous and branching, entering as many large wells as possible.

5. **Producing Ability.** The digested food is converted into milk only after reaching the udder. A large udder that is soft and pliable, but not flabby when empty, and well developed forward and attached rather high behind, with teats of medium size and squarely placed are the best indications of the cow's producing ability.

The Department of Dairy Husbandry is always ready to assist farmers in the selection of good dairy cows.

Five Essentials In Dairy Herd Management.

1. The sire is more than half the herd. Be sure that the sire heading your dairy herd will transmit dairy characteristics.

2. Weed out the unprofitable cows by use of the Babcock test and the scales.

3. Raise and keep all heifer calves from the best cows.

4. Winter dairy as much as possible under your conditions. It gives you more milk, better prices, and at less cost.

5. Provide comfortable quarters for milch cows.

Help For Labor Problems.

There is no denying that the steadily growing list of drafted man is making the labor problem more and more serious. However, the milk machine and other labor saving devices will do much to reduce the amount of man labor required as well as reduce the drudgery of the work. Men who are now using the milking machine are convinced that it has now been so perfected as to be practical,, when the dairy herd is of such size that time which may be profitably employed otherwise is saved through machine milking and where intelligent care is used in its operation. Fortunately, while dairy work is somewhat confining, it is not hard work. In Europe a large per cent of the work has, in the past, been done by women. Under present emergencies when women and children may be called upon to do much of man's work, dairying presents a field for service that can hardly be equalled in any other line of agriculture.

It is true that abnormal conditions, the uncertainty of war, the high prices of feeds, the scarcity of good labor, and the fact that many dairymen are temporarily not getting an adequate price for their product is severely testing their courage as it has not been tested before. Admitting that the present conditions present many problems the writer, nevertheless, feels that, from conferences with food administrators, it is fairly safe to predict that such price adjustments will soon be made as will give the dairyman more fair returns for his labors. The writer feels strongly that these prices must be sufficiently renumerative to stimulate the dairyman to larger production.

Consumer Responsible.

There should be nothing but contempt for the sensational politican who maliciously, or otherwise, attempts to misrepresent matters pertaining to the milk situation in the hope that he may temporarily curry such favor as may carry him to some much desired public office. Neither can we sympathize too strongly with cerain consumers who, not having a full knowledge of the food value of milk and milk products, have allowed themselves to become the tool through which housewives have been urged to boycott dairy products. Undoubtedly they do not realize that milk in one form or another is practically a necessity for the growing child. Without its use he may suffer in a way that can not be overcome in later years.

It is also certain that the thoughtful consumer does not sympathize with the boycotting system even though it might create a temporary relief, for he realizes by this time that everything that has gone into the production of milk has raised in price in much more striking way than has been the case with milk itself.

The following figures indicate the increase in prices of feed stuffs for the past three and one-half years:

	1914	1917
Corn	$ .60 bu.	$ 1.26 bu.
Alfalfa	10.00 ton	30.00 ton
Oats	.35 bu.	.40½ bu.
Bran	20.00 ton	40.00 ton
Cottonseed meal	30.00 ton	61.00 ton
Oil meal	29.00 ton	61.00 ton

Beside these figures, labor in this time has increased at least 30%. Building material has increased approximately 60%. Milk, on an average, has increased in price for the same period approximately 40%. Moreover, the high price of beef is constantly tempting the dairyman to sell his animals for beef purposes. A careful analysis of the whole situation will, without doubt, convince any consumer than though he might succeed in arbitrarily forcing a lower price of milk it would soon result in such decreased production as would eventually mean a higher price than would have been the case without such interference.

Legal posecution of dairymen or sensational boycotts can ultimately have but one result—that of driving the too frequently overworked dairymen into other fields of agriculture, resulting in a short supply and a still higher price. A full realization of the favorable comparison of dairy products with other food articles together with the definite knowledge of the increased cost of producing dairy products will convince the consumer of the justness of the dairyman's demands for such increase in price as will give him reasonable returns for his dairy investment and stimulate him to further production.

Looking beyond the economic and financial considerations it must be admitted that no laborer in the field of agriculture is rendering a more patriotic service than the dairyman in adding to the supply of a much needed food products. He feels partially repaid for his efforts, I am sure, in the thought that he is doing his share to help win the war and lesson the sufferings of his fellowman.

Don't forget to keep the pigs' quarters clean. Lime sprinkled freely after cleaning out will help dry up and disinfect the pens.

A TEST FOR FRICTION

Rub your finger over the surface of an axle and feel how rough it is. It is covered with tiny seams and pores which cause friction. Use

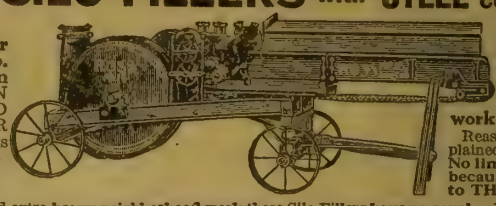
MICA Axle Grease

on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Pueblo Salt Lake City Cheyenne
Butte Albuquerque Boise

ROSS SILO FILLERS with STEEL BLOWER AND CUTTING CYLINDER

The Ross Cylinder type Silo Fillers No. 18 and 20 with 6 Fan "DISTRIBUTION LIFT" LOW SPEED "STEEL" BLOWER are The Silo Fillers that operate successfully with 10-20 and 12-24 Tractors.



No Silo too high or requirements so great but what the ROSS Silo Filler will do the work with ease.

Reasons for this fully explained in ROSS Catalog. No limit to our guarantee because there is no limit to THE ROSS.

For jobbing work and extra heavy neighborhood work these Silo Fillers have no equal. Individual Guarantee with every machine. Our proposition is especially interesting to Early Buyers.

THE E. W. ROSS COMPANY Box 144 SPRINGFIELD, OHIO 68 Years' Experience
Machinery and Repairs carried

Machinery and Repairs carried with Landes & Co., Salt Lake City, Utah.

OUR SERVICE
And What It Means to You

YOU APPRECIATE ECONOMY YOU GET IT HERE

The Only Real Economy—Economy that "Proves OUT"

There are two kinds of economy in buying farm implements.

One is seeming economy; the other is real economy.

One looks mainly to first cost; the other looks mainly to final results.

One makes you think you have prictised buying economy when you pay the first cost of an implement; the other makes you know you practised buying economy when you count the profits that the use of an implement has paid you.

One is usually false economy; the other is always the kind of economy that pays.

We offer you the real economy in buying—the kind that is safe—the kind that pays.

The implements we sell carry a trade-mark that is firmly established, wherever farm implements are used, as an assurance of special quality. Their general use is due alone to the fact that farmers everywhere find real economy in using them. Their success is based entirely on the better results they give in actual use.

Our service puts you in the closest possible touch with these better implements. We keep a stock of them right here close to your farm where you can investigate each implement thoroughly before you buy—where you can get what you want when you want it.

You don't take a chance when you take a buying trip to our store.

You take the straight road to real implement economy.

Come in and see for yourself.

Consolidated Wagon & Machine Co.
UTAH IDAHO NEVADA WYOMING

PROPER CARE OF THE COW

C. L. Smith.

Only those who have kept in close touch with the farmer during the past few years can realize the great changes that have taken place in his viewpoint of life, and in the conditions under which he conducts his business.

Until the farmer began to seriously consider, he did not fully appreciate the fact that brains are a bigger factor in successful farming than brawn. The good book told him that it was by the sweat of his brow that he must earn his bread, and he had no intention of cheating.

Nationally, the dairy cow has been the greatest single factor in the uplift of the farmer. The horse is a machine that will develop the needed power for labor but the cow is a small factory that turns raw materials into a finished, marketable product. How to keep this factory 100 per cent efficient is a result for which all good farmers are striving.

Until a few years ago a cow was a cow. If she produced sufficient milk she was a good cow and if for any reason she failed to produce a sufficient quantity, the butcher was called into consultation. The breed of the animal was given scant consideration and proper feeding but little more.

Often a cow that was really a beef animal was kept in the herd simply because she produced a sufficient quantity of milk—no attention being paid to the quality. In other words, the owner was trying to make the machine of a carpet mill turn out fine wool garments—and he failed to realize the difference in the product.

The average farmer or dairyman of today knows the difference between a milk cow and a beef cow. He knows something about feeds and feeding and he has learned the mistake of letting the boy bring in the cows on the run from the pasture. But he is only beginning to learn what real management of the cow means.

A well bred dairy cow is the most sensitive animal on the farm and is the most responsive to careful, kind treatment. Every bit of energy that she uses in trying to make herself comfortable is energy that she would otherwise devote to better milk production. Often a good cow is made unprofitable through careless treatment, and often an unprofitable cow can be made profitable under improved conditions.

Nine out of ten dairy herds would produce 15 to 35 per cent more milk if they could be transferred to comfortable, modern equipped barns. This seems to be a strong statement but it is conservative.

A cow can withhold her milk, so the first essential is to see that she is comfortable while she is being milked. If she is in pain or uncomfortable, as she must be if she is held in a rigid stanchion, she has the same opportunity to devote herself to giving down milk as the man has for concentration on desk work while he is suffering with a headache. See that the method of tying the cow is such that it permits her just as much comfort as possible. A flexible hung tubular steel or steel wood-lined stanchion is the method.

While individual requirements must guide in the construction of a barn, the same general principles are essential. The building should be so arranged that every foot of space is there for a pupose. A barn expert plans a barn with the same care that an architect gives to the arrangement of an office building.

Have the interior of the barn of steel and concrete insofar as possible. Steel and concrete costs little, if any, more than wood, and is easier to keep in a sanitary condition. By insulating the concrete floor from the outside walls it is no more uncomfortable to the cows than wood, besides bedding is always kept in the stalls on which the cows stand or lie. There should be a gutter behind the platform on which the cows stand so the barn can easily be kept clean.

The equipment of the barn should be of the most simple type. Do not have a single piece of material about the stalls that can be dispensed with. Avoid attachments, movable parts and other devices that devise nothing but trouble and a little higher cost. Have no cracks or crevices to catch dirt. Many a disease germ, the proud father of a large family, had his origin in a secluded nook in a cow stall. Have no sharp corners on which the cow can injure herself.

Steel pens should be provided for bull, cows, and calves. Wood pens are too dark, gloomy and unsanitary.

A dairyman of the old school when told of what could be accomplished by giving his cows better treatment sarcastically remarked:

"I reckon you think that I ought to lift my hat every time I come into the barn—maybe I should send my cows roses and bonbons, too."

In expressing his contempt the old gentleman really used the words that strike the keynote of successful dairying. The cows should be treated as if every one was a lady. The herdsman with a bad temper and a loud voice should be put in charge of the mules.

If you own a dairy that is of the old type, you can increase your net profits by a big percentage by modernizing your barn, and employing humane attendants.

Litter carrier to convey manure from behind the salls to the spreader are a necessity on a well managed farm. A litter carrier enables a man to clean out the barn in about half the time it would take to do the work with a wheelbarrow. The work is not only made easier, but is made less disagreeable and the help will take more pride in the cleanliness of the barn.

The government estimates that $100 worth of fertilizing value is annually lost on the average farm. Twenty cows will produce about $600 worth of manure each year. Unless provision is made to handle this manure in a way that will save the liquid, the value will be only about $200. The most economical method of handling the manure is to use a litter carrier and convey the manure direct to a spreader and then to the field, or to provide a covered manure pit having a concrete bottom for manure storage.

When the litter carrier is installed arrangements should be made for a feed carrier. A feed carrier greatly reduces labor and saves feed that would otherwise be wasted through many handlings.

One of the most important essentials in dairy barn construction is the ventilation arrangement. See that the cows have plenty of pure, fresh air during the year.

One of the most important essentials in dairy barn construction is the ventilation arrangement. See that the cows have plenty of pure, fresh air during the year.

In the spring when the grass is young and tender, the air warm and balmy, and the cow is happy in the meadow—that is the time that the cow is most productive.

Give the cow pasture-comfort 365 days in the year and you will have a cow that is 100 per cent efficient. Pasture-comfort during the entire year can be given only in a modern barn with modern equipment.

HOW TO OPERATE A BABCOCK TESTER

Here is a summary of the practice of operating a Babcock tester as recommended by the Wisconsin Experiment Station.

For ordinary farm work the best method of securing samples is to get a sufficient quantity of 2 or 4 ounce sample bottles (one for each cow) and a small sampling dipper holding, say, one ounce. On the day selected for testing, the milk from each cow is weighed as usual and then stirred well. While the milk is still in motion the sampling dipper is filled and the contents transferred to a bottle, which is labeled with the cow's number and close tightly. These samples are then set away in a cool place where they will not sour and at the next milking the procedure is repeated, so that each bottle contains samples of the same amount of morning and evening milk. When ready for testing the milk in the sample bottle should be tn roughly mixed, the narrow tip of the pipette inserted, and the air sucked out until the milk rises in the pipette above the mark on the neck. Quickly place the finger over the upper end of the pipette, and by changing the pressure on the end of the tube let the milk run down slowly and stop it exactly at the mark.

Place the tip of the pipette in the top of a test bottle, held in an inclined position, and the milk will run down one side of the neck of the bottle without danger of spilling. The mark on the pipette indicates 17.6 c.c., 17.5 c.c. or (18 grams) of milk have been used, one-tenth remaining on the sides of the pipette. The milk in the test bottle should not be warmer than 60 to 70 degrees Fahrenheit just before adding the acid.

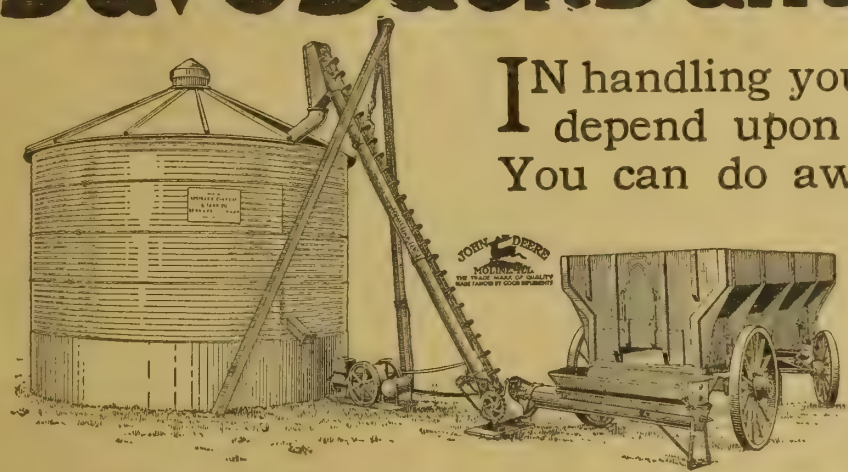
Sulphuric acid (specific gravity 1.82) for the Babcock test can usually be obtained from drug stores or dairy supply houses. The acid is measured in the little acid cylinder, never with the piette, and when filled to the mark indicating 17.5 c.c. it is emptied into the test bottle containing the milk in much the same manner as was the milk. Care should be exercised in handling the acid so as not to get it on the hands or clothes. It should be kept tightly stoppered and the acid should always be added to the milk or water, never add milk or water to strong acid.

The sulphuric acid and the milk should be mixed by holding the bottle by the neck and shaking it in a circle, care being exercised to keep the liquid out of the neck of the bottle. As the shaking continues the mixture turns to a uniform brown color and becomes quite hot. Write the number of the sample with a common black lead pencil on the roughened spot on the side of the test bottle.

Where there is much testing to be done it is better to first measure all the milk samples into the test bottles, labeling each. Shake each bottle immediately after adding acid and whirl the whole set while all are hot. If the bottles become cold before whirling, they should be warmed again by

(Continued on page 13)

Save Sacks and Backs



IN handling your grain crop, don't depend upon expensive sacks. You can do away with this big yearly expense item for all time to come. Make the change now. Handle your grain in bulk with a

JOHN DEERE TUBULAR STEEL ELEVATOR

The saving you can effect in sacks, time and labor, will soon pay for this equipment. The John Deere Elevator is not a temporary means of meeting the present shortage of sacks—it is permanent equipment that will continue to save you money for years to come.

Illustrating the Raising Receiving Hopper

Elevator in position for elevating from the tank into the wagon

Ease of Operation—Low Operating Cost—Years of Satisfactory Service Absolutely Assured

It handles all small grains—wheat, oats, rye, barley, shelled corn, flax, rice. It has big capacity—it elevates 15 to 20 bushels per minute—handles the biggest load in six to ten minutes time.

It elevates from the wagon into tanks, granaries or cars. It elevates from tanks or storage bins into wagons. Operated by a team of horses or 2½ H. P. gas engine or larger.

The hopper can be folded up out of the way when the load is driven up. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed—you can quickly adapt the capacity of the elevator to the power you apply.

Built of steel almost entirely, it will not warp or decay. The elevator proper is made of $\frac{3}{16}$ in. steel well-casing, 6½ in. in diameter. It will never wear out. Portable outfit furnished for large ranches where quick transportation is required.

Because of the many years it will serve you and its extremely low maintenance cost, the John Deere Tubular Pony Elevator is decidely the most economical elevator to purchase. It is a real solution of your grain handling problem. Buy now, while your dealer is in position to supply your needs. Save money by getting the best—the John Deere. Elevators carried in stock by John Deere Houses at Portland, Spokane, Seattle, Boise and San Francisco.

Write for Free Package TE 230

And get literature fully illustrating and describing this labor-saving, money-making elevator, also big 156 page catalog "Better farm implements and how to use them"—a real farm text book worth dollars. Both free. Write today.

JOHN DEERE, MOLINE, ILLINOIS

JOHN DEERE PLOWS — Make Better Seed Beds

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

Entered as second class matter in the postoffice at Lehi, Utah.
Published every Saturday by the
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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

Make another planting of corn in the garden for table use, another sowing of peas and beans.

"There is no excellency with out labor," there will be plenty of labor for the man who is running a farm this year. The result will be good crops, good returns and a big help to the nation in feeding the world.

A ruling recently made by the Federal Reserve bank should be of some help to our local banks and to the farmers. Instructions have been issued authorizing all Federal Reserve banks to rediscount farm tractor paper when presented by any member bank. The maturity of notes are not to exceed six months. This ruling ought to help farmers to purchase tractors.

Our bankers would do well to follow the lead of their eastern friends and help finance and organize pig and calf clubs. It is good business for them as shown by one banker who spent three months time with the boys and girls, loaned $45,000 and increased his deposites $75,000. Who is going to be the banker for these future famers and hog growers. Of course it will help the country and the banker also.

Advertisements are helpful to a farmer as they keep him posted as to new machinery, the better kind of seeds, the many things he should buy for the family. If you will go through the columns of the Utah Farmer and read the advertisements you will see they are giving you facts about particular goods. Experts prepare these advertisements, they are news and tell you where and how you can secure the best kind at the right price. Advertisements will keep you posted and if you are interested in any particular line of goods, no matter where you buy, you should write and get catalogue or information. Remember we are just as careful about the advertisements that appear in our paper as any other reading matter.

SPECIAL CARE FOR SUGAR BEETS.

Growers of sugar beets are urged by our government to give special care to their beets during the growing season, in order that the yields may be increased, and in this way add to the nation's supply of sugar and it means an increased profit yield one ton per acre see what it means to our supply of sugar and its means an increased profit of ten dollars more per acre for the grower.

Better thinning is one of the most important factors for an increased yield, careless cultivation reduces the number of plants and thereby cuts down the tonnage. Proper irrigation is another thing that will help.

When we are helping the nation we are helping ourselves, for an increase production means a larger check on pay day. For this reason we can and should give special care to our sugar beets this year.

LEARN HOW.

To get the best results one must know how to operate any kind of farm machinery. Labor saving implements and tools are a help to any farmer only as he gets service from their use. Tractors will never be successful on some farms, simply because some farmers do not know enough about machinery to be able to operate them properly. A tractor will not run and give good service without some expert care. The manufacturers are making these machines as near fool proof as they can but the mechanism can never be arranged so that it will not occasionally get out of order. The need for repairs and adjustments is greater when the man who operates the tractor is unfamiliar with it. Every farmer who buys a tractor should take the time to fully inform himself concerning the inside workings of his machine and learn how to operate it properly and to keep it adjusted and in repair.

GOOD TOOLS.

Too many farmers overlook the necessity for modern tools and implements and do not seem to realize how important they are in producing a crop successfully.

A good manure spreader, an up-to-date drill, a good plow, disc harrow, cultivator, gasoline engine or cream separator often pays for itself in one season if it is intelligently handled.

Modern implements are adjusted to modern farming. In fact, modern farming is impossible without them. They make farm work more interesting. They save time, worry and labor. To this end, we suggest to our readers to look over every advertisement in each issue carefully. Check those you are most interested in as you go through—and then drop them a postal card and ask them to send you their literature. You will find nearly all of it full of information worth knowing.

HOPE AND CHEER

Under present conditions, what a blessing to humanity are they who, have hope and cheer. The power of kindness and good cheer is being made known the world over, brave, sunny souls, are doing their best to alleviate the misery caused by hate and discord. Often this power of hope and good cheer will snatch victory from defeat.

We ought to go at our daily tasks in a way that no matter what happens we are going to be cheerful. Cheerfullness will attract people to you will make friends, and after all friends are one of the greatest riches we can have.

Memorize some cheering, hopeful inspiring words and mottoes and when you are inclined to feel bad repeat them to yourself.

One can work better, can accomplish more when his soul is filled with sunshine, with hope and cheer.

Under present conditions the one who has hope and cheer, who can help others and bring sunshine into their souls is a blessing to humanity.

CONDITIONS HAVE CHANGED

Conditions have changed in many ways during the last year or two. Experience has taught us that we can not do farming "in the good old way" and keep up with the modern successful farmer.

There is a degree of safety in following the methods and doing things like our father done it, yet, there is danger in following this practice too closely. Every farmer who makes a success must be on the lookout for new ways of doing things better. You must move out of the old rut, adopt new ideas, new methods. Visit your neighbors see how they are doing, observe why they fail or succeed. A successful farmer must think, look ahead, plan and profit from his past experiences.

Conditions have changed and we must meet these new conditions with new methods. Some farmers are making money, while others are just making a living. Every farmer must work out his own plans to fit his own local conditions.

NOW IS THE TIME TO CULL

With the increased cost of labor and the high price of feed we should cull out the scrub cow the poor animal that is not a profit to us. It is a waste of effort to bother with poor cows. How are we to know the animal that is making a profit unless we keep a record.

It is, of course, fortunate for the dairyman who has had his cows tested and knows just which ones should go into the discard, but even aside from knowing this, the average farm is carrying many cows that he knows are unprofitable, two- and three-"titters," irregular breeders, cows that are becoming advanced in age and a host of others that you only have to look at to know that they are not liberal producers.

Every farmer should be careful in disposing or culling out his livestock, but the culling is important. We need more and better cows, a better quality of livestock. Now is the time to turn the scrubs over to the butcher and buy some better and more profitable producers.

MUST PRODUCE AT A PROFIT

As individuals or as a community we are going to be better able to finance the war if farmers produce crops and livestock that afford a reasonable profit.

Unless there is a chance to make more than a mere living there will be nothing with which to buy bonds, stamps, pay war taxes and thus help the government continue the war.

We are asked to produce more, we are asked to meet a serious need of food products. Our strength as a nation depends largely upon a greater production.

In order to help the government as well as for the selfish reason of desiring to help one's self, we should produce crops and animals that afford a profit—products for which there is a great demand and where there is compensation for intelligent labor. To be sure we must have patriotism enough to include crops, animals and other things that the government may ask. But no one can afford to give his entire crop to such things nor does the government wish it. We must strive to be prosperous as individuals and contribute liberally to the welfare of society and especially to the government.

LIVESTOCK FOR PROFIT.

The farmers of Utah are awaking to the fact that there is money to be made in keeping of livestock on the farm. There is no better evidence of the fact that animal husbandry is profitable, when the animals are raised economically and when the farm furnishes most of the feed and all the pasture required, than the prosperity of those who practice animal husbandry.. One may ascertain this by the type and breeding of the animals raised; the condition and appearance of the home, barns, silos and other unmistakable evidences of prosperous farming. There are other very reliable indications of profitable farming and among these are the advantages such farmers are likely to give their children for education and training for citizenship.

Pure bred or high grade livestock are the kind to keep. Where a start can not be made of pure bred livestock, a farmer should at least decide upon the breed he wants to keep and buy the very best bull of that breed that he can secure. It is encouraging to know that many of our farmers who are making livestock raising a part of their farm work, are securing pure breds of the better breeding.

When we learn the profit there is from livestock on the farm, we will increase the number and we will feed all our hay and grain to them rather than sell our feed to some one else who will make a profit feeding it to livestock.

Remarkable Tractor Experience

One Man With Tractor Did Work of Two Men and Six Horses.—Two Gallons Gas and Three-fourths Quart Oil Per Acre for Plowing.

By E. B. Jacobs.

Complying with your request of recent date, I will attempt, briefly, to relate my experiences with the farm tractor. Last May I unexpectedly became the owner of a 210-acre farm, and, although having been out of the farming games for about thirty-five years, I decided to attempt operating this farm instead of renting it. I was compelled to buy everything needful for farming, and my first decision was between horse power and tractors. The experience of farmers using tractors, in this section, was unsatisfactory, and in my judgment the average tractor was not a profitable investment for small farms of, say 200 acres, or less. Those which I had seen in use were too large and heavy, costing too much and available for only a small portion of general farm work. I had intended purchasing six head of horses, which with harness would have cost about $1,200.

At this time I chanced to see an advertisement of the Moline Universal tractor, and it appealed to me at once. I do not feel qualified to discuss the merits or demerits of the various makes of tractors, as my tractor knowledge and experience is confined to the one above named. I deem it proper, however, to explain why I believed it practical and profitable for farm work, as I am convinced that two of the principles involved are fundamental to tractor success on medium-sized farms.

First, it was light, weighing about 2,800 pounds. Second, in the use of implements, the operator sits on the implement, in the same position as if driving horses, using a long steering wheel. The advantage of comparatively light weight is obvious, for in plowing and cultivating fields it does not pack the ground, and is more mobile, and easily handled.

The advantage derived from the position of the operator, as above described, seems to me absolutely essential. First, because he (or she) can see the operation of the implement, and thus know that it is performing its work properly. Second, it permits one person to operate the tractor and implements at the same time.

I bought one of these tractors last June, together with a full line of farm machinery, with tractor hitch. After a two hours' lesson, my son, who had never before seen a tractor, undertook its operation. In brief, he plowed, prepared the ground and drilled sixty acres of wheat, using the tractor through all the various stages. He pulled two fourteen-inch plows, doing nice, smooth work. In using disk harrow and drag harrow, crusher or roller, he used two implements tandem, thus giving the ground two treatments with one operation, which was economical in both time and expense.

I was orginally apprehensive as to results in plowing stony or stump ground, as the large tractors I had seen usually tore things to pieces under such conditions, but I was most happily disappointed. We were stopped many times by rocks or stumps, but without the slightest damage to plow or tractor. I believe it stops easier than horses would under the same conditions, and without "killing" the engine. My son would simply "reverse" about two feet, place his foot on a lever, raise the plows enough to clear the obstruction, and proceed as usual.

The coming season I propose using the tractor with all kinds of work, including corn planter, two-row corn cultivator, grain binder, mower and spreader. It will cultivate corn thirty-two inches high. This winter I am using it to grind feed for my stock and will soon begin sawing wood from a tract now being cleared.

We did the most of our wheat plowing in July, when the heat and flies worry the horses, and were not compelled to stop and allow our "team" to rest and cool.

During the past two months of inclement weather the tractor has incurred no expense, which should be compared with the care of horses and present high price of feed. Its original cost, including two fourteen-inch bottom plows attached, was about $900. Six horses and harness would have cost $1.200. In plowing, preparing and seeding wheat ground, my son, with the tractor, has performed the work of six horses and two men in the same length of time. Under normal conditions he will plow from six to seven acres per day, using about twelve gallons of gasoline and one gallon of oil per day.

My experience as just related convinces me that a light tractor about the size of mine, say seven horse power on the drawbar and twelve horse power on the pulley, is entirely practiacl for medium-sized farms, and more economical than horses. I believe, however, that one good team is necessary in connection with the tractor, to handle the smaller details of farm work.

You also ask me to report any large repair bills or unfortunate experiences, so as to fairly present both sides, but I have nothing serious to report. The motor which came with the tractor proved defective and the company sent me a new one, and a mechanic to install it, without charge. We had one or two broken bolts and a couple of minor castings, but had them repaired locally at a cost of not exceeding 75 cents in any instance. In my opinion, 99 per cent of the trouble in using tractors is caused by the inexperience of the operator, and when he becomes thoroughly familiar with his motor and tractor, and understands how to keep same in adjustment, he will have no more delays or need of repairs than when working with horse power.

It is entirely practical to attach a headlight on the tractor for night use in case of emergency. I expect to use one and may plow at night if necessary.

FARM SCALE A NECESSITY

H. M. Nelson.

I am becoming more and more convinced that a scale on the farm is a necessity. Hardly a week passes by when the scale is not in use. Our scale has a five-ton capacity and is a standard make. I think it paid for itself the first year in use.

For instance, a cattle buyer came to buy some cattle and we could not agree on the price. We weighed them up and he paid me $35 more than he offered at first on the four head. Another instance is: Last winter my neighbors were selling their hogs for 7 to 9 cents per pound, thinking the pigs did not pay for their feed. We had the weight of our hogs and the corn that they consumed and found that they wee paying $1.22½ per bushel for the corn they ate. This induced me to keep the hogs and finish them up for the market. When we sold this car of hogs they had paid $1.55 per bushel for the corn that they had consumed during the fattening period.

By all means, place your scale convenient to the feedlot, for it is very instructive to note the gains in feeding. We made it a point to weigh the hogs every week and found their gains to vary. We found that they gained one and one-half pounds per day. Then we put in a self-feeder and found that they gained two pounds per day. Stormy weather set in and they fell back to the one-pound-per-day rate and when sold they had made an average of one and one-half pounds per day during the fattening period. Of course, better gains can be made, but the point is to know where you stand.

We keep a weight record on every horse and mule on the farm and it is amusing to see the interest the hired man takes to weigh them up every so often to see whether they are gaining or losing flesh.

LUBRICATION AND ENGINE LIFE

Have you ever seen a man who was running an engine run around hurriedly and investigate every bearing with a worried look on his face? Something had told him that some of the bearings were running hot and he would have to be careful. This often occurs, and you will notice that for the bearings that have been getting a little too warm he will go and get some more oil or else open up the oilers a turn or two. In nine cases out of ten this will remedy the matter and the bearing will then run cool.

But what caused the bearing to get hot? you ask. Why, it was the heat generated by the shaft rubbing on the bearing. It always generates some heat even if the bearing is well oiled, but if well oiled no more heat would be generated than would radiate from the bearing without its getting hot. But if the bearing does not get enough oil. or the right kind of oil, the friction in the bearing will be greater and more heat will be generated; then the bearing will get warmer and warmer until it is hot enough to radiate this increased amount of heat. If the temperature gets too high, the soft-bearing metal is apt to melt out or the bearing will "grab." The danger of this is most prominent in bearings that must operate with considerable weight.

How does oiling the bearing reduce

(Continued on page 11)

HANSEN LIVESTOCK & FEEDING CO.
OGDEN
UTAH

An Industry That Is Helping to Win the War

The men who direct the affairs of the Hansen Livestock & Feeding company have felt the tremendous urge of the war. They have sensed the paramount importance of increasing to a maximum the meat supply of the country.

With this impelling motive added to their own natural business energy, they have made a huge effort to expand the operations of the company in every possible way.

BIG FEEDER MARKET

They have kept their three big feeding stations at Ogden, Logan and Lewiston, Utah, filled to capacity with animals being fattened for the market. To do this they afford other livestock growers a market for all kinds of feeder stock.

The company's immense ranches, aggregating more than 17,000 acres, in northern Utah and southern Idaho, have been kept well stocked and are also producing great quantities of hay and grain.

A most notable achievement of the Hansen Livestock & Feeding company is the development of Lucermo, a high-grade feed for all kinds of livestock. It has been the result of a $500,000 outlay and the labors of a corps of animal food experts tirelessly experimenting to produce a well-balanced, all-around animal feed.

Lucermo has made good. We have fed it to thousands of cattle, sheep and hogs in our own feeding stations, and have proved that it will fatten livestock in two-thirds the time at 33 per cent lower cost than other feeding methods. Because of our unqualified success, we are increasing our output from 100 tons daily —all of which we have hitherto consumed—up to 500 tons daily, for the general market.

Write to the officers of the Hansen Livestock & Feeding company, and they will be glad to answer any questions regarding Lucermo and to help you solve any of your feed problems.

Hansen Livestock & Feeding Co.

General Offices
Ogden, Utah.

Lars Hansen,
Pres. and Gen. Mgr.

Lucermo

HOME

NOW FOR THE CONSUMER!

Sarah J. Robinson.

It is not the whole duty of the consumer to consume. His and her paramount duty is to help win this war. And it is a simple truth that the success of the conservation movement so vital to victory depends at this moment on the consumer alone.

The producer has done his best, and we know from the crop reports what that is. The wholesalers are being regulated, but let us not forget that no amount of wholesale regulation is going to give us an additional bushel of wheat to feed to the fighting lines in France. The retailer is now learning what is good for him. But the question as far as he and the wholesalers are concerned is one of price.

The paramount war question, however, is not price. It is one of amount. We can't save Europe and supply the world with nothing but lower prices. It takes the actual wheat and other food products. And economy and nothing but economy—in the home, the hotel, the restaurant—of certain essential products is going to give us the needed amount for export. We have got to save 125,000,000 bushels of wheat and the consumers have got to do the saving.

France and our other allies are in great need of sugar and American consumers must quit using so much sugar. We must have meat to send to our own soldiers and the soldiers of our allies, and the consumers, by self-abnegation, must furnish the necessary surplus. If they don't nobody else can or will. High prices will naturally cut down consumption a trifle—though staple food products are the last to yield to such influences. But there must be an influence more powerful than that—the spirit of an active and intelligent patriotism.

Let no one be frightened at the idea that this means hardship. Far from it. It is a mainly a question of substitution. It is easy to find a substitute for meat, one that will give all the nourishment required or desired. Any family can be happy without wheat. There are plenty of cereal substitutes, tasteful and satisfying. At bottom it is an infinitely little thing the nation asks—simply to vary one's diet. But from the war standpoint it is infinitely important—it involves the very essence of victory.

Heretofore food conservation has been to most consumers largely an academic question. Now it comes home as an individual duty. He must do his part as well as producer, wholesaler, retailer. He must have intelligence to multiply his homesaving of wheat and meat by millions and thus grasp the national significance of that stupendous total.

We are told that unless the leaders have vision the people perish. Now it is a question of whether the people themselves have vision. Unless they have, unless they act in their home with a clear understanding of the necessity and value of the service, then that may perish which the centuries may not restore.

CORN AND COTTAGE CHEESE CUSTARD

1 can corn (equal to 2 cups), 2 cups soft cottage cheese mixed with white sauce made form 2 cups milk, 2 tablespoons fat, 2 tablespoons flour, salt and pepper, 2 eggs, slightly beaten.

Method: Beat cottage cheese into the white sauce. Mix with corn and seasonings, place in greased baking dish and bake in slow oven, like a custard, by placing the dish in a pan of warm water. Do not let the water come to the boiling point. Bake from ¾ to one hour until it sets in a soft custard. This is an excellent alternate for meat.—Wyoming State Agricultural College.

Cottage Cheese Balls.

½ cup thick white sauce, made from ½ cup milk, 2 tablespoons flour, 1 tablespoon fat, salt and pepper, 2 cups cottage cheese, 2 cups mashed potatoes, 1 egg, beaten, bread crumbs.

Method: Make white sauce. Gradually beat cottage cheese into it. Add mashed potatoes, season, make into soft balls, roll in bread crumbs, then in beaten egg, then in bread crumbs again. Fry in kettle of deep fat until a golden brown. These cheese balls are delicious served with tomato sauce.—Wyoming State Agricultural College.

Tomato Sauce.

1 cup canned tomatoes, 2 tablespoons fat, little onion, salt and pepper, make like a white sauce.

Bean Loaf.

1½ cup mashed potatoes, 1½ cup mashed beans, navy, lima, Mexican, or mashed peas or lentils, 1 cup milk or ½ cup or more of any leftover soup, ½ cup bread crumbs, ½ teaspoon sage, ¼ teaspoon pepper, ½ teaspoon salt, 1 onion or a cup or less of cooked onions.

HOW TO USE A CASSEROLE

By Mrs. Mary A. Roberts.

To be economical is to be patriotic, so long as you, Mrs. Housewife, do not carry it too far and fail to provide sufficient nourishing and attractive foods for the family. There is as much difference between a "warmed over" dish and a leftover, cooked next day in a casserole, or earthenware baking dish, as there is between a cold potato and a hot, mealy, baked one with butter and paprika.

Casserole cookery saves and at the same time enables one to prepare really tempting dishes. Not only is it to be used for preparing left-overs, but no other form of cookery prepares the cheaper cut of meat and fish so temptingly as this form. Casseroled dishes may be tucked into a slow oven, or a fireless cooker, and promptly forgotten until serving time.

Casseroles as serving dishes are attractive and they may be purchased in all sizes and at all prices. An economical set to buy, if much casserole cooking is to be done, consists of a large oval casserole, capable of holding a fowl; a round shallow casserole; three of individual size for reheating left-overs; and a deep, round one for soups and stews. A few precautions will lengthen the life and usefulness of casseroles. Never place them on the stove or in the oven without water or fat. If full or partly full do not place roughly on a metal surface. And use an asbestos mat beneath casseroles when cooking on top of stove. The simmering burner will furnish ample heat for a casserole after the contents have once been heated. Try some of these:

Flank Steak.

Choose a flank steak, or one cut from the under round. It should be cut 1½ inches thick, weighing about 3 lb. Place in the casserole and cover 2 inches thick with onions sliced and well seasoned with salt and pepper. Finally, cover all with the thinnest slices of salt pork and add 1 c. of water. Cover closely and bake in a slow oven, or fireless cooker, all the afternoon. Just before serving the cover may be removed to brown the top, if desired. Serve from the casserole.

Casserole of Lamb.

For this, use slices from the leg, or from the neck. Be especially careful to remove all fat as lamb fat is much too strong in flavor to use in casserole cooking. Brown the meat, after flouring, in a spider. Arrange a bed of vegetables in a casserole, using carrots and parsnips, with green peppers, if liked. Place the browned meat on this and sprinkle with celery and finely chopped onion. Add salt and pepper with 1 c. of water. Cook 3 hours slowly, or all the afternoon.

Veal Paprika.

Use 3 lb. of neck of veal. Cut in good sized pieces. Place in a spider 1 tbsp. of fat, add 2 onions sliced, and make the whole pink with parika. Cook until the onions are browned, then add the meat well floured, and cook until well browned. Put the whole into a casserole with 1½ c. of water and a little salt. Bake all the afternoon in a slow oven and serve with spaghetti, boiled ,and seasoned only with butter, pepper and salt.

Eggs in Baked Potatoes.

Scrub and bake 6 potatoes. Cut the tops lengthwise of the potatoes. Mash and season. Use plenty of milk, butter, salt, paprika and the merest suspicion of nutmeg. Half fill the shells and place each potato half in an individual casserole. Break a fresh egg into each case, cover with grated cheese and buttered crumbs and bake in a moderate oven until the eggs are set and the crumbs brown. If the oven is very hot, set the casseroles in a pan of water as you would custards.

Casseroled Oyster Pies.

Brown a minced onion in 2 tbsp. of hot fat, add 3 tbsp. of flour, stir till blended, then add ½ pt. of water. Cook until thickened, add 1 pt. of oysters with their liquor and season with paprika, salt and 1 tsp. of kitchen bouquet, a prepared liquid seasoning. Remove at once from fire. Line individual casseroles with plain pastry, and bake. Cool slightly, fill with oyster filling and cover with a lattice of the paste. Brown in a quick oven and serve very hot. These are delicious and as the cases may be made and baked in the morning, are not difficult to serve for a company supper.

Vegetable en Casserole.

Place a layer of firm ripe tomatoes in the bottom of the casserole. Peel them in and cut in quarters or halves, if very small. Next place a layer of mild onions, or use the small button onion. The next layer is one of potatoes cut in slices with chopped parsley and a shredded green or ripe, pepper sprinkled on top. Repeat the layers until the casserole is full, then add meat stock to just cover. Use 1 c. of water to which 1 tsp. of beef extract is added, if you have no stock on hand. Bake in a slow oven 1 or 2 hours.

Rice With Bacon.

Boil 1 c. of rice in plenty of boiling salted water, for 15 or 20 minutes.

Don't Waste Your Strength

and time washing clothes by hand. Do it better with one of our Electric Washing machines.

We have them from $35.00 up. Send for our catalog.

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YOU can get continuous service from your tractor only if you give it plenty of good oil.

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GAS ENGINE TRACTOR OIL

means a smooth-running tractor, more power in the drive-wheels, and less time out for repairs. Specially designed and prepared to meet the severe conditions under which tractor engines are operated. Holds the correct lubricating body at any extreme of temperature and speed. Cuts friction and carbonization in half.

THE CONTINENTAL OIL CO.
(A Colorado Corporation)
Denver Pueblo Salt Lake City Cheyenne
Butte Albuquerque Boise

Drain in a collander, and wash a number of times under the faucet, and most rice is still polished with talc. When thoroughly washed, place in a round casserole with ¼ c. of hot water, sprinkle the top with paprika and then cover with the thinnest possible slices of mild-cured bacon. Cover, and bake 30 minutes, or longer in a very slow oven. Uncover at the last that the bacon may be crisp brown. This is most satisfactory as a luncheon or supper dish.

Carrots With Celery.

Dice 2 c. of cold cooked carrots and 2 c. of cooked celery. Make a cream sauce with 4 tbsp. of butter, 3 tbsp. of flour and 1½ c. of milk. Cook, stirring all the time until blended and thickened. Place the vegetables in a caserole, pour the sauce over and season with salt, paprika and a grating of onion. Cover with buttered crumbs and bake ½ hour in a moderate oven.

Hungarian Goulash.

Purchase ½ lb. of lean fresh pork. Remove all fat, especially from lamb, and cut the meat in good sized serving pieces. Put 2 tbsp. of fat in the casserole and place over a slow fire. When hot add 2 large onions, sliced, salt and enough paprika to make quite red. Cook, stirring continually, until onions are faintly yellowed but not brown. Add the meat and brown thoroughly, then just cover with boiling water and let simmer 1 hour, or bake in a slow oven 2 hours. Beef, veal and pork also make an acceptable goulash, but the beef should be started 2 hours before the other meats as beef requires a longer time to become tender..

Mexican Rice.

Wash ½ c. of rice and dry thoroughly. Place 2 tbsp. of shortening in a casserole and when hot add the rice. It must be dry or it will snap and possibly burn the cook. Stir it until the grains begin to yellow. Tmen add 2 fresh, peeled tomatoes or 1 c. of canned tomato, with one small onion sliced, salt, paprika, 1 tbsp. of chopped parsley and one-half of a sweet pepper. If like very hot add one hot pepper shredded. Pour over it 2 c. of stock or hot water cover and bake slowly until rice is quite dry, and the liquid all absorbed

Caserole of Veal With Sauce.

Use a 2 lb. slice of veal, cut one-half inch thick. Forequarter cuts may be used, or a slice from the leg. Wipe and trim free from fat and bone. Cover these trimmings with 1½ c. of water, cook slowly 1 hour, strain and use the stock for sauce. Cut the meat into 2 inch pieces and sprinkle with salt, paprika and a very little nutmeg and the grated rind of a lemon. Dip each piece in slightly beaten egg, then in bread crumbs, and brown in deep fat. Then place in the casserole and cover with the following sauce:

Brown 3 tbsp. of flour in 3 tbsp. of shortening, add 1 c. of the veal stock, 2 tbsp. of catsup, 2 tbsp. of lemon juice, and 1 tbsp. of Worcestershire Sauce, with salt to taste. If liked, add 1 can of button mushrooms, although they are not necessary. Pour over the veal, cover and bake slowly, one hour; or if made in the morning allow it to cool in the sauce, and then reheat an hour before serving.

FIGHTING THE ROSE APHIS

Rose growers who allow the flowers to be damaged by the ravages of the rose aphis, have only themselves to blame. Although the aphis is widespread over the entire country, as well as abroad, it is easily controlled. Careful spraying of the plants with solutions of nicotine will remove all danger and neither the expense nor the trouble involved is sufficiently great to be a real obtsacle.

The rose aphis is a small insect with a body about one-twelfth of an inch long. The young and some adult forms are wingless but certain adults develop wings from time to time. The color varies from green to pink. By means of its slender beak the aphis sucks out the juices of the plant on whose buds and unfolding leaves it feeds. These, prevented from attaining their perfect form, become curled and distorted and the beauty of the flowers is in large measure ruined. Moreover the aphis secretes a sweet sticky liquid called honeydew which spoils the appearances of the foliage on which it is deposited.

Under favorable conditions it propagates rapidly throughout the year. For example, some recent investigations conducted in California by the Department of Agriculture showed that one female gave birth to 48 young in 6 days. At the end of that time, the mother aphis was knocked from the rose and perished.

This is not at all an uncommon fate. A heavy rain, which washes the insect away is one of its most natural checks, though birds and other insects prey upon the aphis to a considerable extent. Extreme heat is also unfavorable to the aphis.

The rose lover should not, however, depend upon nature to rid his garden of the pest. A 40 per cent solution of nicotine is much surer and not much more trouble. One part of the solution to from 1,000 to 2,000 parts of water with the addition of one pound of whale-oil soap to every 50 gallons of the mixture is recommended by the U. S. Department of Agriculture. A more convenient recipe, when there are only a few bushes to be treated, is a teaspoonful of 40 per cent nicotine solution to 2 gallons of water and one-half ounce of whaleoil soap. The soap should be shaved fine and dissolved in hot water.

Mixtures of this character should be applied as a fine, pentrating spray by means of a compressed air sprayer or bucket pump. Such a pump costs from $3.00 to $15.00. Together with nicotine solutions it can usually be obtained at seed stores. If no pump is to be had, however, the infested twigs should be dipped in a pail of the solution. Care should be taken to use these solutions at strengths no greater than those mentioned above, since injury to the foilage may result through the use of too much soap, or mildew be favored by too strong a nicotine solution.

Application of insecticides should be made on the first appearance of the pest which varies from the time that the leaves are put forth until the buds begin to form. Applications should be repeated as found necessary.

ONLY TWENTY YEARS AGO

Ladies wore bustles.

Nobody swatted the fly.

Nobody had seen a silo.

Nobody had appendicitis.

Nobody wore white shoes.

And buttermilk was free for the asking.

Cantaloupes were called muskmelons.

You never heard of a "tin-Lizzie" or flivver.

Doctors wanted to see your tongue when you were sick.

A milk shake was a favorite drink at the restaurants.

Nobody cared what the price of gasoline was in those days.

Farmers came to town for their mail —it was not carried to them.

The hired girl drew one-fifty per week and was satisfied with it.

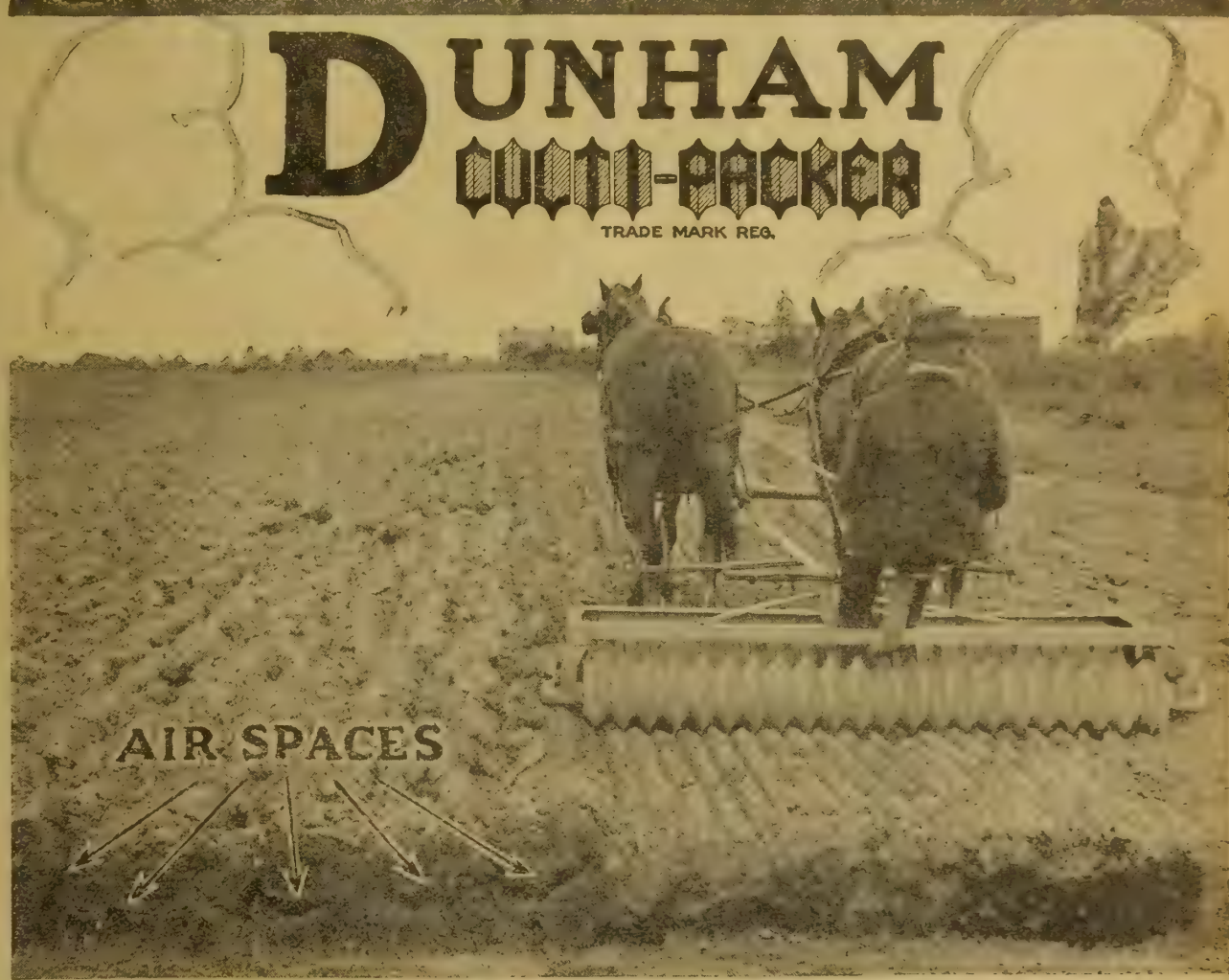
The butcher threw in a "chunk of liver" when you bought meat.

Nobody listened in on the telephone for there were few telephones.

Strawstacks were burned instead of being baled and stored for the next winter.

Publishing a country paper was not a business—it was run for the editor's health.

Jules Verne was the only convert to the submarine and he told of it in his writings.—Ex.



Note where the Culti-Packer has passed over, that all lumps are crushed, all air spaces are firmed out and the surface is stirred and loosened just as a cultivator would do it.

Culti-Pack Your Wheat

Without an hour of extra labor you can get the finest seed bed of firm, moist soil that wheat was ever drilled in.

The Dunham Culti-Packer does not add an extra operation—it helps your harrows and other tools to fit the seed bed quicker and better.

Use the Culti-Packer before and after seeding and it will give you quick sprouting, and a close, even stand of vigorous rooted plants to stand the winter. In the spring it will settle down any frost heaved plants, tuck the soil around the roots and prevent all loss from winter killing.

There is no guess work about what the Culti-Packer will do for wheat. It gives remarkable increases in yield, certified to by leading authorities on farming.

We have printed the facts in a 48-page book "Soil Sense", illustrated with 100 field photographs showing the Culti-Packer's work on wheat and every other crop.

Ask your dealer for "Soil Sense" or if he hasn't it write us direct. It will mean more wheat from every acre.

THE DUNHAM CO., CLEVELAND, OHIO

Factories at Berea, Ohio

Weeds and Their Control

(Continued from page 1)

cause bunches in pasture and some of them are poisonous to animals.

Yellow trefoil resembles alfalfa save in that it has a yellow flower and in that its top growth creeps along the ground. It crowds out alfalfa and its seed form a common impurity in alfalfa seed. Vigorous cultivation with the spring-tooth harrow removes it.

Perennials with Rootstocks.

The worst perennials spread by means of rootstocks as well as by seeds. On this account it is as necessary to kill the rootstocks as it is to prevent seeding. Various methods have been used for doing this. Important among these are (1) cutting down the tops, (2) smothering, (3) covering with tar paper, (4) pasturing, (5) digging, (6) treating with chemicals, and (7) rotation with smother crops.

Cutting.—The one sure way to get rid of these weeds is to wage a war of attrition, that is, to keep the tops cut down so thoroughly that they cannot develop any green leaves. The roots will eventually starve if they are not fed. The leaves feed the roots; therefore, no green part is to be allowed above ground. Constancy alone can prevent these pests from gaining strength; leaves above ground soon become green. The chlorophyll makes food for the storehouse that must be exhausted. A besieging fleet would not consider letting an occasional shipload of supplies pass the blockade. When a strict blockade has weakened the enemy, then is the time to strike. In the control of weed pests, the course of identical.

Smothering.—Manure or straw may be piled on small spots and spread well and beyond the edges to make sure no stalks come up beyond the edge of the pile. The pile should be so thick and compact as to shut out both light and air. No leaves must be allowed to penetrate. This prevents the development of green leaves. Two seasons should kill the weed.

Covering with tar paper.—Sometimes a weed may be overcome by covering with tar paper or heavy opaque building paper such as will shut out the light. Care must be taken to prevent holes' being made in the paper, to weight it down thoroughly, and to have it extend well out beyond the edges. This prevents the growth of green leaves. Two seasons should kill any weed.

Pasturing.—Very close pasturing with hogs, sheep, or goats may weaken and in some cases kill out perennial weeds. Hogs may root out the underground stems and sheep or goats may eat down the leaves as closely as to starve the rootstocks.

Digging.—Where the spot is small, control may be gained by keeping water away and by digging out the rootstocks, which are thereby exposed to the hot dry sun. Let the earth be stirred up to keep it dry. If the spots are very small, a canvas may be spread to shed rain in a storm. Sometimes a smiliar exposure to frost may help.

Treating with chemicals.—In some places it is more convenient to spray a weed patch than to use one of the other methods. A broad-leaved weed may be killed in a narrow-leaved crop. If, however, the crop is wide-leaved then sprays are as likely to kill down the crop as well as the weed, and perhaps more so due to the fact that weeds usually have heavier leaf coverings. Strong salt solutions are used sometimes both on the tops and in the soil.

Iron sulphate, copper sulphate, arsenate of soda, sulfuric acid, and corrosive sublimate have all given better service, however. The usual strength in the middlewest where they have been tried most is to add to one gallon of water twenty pounds of iron sulphate, two and a half pounds of copper sulfate, four ounces of sodium arsenite (sodium arsenate, twenty ounces), a quart of sulfuric acid, or one and three-fourths ounces corrosive sublimate. Iron sulphate and sodium arsenite (not sodium arsenate) have given best results. Some few trials in Utah seem to indicate that our weeds are so much more resistant that the solutions need to be stronger—perhaps half as strong again.

(7) **Rotation.**—Corps that develop heavy top growth such as alfalfa, sweet clover, or heavy grain may weaken rootstocks by shading. Cultivate crops such as corn or potatoes which permit a thoroughly hoeing may be a good means of gaining control. The weeds must be taken out, even though the crop is somewhat injured by so doing.

Specific Weeds.

Morning glory, whitetop, mouse ear, Canada thistle, ground cherry, milkweed and quack grass are the most aggressive weeds in this group. There are, however, several other bad ones. Morning glory, or bindweed, has long slender stems. It grows on the ground when alone, but climbs any support. It has arrow-shaped leaves, whitish, yellowish or pinkish funnel-shaped flowers, and triangular seeds. It is already widely scattered in Utah.

Whitetop has heavy whitish leaves and a white flower. It is spreading rapidly in Utah. It is sometimes called Leslie weed.

Mouse ear or "desert" weed, or poverty weed as it is variously called, is widespread. It has small inconspicuous flowers and rather thick oval-shaped leaves about half an inch long. It is slightly gummy.

Canada thistle has been known to be in the state only four or five years. It has long, slender stems and pinkish-purple flowers. The heads are no larger than the end of a person's finger, whereas common thistles have many times larger ones. The leaves are extremely spiny. In early growth the leaves are small and blue-green in color. It spreads by both seeds and rootstocks. It is not common except in a few areas. When well-started it is extremely agressive. Great care should be taken to eradicate it from its present foothold in a few rather small areas.

Ground cherry is related to the potato. It has broad, pointed leaves and a white to pinkish or yellowish flower closely resmbling that of a potato. The fruit is like a potato seed ball but is borne in a loose pod. The seed ball is often eaten. It is widespread, but is not spreading so rapidly as a few others. Neither is it so dangerous.

Milkweed is whitish and woolly, has broad thick leaves and a thick milky sap. The seed is borne in a large conical pod. When the pods break the seed scatters far and wide by means of many wool-like wings.

Quack-grass resembles common wheat-grass (bunch grass) to which it is a close relative. It is one of our worst weeds when once well etsablished.

Other well-known weeds that spread by creeping rootstocks are saltgrass, asters, horsetail, ragweed, one of the saw thistles, field willows, and the wild rose. None should be allowed to perist as they spread rapidly.

Prevention.

With all weeds, eradication involves much expense of labor if not also of cash. It is much simpler, cheaper and more effective to keep the land clean than to clean it after it has once become infested.

In a large measure the problem of eradicating weeds must be handled by the community, that is, by the farmers as a group in a co-operative unit. Under the direction of the county farm demonstrator, the farmers that are not already organized should cooperate to combat weeds, especially new weeds which could be exterminated rather easily on account of their small number. Canada thistle is spreading through entire sections, where it might be held at bay. Then everybody must be alive to recognize new menaces. Here is a field for

TABLE OF COMMON WEEDS (Their Nature, Propagation and Control)

Weed	Nature	Propagation	Control
Pigweeds, Sunflower, etc	annual, erect	seeds (water, seed, and manure)	clean seed, clean cultivation
Old Witch Grass (other annual grasses)	annual, finely-divided head, many roots	seed (water, seed, and manure)	clean seed, clean cultivation
Tumbleweeds	annual, globular	seed (rolled by wind)	clean seed, clean cultivation, good fences, rotation
Mustards	annual, erect	seed (water, seed, and manure)	clean seed, clean cultivation, rotation, and spraying
Shepherd's Purse	winter annual, erect, triangular pods	seed (water, seed, and manure)	clean seed, clean cultivation
Prickly Lettuce	winter annual, erect, milky sap, yellow flowers	seed (wind, water, seed and manure)	clean seed, clean cultivation
June-Grass	winter annual; occurs in alfalfa	seed (water, animals, and manure)	springtooth alfalfa fields in fall and spring
Barley-Grass (foxtail)	biennial, bushy head, bunchy	seed (water, animals, hay and machinery)	harrowing, drainage, and rotation
Sweet Clover	biennial, erect	seed (water, animals, and seed)	mowing, cleaning, and plowing
Burdock	biennial, pie-plan-like leaves, bur balls	seed (water, animals, and seed)	plowing, grubbing
Cocklebur	annual, resembles young sunflower	seed (water, animals, and seed)	cultivation
Dandelion	perennial, root-crown (lawns, pastures, hay fields	seed (wind and water)	plowing, grubbing
Mallow (cheese-weed)	perennial, root-crown, matted top growth	seed (water and manure)	plowing, grubbing
Docks and Lupines	perennial, root-crowns (wet places)	seed (water, birds)	drainage, plowing, grubbing
Yellow Trefoil	perennial, root-crown, resembles white clover except for yellow flower (alfalfa fields)	seed (water, seed, and manure)	clean seed, and ferquent harrowing with springtooth
Morning Glory	perennial, rootstock	seed and rootstock	cutting down, smothering rotation, sheep, or hogs
Whitetop	perennial, rootstock, white flowers mustard family	seed and rootstock	cutting down, smothering rotation, sheep
Canada Thistle	perennial, rootstock, erect, small head. (In small spots as yet)	seed and rootstock	cutting down, smothering rotation, chemicals
Ground Cherry	perennial, rootstock, seed in loose pod.	seed and rootstock	frequent deep cultivation and smothering
Milkweed	perennial, rootstock milky sap, fluffy seed	seed and rootstock	constant cultivation and smothering, chemicals for small spots

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RELIABLE FARM BARGAINS

We have some very exceptional farm buys this week in the Bear River valley. These farms are located near a good town. City water, electric lights, schools and railway accommodations. They can be bought for a small payment down and terms on the balance. Some of them have houses, barns and other improvements.

70 acres at $200.00 per acre.
10 acres at 10.00 per acre.
38 acres at 125.00 per acre.
93 acres at 110.00 per acre.
67 acres at 50.00 per acre.
90 acres at 125.00 per acre.
60 acres at 50.00 per acre.
90 acres at 20.00 per acre.
40 acres at 125.00 per acre.
58 acres at 200.00 per acre.
70 acres at 20.00 per acre.
40 acres at 20.00 per acre.
80 acres at 20.00 per acre.
90 acres at 20.00 per acre.

These are just a few of the many farms that we have for sale. If you are looking for a good farm, we can suit you on price, location and terms. For further information, call or write

KIMBALL & RICHARDS,
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Phone Was. 963.

FARM BARGAIN

160 acres, cuts 200 tons of hay, 45 head of cattle, 4 work horses, implements, good pasture, a few apple, cherry, pear and small fruit trees, 8 room house, barn, machine sheds, wagon scales, blacksmith shop, close to school and open range, good water right. ($16,000 Terms.

FEDERAL LAND COMPANY
Ogden Utah

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

50 ACRE FARM

I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.

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HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

WYOMING

560 ACRE Cattle Ranch situated in the great Bridger Valley at Mountainview, Wyo. 2 Good Houses and all out Buildings in first class condition. This place is located near the best Range in the State nearly all free range. Over 300 head of cattle wintered off the hay crop of this place last year. The place is well fenced and crossfenced and has an excellent water right. Price $25,000.00. $12,000.00 down balance in 5 years. We have a few other places at a bargain if this don't suit. Make your inquiry today. Address

HARVEY & HARPER
Box 248 Evanston, Wyoming.

county agents, agricultural teachers, students, and farmers who have some technical knowledge.

To assist the farmers who try to control weeds, a law compelling at least the mowing of weeds previous to seeding should be in force. The law must of course carry with it a penalty severe enough to make it effective. A law alone, however, is of no avail. Unless a representative part of the community is living the law, offenders will not be punished. In such cases the law becomes dead and, therefore, worse than useless. Only the minority can be driven or deterred by a law; the majority must make and enforce it. Good farming comes first; co-operation second; a general enlightenment, third; force and penalty should be applied in cases where these other methods have not sufficient grip. No man has the right to menace a whole community.

General Principles.

By the rigorous application of a few general principles, weeds may be eradicated from any area.

Clark and Fletcher (Farm Weeds—pp. 15-17) give the following:

"1. There is no weed known which cannot be eradicated by constant attention, if the nature of its growth is understood.

"2. Never allow weeds to ripen seeds.

"3. Cultivate frequently, particularly early in the season, so as to destroy seedlings.

"4. Many weed seeds can be induced to germinate in autumn by cultivating stubble immediately after harvest. Most of these seedlings will be winter-killed or can be easily disposed of by plowing or cultivation in spring.

"5. All weeds bearing mature seeds should be burnt. Under no circumstances should they be plowed under.

"6. All weeds can be destroyed by the use of ordinary implements of the farm, the plow, the cultivator, the harrow, the spade, and the hoe.

"7. Be constantly on the alert to prevent new weeds from becoming established.

"The practice of summer-fallowing and, to the exclusion of all crops throughout the season, whatever may be said against it, affords the best opportunity to suppress noxious weeds. For lands foul with persistent growing perennials, a thorough summer-fallow will usually be the most effective, and in the end the least expensive method of bringing the weeds under control.

"To keep farms free from weeds, few methods give such good results as a systematic short rotation of crops, with regular seeding down to grass or clover at short intervals."

WHY CHERRIES DO NOT MATURE

Lewisville, Idaho.

Utah Farmer:

Would you please be kind enough to give me some information in regard to raising cherries? I have some cherry trees that bloom heavily every year, but very few cherries mature.

Dan C. Stalling.

Answered by Dr. M. C. Merrill, Utah Agricultural College.

One of the first requisites in growing cherries successfully in a climate that is adapted to their growth is the proper kind of soil. Cherries prefer deep, sandy loam that is well drained. The ground water should not come closer than within fifteen feet of the surface. The soil should be sufficiently moist to insure good growth, but not too damp as cherries will not stand too much water. It may be that your cherry trees are in soil that is too rich for them and they are therefore making too much wood growth at the expense of fruit. This often happens in a heavy, rich soil. Such soils are better adapted to apples and pears than they are to cherries. If that is the case, the wood growth can be checked and fruiting induced by pruning back the roots somewhat, also pruning the twigs in the summer time, or by leaving the ground uncultivated.

It must be said, however, that in many cases where cherries drop their fruit the reason is inexplicable. It is a fact that there are many things and conditions about cherry culture that are not yet known; probably less work has been done on the cherry than on any other of our orchard fruits. It is believed by many that cherries do not need the interplanting of varieties in order to insure cross-pollination, as is the case with plums. Yet some authorities state that the Royal Ann, or the Napoleon cherry, does much better when either the Lambert, the Ring, or the Black Tartarian varieties are planted near it to insure cross-pollination.

EXPERIMENT STATION ASSISTS IN FIGHTING ALFALFA WEEVIL

New Circualr Outlines Effective Control Method.

In order to assist the farmers in the fight against the alfalfa weevil, the Utah Experiment Station has just issued Circular No. 31. "The Alfalfa Weevil" in which Professor Harold R. Hagan has surmarized the essential information for controlling the pest. The suggestions contained in the circular have already been tried by farmers in various sections and found very effective.

Weevil injury to the alfalfa crop of the West aggregates an enormous sum annually. This insect first appeared in Salt Lake County in 1904, from where it has spread into adjoining states and is still spreading.

The over-wintering adult weevil appears in the alfalfa field in the early spring as soon as the crop has comfenced growth. Shortly after the female deposits her eggs in the tender stems of the alfalfa plant. Upon hatching, the larvae work their way up the stems to the green growing tip on which they feed. It is rather difficult, therefore, to get a good first crop. After the weevil larvae are fully grown they seek shelter, usually in the dead vegetation at the alfalfa crown. From cacoon, the adult insect soon appears.

The farmer should use very available means to bring the crop to an early maturity. Early spring disking and the best irrigation practice assist in this. If the alfalfa is unable to reach maturity it should be left until most of the eggs have hatched. It should then be cut and the hay removed as quickly as possible. The field should then be gone over carefully with a spring-tooth harrow followed by a brush or wire drag. This breaks up the surface of the soil, stimulates growth of the second crop, tears all green stems from the alfalfa crowns and starves the larvae, makes a fine dust mulch which heats under hot sun and burns and suffocates the larvae, and crushes or drags out into the mulch all the larvae hiding in the alfalfa crowns. The field must be dry to produce a fine dust. A few days later the crop should be irrigated.

A free copy of this circular which contains a chart showing the life history of the alfalfa weevil and directions and illustrations for making a brush drag may be obtained from the Utah Experiment Station, Logan, Utah.

LUBRICATION AND ENGINE LIFE

(Continued from page 7)

this heat? The shaft of a bearing properly lubricated with the right kind of oil does not rub on the bearing. Instead it rides on a film of oil, so its friction is the friction of the oil sliding on itself, rather than the friction of the metal rubbing on metal. The oil, like any other liquid, is made up of minute particles, spherical in shape, which can flow over each other. In the well-oiled bearing the particles of the film of oil roll and slide over each other as the journal revolves. The friction of this well-oiled bearing will be only about one-eighth to one-twelfth the friction of an unlubricated bearing and about one-fourth the friction of a scantily-oiled bearing, and the heat generated will be proportionately less.

Animal and vegetable oils have practically gone out of use for lubrication purposes of any kind, and they have entirely gone out of use for engine lubrication. They break down when heated and form a gummy, sticky carbon deposit which increases the friction of the bearing and also prevents fresh oil from getting to the bearing.

Petroleum oils are one of the products obtained by the distillation of the petroleum. They are mineral oils, so they will stand high temperatures without breaking down, and they will not gum up as badly as animal or vegetable oils will, and they will not get rancid with age.

There is considerable knack in selecting the right kind of oil for each case. If too heavy an oil is used on a bearing, the friction will be more than it should be; if, on the other hand too light or thin an oil is used for the weight on the bearing, it will be squeezed out and cannot lubricate the bearing properly. Of the two cases the latter is the worst, but both are bad from an economy standpoint.

Like anything else, oil wears out. When it is worn out it should be expelled from the bearing and replaced with fresh oil. The accomplishment of this depends upon the design of the bearing, the way the oil is gotten to it and how much oil is applied.

The bearing should be so designed that it will hold the oil while it is being used, and the fresh oil coming into the bearing will force the old used oil out. In this way the dust and grit that may have worked into the bearing is carried away by the old oil and the bearing is kept clean.

The best way to achieve this result is to have the bearing running in a bath of oil forced to it by a pump. This is not practical on most farm machinery. Forced lubrication by a pump instead of lubrication with an oil cup is much used, however, and is used on some farm machines, especially automobiles and tractors. By the use of a force feed pump the supply of oil to a bearing can be regulated to a nicety till it is getting plenty, and yet is not getting a wasteful oversupply.

Oftentimes, especially with stationary gasoline engines, the oil will collect in the crank case or the bed of the engine frame. This oil is not worn out, but it is full of dirt. The operator does not like to throw this oil out, so he uses it over again Sometimes he strains it and sometimes he does not, but even an ordinary straining will not remove all the grit and dirt. Consequently the engine is injured.

It is all right to use oil over as long as it retains its lubricating properties and contains no grit, but it is decidedly poor economy to use it over if it has not been filtered. It will cut an engine out very rapidly.

Engine oil that has become very badly burned or carbonized should not be re-used in an engine; it will foul the cylinder too much. It can, however, be used on many other machines about the place.—Arthur L. Jenkins.

This is the Mower that's Easy on the Team

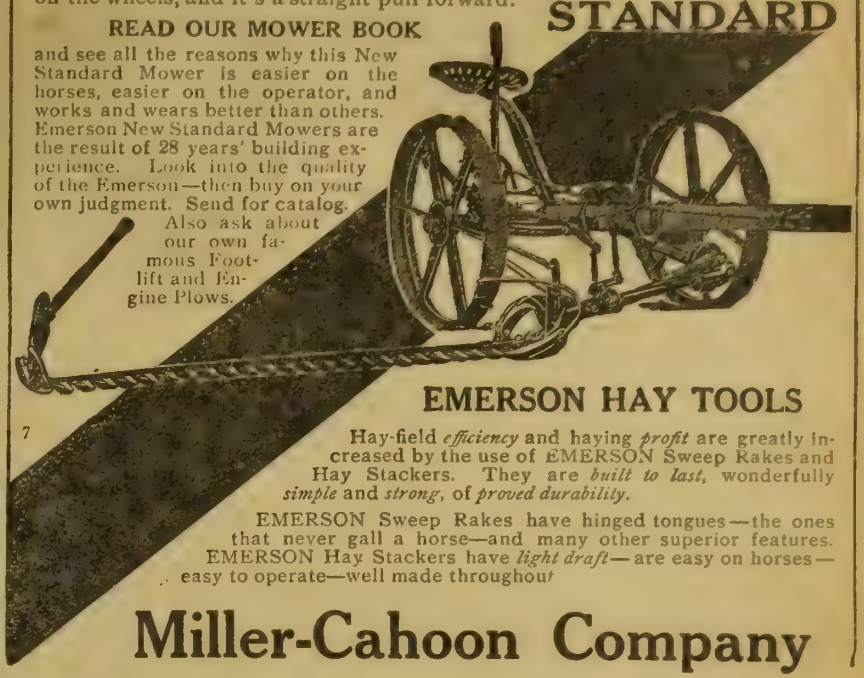
Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

EMERSON STANDARD

READ OUR MOWER BOOK

and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.



EMERSON HAY TOOLS

Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

Miller-Cahoon Company

MURRAY, UTAH IDAHO FALLS, IDAHO

Hog Fattening Starts Now

Prepare your hogs for fall profits now. To grow best they need something other than plain grain. Growth producing protein, in sufficient quantity for hogs, is lacking in a grain diet. A balanced ration is necessary for the best results. Even a small amount of

High Protein Tankage

mixed with the usual amount of grain will give a better and more balanced feed. It makes for larger and more solid growth and if given to the sow, it results in firmer and stronger pigs.

Ogden Packing & Provision Co.

Ogden, Utah.

LIVE STOCK

WASTES THROUGH BLOAT

J. C. Loomis.

If comprehensive estimates were made on the subject, it is likely that the amount of money lost by the dairymen though bloat each year would be a big surprise to most of us.

Why this should be, is hard to understand, for there are very few dairymen that have not at some time lost animals in this way.

Usually the spring is the worst time for bloating, as the supply of hay is low by that time, and it is a great temptation to economize on hay by pasturing the fresh young alfalfa. With the feed dampened by rain and fog, the stock are most likely to be affected.

To enumerate the different remedies that one hears of, would require a much larger amount of white paper than the editor allows us, but it has become a prevailing opinion among good dairymen, that the surest remedy is prevention.

Some find that by mowing the green alfalfa and allowing it to wilt before feeding, they overcome the bloat difficulty. This soiling of crops is nothing new, but should be more extensive, ly practiced by dairymen who pasture as there is very little chance of bloat, and the cows give as good a flow as when on pasture. The extra cost of cutting and hauling, is offset by the lesser amount of damage done to the fields, for it is undoubtedly hard on the alfalfa plant to have cows tramping over the crowns; and besides, there is a great waste of hay in pasturing that is overcome by soiling. When the alfalfa is about run out the damage to the field may not be so great; and in this case many dairymen pasture some, but are careful that the stock is well fed with dry hay before being turned out, so they will not eat so ravenously.

If pasturing must be practiced, it will usually pay to have a man with the cows all of the time. Only recently we saw a case where a man had a purebred herd.

Some young bull calves were turned into a lot where the alfalfa was very poor and other grasses good. It was not thought at all dangerous to let them stay out all night, but in the morning one calf was dead that had already been sold for $150. That much money would have bought a lot of hay, or have paid for an extra man to herd them for several months.

Similar cases occur almost daily; and it is apparent that as yet we have not come to the full realization of this loss.

Whenever pasturing of alfalfa, in order to realize the most from foul grasses in the first cutting is mentioned, it always brings to mind our favorite hobby, the silo, for if there is both a sure way of preventing the bloat and at the same time utilizing the weed infested first cutting of alfalfa, these cylinder-shaped storages surely fill the bill.

As yet we have only started to appreciate the silo in this respect, but it is not hard to determine, that in the future our bloat troubles will be very largely overcome by this method of pasturing.

CARE OF SHEEP AT WEANING TIME

On my farm the early spring lambs are weaned the middle of June, when they are three and a half months old. Some advocate allowing them to continue to run with the ewes, but in my experience I have found that the latter will do better without the lambs, and with plenty of good pasture the lambs will make better growth if they are separated from their mothers.

The lambs are separated from the ewes. The distances between the ewes and lambs is made so great that neither can hear the other bleat. This reduces the worry considerably and makes the weaning process easier.

The ewes require some attention at this time. They need to be carefully dried off in milk giving. To do this my ewes are put in the shortest pasture on the farm and allowed to have no grain until the milk secretion has dried off.

During the time the ewes are being dried off in the milk flow I look them over carefully every two or three days to see if any need milking out. In case they do I stand astride their necks and reach down either side to the udder and milk them out very quickly. I regard milking them out an important matter, and not to be neglected under any circumstances. In this regard my reason for being so particular is that it is the best milker and the most desirable mother ewe that is most persistent in milking, consequently I would not have her udder spoiled for a little lack of care at this time.

As soon as the milk secretion has ceased the ewes are turned on good pasture. They are not fattened but are put into a plump condition preparatory to entering the breeding period and the winter. The lambs, on the other hand, are pushed rapidly as quick maturity is a matter of considerable importance if the best profit is to be made from them. The lambs make a better growth while young at less cost per pound, and all things considered it is more desirable to get them off to market at the earliest possible moment.

My ewes are allowed the run of good mixed pasture with access to a little clover, and they do exceedingly well with this and a little grain. The flock is provided with plenty of pure water all the time, which is very essential, as a discouraging outcome is apt to be the result if the animals are compelled to drink unclean water or made to go without water for a time during hot weather. The lambs are fed a small quantity of oats mixed with bran as an appetizer and are allowed the run of a fresh clover pasture, which keeps them growing nicely. The animals are regularly supplied with salt. A flock of sheep salted regularly do far better, remain in a more thrifty condition, and make a greater gain, than if supplied with this element at irregular intervals.

Protecting the animals from the heat is an important feature. They do not suffer greatly from the heat provided they have plenty of shade and fresh water. I am fortunate in having shade trees and running streams of good water in my pastures. The sheep bunch up in the shade during the hottest portion of the day and graze in the late afternoon and early morning.

If there are no trees in the pasture, shade can be provided cheaply by setting up a double row of posts four feet high and eight feet apart each way. A smooth wire is then fastened along the top of the posts and some leafy branches placed across the wire. Frequent change of pasutre is a great help with sheep, and particularly with lambs, which are rather particular about what they eat. If they are turned into a new pasture after a shower it will be surprising to see how thoroughly they will go over the grass again, even though it has been cropped closely before. Sheep are very timid animals and they should always be kept as quiet as possible.—W. H. Underwood.

Send in your orders for Butter Wrappers. $3.00 per thousand.

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving Time, Shrink and Freight

Union Stock Yards Company of Omaha
(LIMITED)

HOG CLEANLINESS THE KEY TO SUCCESS

Several livestock men were recently discussing the various phases of production of livestock and the statement made by one of the party that hogs were the most cleanly in their habits of any livestock brought forth pitying, incredulous smiles from these of the party not directly in touch with the swine-raising. But even though it is hard not to associate the time-worn expression, "dirty as a pig," with the hog itself, the fact remains that a hog will go out of his way to keep himself and his quarters clean. He thus invites the virtue of cleanliness in his handling that tends to make his development the most profitable of any livestock production.

Cleanliness simply means thrift and economy in production. Freedom from internal and external parasites that not only keep the animal in a condition of low vitality and thrift, but also mean many extra mouths to feed, would add thousands of dollars to the annual income of swine growers the country over. There is no other animal that is subjected to the filth in living conditions that is so generally accorded to the hog—his production is in the rut of long established, but poorly founded precedent of method, and the time has come when the demand for the products of the hog makes it imperative that those methods be employed which mean that every pound of feed given to hogs will bring back full value in pork products—without the usual attendant "side lines" of lice, worms and disease.

There are very few swine ailments that cannot be avoided by the practice of sanitation and cleanliness. The swine pens and yards should be so situated that they will not present the continual appearance of cranberry marsh, but should be well drained and on high and sloping land. The sleeping quarters should be dry, free from drafts and well ventilated. This is doubly important in the cases of sows with young litters. Improper sleeping facilities will often cause pleura-pneumonia among the young pigs which invariably proves fatal or worse yet, causes stunting and consequent unprofitability.

The houses should be cleaned out at least once each week and the pen and house thoroughly disinfected with a good coal tar disinfectant. And it should also be known that lime is one of the best disinfectants known, and a liberal use of this easily obtainable product is one of the best possible safeguards to the health of the hog herd. Its low cost is no criterion by which to judge its worth.

The use of a plentiful amount of good dry bedding is a very inexpensive way of increasing the gains made. There is no feeder who can make a dissatisfied hog gain as desired, and there is no better way on earth to make a hog contented than to keep a good warm bed ever at his disposal. Good sanitary concrete wallows should be provided if possible in lieu of the long-tolerated, disease-breeding mud wallows. By keeping the water in the wallow sprinkled with a coal tar disinfectant or crude oil disease breeding germs may be kept out.

External parasites such as lice and mange are a very effective means of keeping away a profit on hog feeding. Not only do they draw their existence from the hog, but they lessen the animal's resistence to disease. The only positive and economical way to keep these pests under control is to keep them out of the herd. This may be done by dipping or spraying with any standard coal tar preparation, or by the use of rubbing post oilers. And the important thing is to keep the pests off the hogs—don't let them get a start.

By far the most costly of the elements that tend to make hog production less profitable is the prevalence of worms. All hogs have worms—some more, some less. It is a proper part of the cleanliness campaign to eliminate them by the use of some good worm expeller, formulas for which are ever available for any farmer. But it is much more effective, as well as a great deal cheaper to keep ashes, charcoal and lime, together with some good condition powder or worm preventative ever before the hogs in self-feeders. The added growth and profit will repay the cost many times over.

Go fifty-fifty with the hog. Be as clean with him as he is willing to be for himself. If you will give him opportunity he will prove that it will take less time and work to keep him clean than it will to keep clean any other farm animal.

The popular hog of the day is the big type, heavy-boned animal that matures early and possesses easy feeding qualities. The up-to-date breeder takes every advantage to bring his big types to the largest size possible at a given age. The producer of the up-to-date big type should not overlook the bone-building feeds that are so indispensable to the hog's requirements. It is surprising how much mineral matter growing animals will eat and how they do stretch out after doing so.—The Duroc Bulletin.

Kill All Flies! They Spread Disease

Placed anywhere, **Daisy Fly Killer** attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for **Daisy Fly Killer**

Sold by dealers, or 6 sent by express, prepaid, $1.00.

HAROLD SOMERS, 150 De Kalb Ave., Brooklyn, N. Y.

Grain Production is the Thing That Counts

A LETTER to Nichols & Shepard Company, of Battle Creek, Michigan, will bring to you the experience of seventy years of success in the making of threshing machinery exclusively—success that is of value to you.

Grain threshing is a game where no manufacturer can fool with side lines, and at the same time build a machine that is always on top. Nichols and Shepard Company has confined its efforts and resources to threshing machinery alone, longer than any other manufacturer in the world.

The result is that the Red River Special, with its "Man Behind the Gun," the Beating Shakers and the Big Cylinder, stands at the very top of the list as a grain thresher.

It Saves the Farmers' Thresh Bill

Write us for information about the "Junior" if you want a machine for your own use. Write for circulars.

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines
Battle Creek Michigan

HOW TO OPERATE A BABCOCK TESTER

(Continued from page 5)

placing for about 15 minutes in water heated nearly to boiling.

Having placed the bottle opposite each other in the centrifuge (whirling machine) close the cover and turn the handle from about five minutes at the speed indicated in directions furnished with the machine. Allow it to stop gradually and when motion has ceased, open the cover, and with the piette add a small amount of hot soft water to each bottle without taking the bottle out of its pocket in the machine. Having filled the bottles to the bottom of the neck, close the machine and run it at full speed for one minute. Add more hot water, bringing the fat up into the neck between the top and the bottom of the scale of figures. Close the machine and run it for another minute or two, for the third and last time.

The fat column, when read, should be light brown and uniform in color. Black or colored sediment mixed with the fat is caused by too strong acid, or the milk or acid being too warm when mixed. To avoid this, less acid may be used, or the milk may be cooled if the milk or acid is over 60 to 70 degrees. Light colored, curdy material, sometimes seen floating just beneath the fat column, consists of a little fat mixed with some other milk constituent which was not fully dissolved by the acid. Where there is much of this it will impair the accuracy of the test and make it read too low. To avoid this the milk may be warmed, or a little more than the usual amount of acid may be used.

The test bottle, pipette, etc., should be thoroughly washed and cleaned immediately after the test is completed. Delay usually means more work later, or a subsequent inaccurate test.

The test of one day a month is usually accepted as the average test of the cow for that month, and the amount of fat she gives during the month is found by multiplying the number of pounds of milk produced during the month by this per cent of fat. If the cow has given 600 pounds of milk during the month and the test is 4.9 per cent, her fat poduction is found by multiplying 600 by 4.9 and dividing by 100, which is 29.4 pounds fat.

By a little practice and careful attention to details, the testing of the milk will become quite a simple operation. Like so many things that seem difficult of attainment, particularly new things that are explained, it is the getting started that is important—the actual doing is comparatively easy.—Hoards Dairyman.

THE VALUE OF ROOT CROPS

It seems to me that we should grow more root crops as stock feed for some of these are very rich in feeding value and well adapted to almost all soils. Such crops as mangel wurtzels, and turnips, give a big return per acre of some of the best feeding crops on the market. Any little lot in which we have failed to put some early crop will answer the purpose and the harvesting of the crop is a matter of comparative ease.

Mangel wurtzels if sown in drills two feet apart in the fore part of June and cultivated will bring from twenty to thirty tons of rich feed per acre in the average season. They are very good feed for both cattle and sheep being grown extensively for that purpose alone in certain sections. We usually dig or pull them out if possible before the first freezes as there is danger of poison being in frozen beets. A cool, damp cellar or pit answers the purpose of storage for winter. A beet chopped into small pieces and fed to the cow with other rations at feeding time seems to add tone and zest to the herd.

Turnips make another fine stock feed. The hogs especially relish them when once they find they are good and will make high priced meat out of them. Any feed of this sort seems to be especially relished by all kinds of stock during the winter season in the absence of silage or other succulent feeds. It is not necessary to cook these if care is taken not to overfeed. Just throw in what they will clean up and this will always keep their appetite whetted for more.

We believe the average farmer should grow more root crops for the stock especially in the absence of a silo. They make a cheap and very nutritious feed, supply the want of winter succulence and thus in a great measure cut down on the hay and grain bills.—Oliver Heck.

Cutter's
Refined
Germ-Free
Anti-Hog Cholera Serum

Produced in the Most Up-to-date and Best Equipped Anti-Hog Cholera Serum Plant in the World.

Does away with the risks that necessarily attend the use of a serum that is not germ-free.

It is 20% more efficient, measure for measure, than the old type, "bloody" serum, is much more quickly absorbed, does not discolor the flesh at point of injection, and carries no liability of producing abscesses.

80 c.c. of Cutter's Refined Germ Free Serum is just as efficient as 100 c.c. of the best old type "bloody" serum.

But we make the old type serum, and do the job so well that though **we have sold several million c.c.** since we started production in 1917, there has been **not even one complaint of failure** to protect, or of bad effects following its use.

So, whether you use the old or the new kind, insist on "Cutter's," for in either case you will be getting the best that can possibly be produced.

Remember, a serum may be "clarified," or "clear," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. **Cutter's Refined Serum is not only clear but it is Germ Free.**

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They furnish lumber for man's home and fuel for his fire.

CHEESE MAKING IN THE HOME WITH FIVE GALLONS OF MILK

(Continued from page 3)

taken not to tear and break off bits of curd as this will result in loss of both fat and curd.

Period III.—Heating and Stirring.

Stirring.—As soon as the curd is cut, the whole mass should be gently stirred. This can best be done with the hands, though the agitation must not be violent enough to break the cubes of curd. During the process the temperature should not be allowed to fall below 84 degrees F.

Heating.—After ten minutes stirring, gradually apply heat and raise the temperature to 98 degrees F. This should not be done more rapidly than 2 degrees in five minutes. Stirring should continue during this process, though the danger of breaking the curd is much less now, as it toughens with the heating. After a temperature of 98 degrees F. is reached the curd need only be stirred about every ten minutes.

It is important to keep the temperature at 98 degrees F. during this stage.

When to Draw Whey.—The cooking should continue till the particles of curd, when squeezed in the hand and the pressure suddenly released, will fall apart. At this time the whey is drawn.

Another test of when to draw the whey drain off as it is expelled from clean hot iron. If it draws out in fine threads ¼ of an inch long the whey should be drawn.

Period IV.—Cheddaring.

After the whey is drawn, the curd is let to mat together in a mass about two inches deep and four inches wide. Provision should be made to let the whey drain off a sit is expelled from the mass. As soon as the curd fats together it should be cut into blocks and piled. Every ten to fifteen minutes the blocks are repiled, putting the bottom ones on top, and turning the parts exposed to the air in. This should continue till the curd takes on a velvety appearance and a piece of it touched to a clean hot iron will draw out in fine threads two to three inches long.

During period IV the temperature should not be allowed to get lower than 90 degrees F.

Period V.—Grinding or Milling.

This process can probably best be done with a sharp butcher knife. The blocks of curd are cut (avoid tearing) into strips about ½ inch square and one to two inches long. After cutting, the curd is piled up, stirred enough to prevent it matting together and kept covered so that the temperature does not fall below 90 degrees F.

After a few minutes, the pieces of curd take on a peculiar nutty flavor and become mellow so that the fat may be removed by pressure. When this point is reached the curd is ready for the next step.

Period VI.—Salting.

Kind of Salt.—A rather coarse salt is preferred for cheese. This requires a longer time to dissolve and as a result seems to penetrate the curd more thoroughly.

Amount of Salt.—The amount of required salt depends on several factors, though on the average a shade less than an ounce will be sufficient.

Method of Salting.—Spread the curd out thin, put the salt in a shaker, and apply about 1-3 of it at a time evenly all over the curd, and stir thoroughly after each application.

When the salt is thoroughly dissolved, the curd takes on a mellow silky appearance and is then ready for the press.

Period VII.—Pressing.

After salting, the temperature of the curd should be allowed to drop to 78 degrees to 82 degrees F. and the curd put into the hoop.

A round cotton cap-cloth, the size of the hoop, is wrung out of hot water and placed in the bottom of the hoop. A circular bandage the size of the hoop is then fitted in the hoop with its lower edge turned under evenly for about 1½ inches. The curd is next placed in the bandage and the bandage trimmed so it will fold down on the top of the cheese 1½ inches. A cotton cap-cloth is placed over the top of the cheese, the followers put on and pressure applied.

Dressing.—After the cheese has been in the press 45 to 60 minutes it should be taken out, turned, the bandage and caps straightened, and the whole surface sponged off with a cloth wrung from water as hot as the hand can stand.

The pressure on the cheese in the hoop should be gentle, uniform and continuous for at least twenty-four hours. If the cheese can be left in the hoop for forty-eight hours the extra time will improve the texture.

Period VIII.—Curing.

Cheese should be cured in a room having a temperature from 65 degrees to 70 degrees F. During the first few days the cheese should be turned on the shelf each day. After this, turning once a week will be sufficient.

For best results the cheese should be dipped in molten paraffin any time from the third to the fifth day of its curing. This will prevent the loss of moisture and will produce cheese of higher quality than if left unparaffined.

The cheese should cure for at least six weeks, two months is better.

EASY FARM BLACKSMITHING

Welding.

This process is done by bringing together two or more pieces of iron so that the parts may be made into one. To weld perfectly and successfully one must have favorable conditions which are essential to the principles on which welding depends; a small clean fire, a white heat, absence of dirt and slag. Keep the iron high in the fire, and get the pieces in a pasty condition. After the pieces to be welded together have been properly scarfed, place them in a small coke fire at a slow heat. After they become red, gradually quicken the draft until the fire is a white heat. Watch your pieces carefully, notice the changes taking place. See that they are heated only where they are to be welded. Keep your fire solid underneath, rake just a little coke over your pieces with the poker. At first, drops of melted iron fall, and soon the whole is in a pasty condition. It has now reached the supreme moment, when a second more will burn or spoil the iron. Remove quickly from the fire and weld. Tap lightly and quickly with the hammer. For perfect welding or iron, a flux is not necessary.

Flux.

A flux is a substance placed upon iron or steel when it is below the welding point. This forms over the outside of the part a fusible glass upon which the fire has little or no effect, the welding heat developing underneath. The substances used are white sand, borax and often the two are used together with iron filings mixed with them.

Hardening and Annealing.

Steel when heated red hot and suddenly cooled by plunging in water, oil, brine, mercury, etc., becomes hardened and rendered more or less brittle and elastic. When the steel thus hardened is heated red hot and cooled slowly, it does not have this acquired hardness, and becomes soft and malleable again. When red hot, it is often placed in ashes or lime, which gives good results.

Tempering.

Usually applied to mean a combination of hardening and annealing. This is practically applied to all steel goods in order to give them such a degree of hardness as will best fit them for resisting wear and tear. This is applied by first heating the steel to a cherry red and suddenly cooling one-half the length heated. Shine thoroughly the hardened part and allow the colors to run into it. The temper is obtained by observing the colors as they run through the steel, and cooling quickly when the desired color appears. Charcoal benefits the steel when heated in it. Oil makes the steel more elastic. Water and brine are good, but the steel is made more brittle. Acid is sometimes used for making steel very hard.

Colors In Tempering.

The following gives the color degree of tempering for different classes of tools: Very pale yellow, lancets, dentists' instruments; straw color, surgical instruments, razors, lathe tools; golden yellow, wood-workers' chisels, penknives; brown, scissors, shears, knives; brown (dappled with purple), axes, planes, etc.; purple, cold chisels, knives, etc.; bright blue, springs, etc.; full blue, screwdrivers, fine saws and augers; dark blue, hand saws and large saws.

Cast Iron And Wrought Iron.

The following characteristics enable one to recognize cast iron: Effect of hammer, breaks by a blow and is brittle; structure is coarse granular, like sand; at a white heat it falls to pieces. When given a blow or dropped upon the floor it gives a dull sound. Wrought iron, when struck with hammer flattens and bends by the blows; structure is fibrous, like wood; when heated above a white heat it can be welded; when struck has more ring than cast iron.

Distinguishing Steel.

Will break by a blow after it has been hardened or by a flaw; structure is fine granular; can be hardened and tempered; when dropped upon the floor or given a blow, it gives a sharp ring.

The four important principles of blacksmithing are drawing out, upsetting or thickening, bending and welding. The amount of work that can be done in this line on the farm depends entirely upon the skill of the individual. Do not meddle with the horses' foot unless you are sure you know what you are doing. Better leave that for a regular blacksmith.—Gardner B. Willis.

WHITEWASH FORMULA

Slake ½ bushel of good lime with boiling water and strain. Add seven pounds of salt dissolved in warm water. Boil three pounds of ground rice to a thin paste and stir in while boiling hot (if rice is not available, use ordinary starch). Add ½ pound of Spanish whiting. Dissolve 1 pound of glue by soaking in water, then heating in a double cooker until dissolved. Add this to the above mixture. Thin to proper consistency and apply hot, if possible. It will require about 5 gallons of water for thinning. One pint of this will cover about one square yard. If a very white color is desired, a little ultramarine blue may be added to neutralize the yellow. Various tints may be made by the addition of suitable dry colors.

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David F. Houston, U. S. Secretary Agriculture, recently made the following statement: "I cannot emphasize too strongly the urgent necessity during wartime of increasing the production of butter-fat and of saving it for human consumption."

POULTRY

HINTS ON SUMMER CARE OF POULTRY

By H. W. Sanborn, Extension Poultry Husbandman of Utah Agricultural College.

Take special care during the warm months of summer to keep the hen houses and chicken coops free of mites, and hens and chickens free from lice. They do very much better. Roosts and chicken coops may be rid of mites by thoroughly painting them with crude oil. Good dust baths for the hens and use of lice powders or Blue Ointment will keep down the lice on hens and chickens. For detailed instructions send for Government bulletin number 801. (Lice and Mites on Poultry.) Clean the houses and coops often, and spray with disinfectant to keep them sanitary, thus keeping the hen and chickens healthy and vigorous. A two per cent solution of any of the coal tar products like Zenoleum, Creolin, and the like make and excellent spray.

Keep the chickens growing by proper and sufficient feed that they may mature as quickly as possible. The pullets will then lay much earlier, when eggs are highest and largest returns are possible. A good growing mash for chicks may be made as follows:

10 parts bran, 3 parts barley chop, 3 parts corn chop, 4 parts beef scrap.

It should be kept before them all the time in self-feeding hoppers. Be sure to keep up the proportion of beef scrap in this mixture unless skim milk is accessible to the chickens all the time.

Skim milk or beef scrap is necessary for the most rapid growth. Feed a scratch grain liberally at night that the chicks may fill their crops before retiring and have a good supply of food to digest during the night.

Where possible, we urge that the growing chicks be furnished free range and, if possible, where shade is available. Exercise, green food, and shade in a cool place during the heat of the day tend to promote vigorous and rapid growth.

Eggs should be preserved in water glass or lime water while they are cheap for winter use when eggs are highest in price. If this is properly done you will have good, cheap eggs to use and you can market your fresh eggs during this time when prices are very high. About fifteen dozen eggs should be preserved for each adult member of the family. Use them liberally. Use more poultry and eggs in the home to save more beef and pork for our armies.

Cull all weak chicks or chicks that do not mature rapidly, using them on the table or marketing them. They will never make profitable egg producers. Keep all good, vigorous, healthy pullets and year old hens for egg production the coming winter. All eggs it is possible to produce are going to be needed and they will bring good prices.

Sell or can all male birds, or use the growing cockerels as broilers, except those that will be wanted as breeders another season. Sell all hens two years old and over as they begin moulting this summer and fall. Keep them for egg production until that time. They will be profitable until they start to moult. Confine the male birds from the laying hens and produce infertile eggs. They keep better, and are more satisfactory. Gather the eggs twice daily. Keep them in a cool place and market them as often as possible.

Let us one and all give our poultry a little better care and attention and practice better poultry culture this year than ever before that we may obtain a much larger production of egg per hen and larger net returns to ourselves. If we will only do this we will gain new courage and forge ahead rapidly another year and more fully meet our national need and our Government's appeal in this the greatest crisis of all time.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending June 11th.—Cattle—Receipts, 2,634; market, steady; choice steers, $10.50@12.50; good, $8.50@10.50; feeders, $6.50@8.50; choice cows and heifers, $8.50@10.00; fair to good, $5.50@7.00; canners, $4.75@5.25; feeder cows, $4.50@6.00; veal calves, $8.50@9.50; choice bulls, $7.50@8.50.

Hogs — Receipts, 995; market, steady; tops, $16.00; bulk of sales, $16.00.

Sheep—Receipts, 8,696; market, steady; lambs, $17.00; ewes, $9.00@10.50.

Kansas City, June 12.—Hogs; Receips 19,000; lower; bulk 16.30@16.55; heavy, $16.40@16.65; packers and butchers, $16.30@16.60; light, $16.25@16.50; pigs, $16.25@16.75.

Cattle; Receipts, 8,000, strong; prime fed steers, $17.00@17.80; dressed steers, 13.00@16.50; western steers, 14.00@17.80; cows, 6.75@13.50; heifers, 9.00@15.25; stockers and feeders, $8.00@14.50 bulls, $8.50@11.50; calves, $8.50@13.75.

Sheep; Receipts, 7,000; weak; lambs $16.00@20.10; yearlings, $14.00@18.00; wethers, $12.00@16.00; ewes, $10.00@14.50.

Omaha, June 12.—Hogs—Receipts, 15,000; market 10 to 20 cents lower. Heavy, $16.20@16.80; mixed, $16.20@16.35; light, $16.30@16.40; pigs, $12.00@16.00; bulk of sales, $16.20@16.35.

Cattle—Receipts, 7,800; market steady, under 10 to 15 cents lower. Native steers, $12.50@17.75; cows and heifers, $9.50@14.50; western steers, 9.75@14.50; Texas steers, $8.00@12.50; range cows and heifers, $7.75@8.70; canners, $7.75@9.50; stockers and feeders, $8.00@12.50; calves, $8.00@13.00; bulls, stags, etc., $8.50@12.50.

Sheep—Receipts, 18,000; market steady. Yearlings, $16.50@17.50; wethers, $14.50@16.75; ewes, $11.00@13.50; lambs, $16.20@20.50.

STRAW SPREADERS

K. J. T. Ekblaw.

For many years there have been farmers and crop experts who have advocated the application of a thin mulch for winter wheat, for in every case where it was applied really noticeable beneficial results were to be obtained. The Illinois Experiment Station in some recent tests found that winter wheat, on plots given a protecting covering of straw, yielded about fifty per cent better than those left unprotected. Practical farmers have obtained just as satisfactory results in all winter wheat regions. Aside from the value of the straw as a mulch it has a distinct value as a fertilizer, and increases the humus content of soils.

It has been only recently, however, that the straw-spreader has received anything like the attention it deserves. Farmers are gradually waking up to the fact that a thin covering of straw makes a splendid mulch that will increase crop yields. Too many farmers in the past have made it a practice of disposing of their straw piles by the simplest method—touching a match to them and letting them go up in smoke—and incidentlly letting a hundred dollar bill or two go up with it at the same time. The constantly increasing demand for greater efficiency in agriculture is bringing about a coincident demand for strawspreading apparatus, and it will be only a matter of a short time before a strawspreader will be as standard an article of farm machinery as a plow or drill.

The simplest straw-spreader is, of course, a pitchfork in the hands of a strong-armed farmer, but it is not the most efficient. Spreading straw in this way is better than not spreading it at all, but the disadvantages are obvious. It means a great deal of hard and unnecessary work, for dry straw is too loose to handle well, and wet straw is so heavy and sticky that it can be deposited only in bunches. Pitchfork spreading can not be done evenly; there will be spots of ground left entirely exposed, while other spots will be covered with so thick a layer that any growing thing beneath is smothered. Of course where the straw is used only for its fertilizing value, absolute evenness of spreading is not of material importance, but the hard work is just as evident.

It is only of recent years that the development of the mechanical straw spreader has occurred. Several types are on the market, and the demand for them is growing with remarkable rapidity. One manufacturer reports that he can by no means keep pace with the demand from almost all sections of the country. Small fruit and and truck growers raising crops requiring a straw mulch, find in the straw-spreader a wonderful labor-saver; of course it covers everything in its path, but when it is necessary to uncover plants, as in the case of strawberries when the growing season is at hand, the uncovering can easily and readily be done by hand.

One of the types of spreaders in common use is one which can be attached to the rear of a hay rack. In principle it is a sort of a combination of the endgate seeder and a manure-spreader. The attachment is made to the rear of the frame of the rack and the carrier platform extends forward on the floor of the rack. The main drive shaft is driven by chains running over sprocket wheels clamped to the spokes of the wagon wheels. The straw carrier, an endless apron affair, is driven by a counter shaft, and carries the straw to the two spreader forks, which are mounted on vertical shafts driven by bevel pinions meshing with bevel gears on the drive shaft. These forks rotate rapidly, and any kind of straw can be scattered over a width of from ten to twenty feet.

This type of machine is not strictly a one-man machine, for the carrier does not extend the full length of the rack, and consequently requires some manual handling of the straw to unload from a long rack. It has the advantage however, of being attached to a rack which can carry a large load.

Another type of machine which is proving popular is the straw-spreader attachment or manure-spreaders. A straw rack is built up on the sides of the spreader so that the depth to which it can be loaded is increased several feet. A second beater is mounted just above the regular beater and is driven from the main drive sprocket. While the load that can be carried in this machine is smaller than in the type previously described, it is strictly a one-man machine and the entire load can be spread simply by starting the horses and putting the machine in gear, the operation being exactly the same as when spreading manure.

Unfortunately, the manufacturers of manure-spreaders utilizing straw-spreading attachments are limited, so that the application of this idea is not universal. However, it is a very efficient contrivance, and the farmer who needs a machine which can be utilized for spreading, either straw or manure separately, of both simultaneously will find this an excellent outfit.

One of the biggest problems of utilizing straw in this way is the loading of the spreader. Investigations indicate that this is the most expensive part of the operation and some better means of loading than ordinary hand pitching should be devised. The suggestion has been made to use a small stacker, with a swinging arm, and to reverse the stacking process, i. e., remove the straw from the stack to the spreader. Such a contrivance will probably enable the loading to be accomplished much more rapidly and economically than when it is done by hand.

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LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 47 JUNE 22, 1918

The Farm Home and Its Surroundings

Laura Emma Mack.

Good home surroundings are one of the farmers best assets. Better home make for a happy and contented citizenship where the environments are made attractive and the people of the farm live in peace and enjoy the blessings that Nature has so bounteously provided.

The proper adornment of the home grounds with trees, shrubs and vines gives a charm and beauty which are interesting and pleasing to the passer-by as well as to the occupant of the home. I think there is no more pleasing looking farm home than one that has a well kept lawn properly adorned with shrubs and trees. Trees in the barn yard, along the lane and a few in the meadow and along fence rows add to the beauty as well. This is the kind of a farm that the passerby looks at twice and then turns to take the third look as he passes on. Plants not only express beauty but restfulness as well. Their gradual change with the season makes a pleasing effect and relieves the monotony.

The farm and buildings may be poor, but with the trees and shrubs there they add greatly to the value of the place. Trees not only add to the beauty of the farm but are a protection to the buildings and stock. A house and barn exposed to the hot sun and cold winds, is a poor place to call a home. Some farmers do not believe in having trees in the field or along the fence. In the cultivated field I'll agree, they are of little use. But the meadow or pasture, I think, is lacking without a few trees at least for the stock like to have protection from the hot sun in summer.

If trees are not planted for the beauty or protection they give the place, they ought to be planted for their value. The space they occupy and the time required to plant them is not lost as they add to the value of the place and they are grown into valuable timber as our forests disappear.

The critical period in the life of a tree is when it is transplanted to its permanent location. In removing the trees a greater portion of the smaller roots are lost. You bring out the larger roots but the tiny roots are the ones that gather the greater supply of food for the plant. In order that the roots may supply the proper amount of moisture and food to the top, the top should be pruned heavily.

The excavation prepared for the tree should be of sufficient depth to allow it to be set as deep as it stood in the woods and large enough for the roots without bending them. The earth in the bottom of the hole should be loosened. In replacing the soil over the roots of the tree, a thin layer should be placed in contact with the roots and thoroughly pressed down in order to bring the particles of soil in close contact with the feeding roots of the plants. The hole should then be filled and the surface left slightly above the level of the ground.

The old custom of scattering trees and shrubs throughout the lawn is giving way to the planting of these along the border adjacent to walks or drives, where the effect is fully as good or better, and the difficulty in mowing around them is obviated. Where time can be taken to care for them, beds of flowers have a very pretty effect and, if care is taken to plant with reference to their blooming season, they will furnish beauty and fragrance the entire summer. Trailing vines, either annuals or perenials, may often be made to cover otherwise unattractive surroundings and give a pleasing effect.

The planting of trees bordering driveways often lends a charm that nothing else can equal.

There are two sides to the question of beautifying the rural home. The first is the desire to please and add to the comfort of the family and the other is to attract would-be-buyers. The first appeals to the refining tendencies of the place as a family home, and the latter to the pecuniary interests of the owner. Many do not realize the vast difference between the prospective chances of selling a home with the charms of beautiful surroundings, compared with the farm or home where no system or incentive to beautify and improve have been indulged.

Let me tell you of a small farm some fruit trees and a modest cottage home. It was well located, but through neglect had been allowed to run down. There was a good crop of weeds, the trees needed triming, the house needed painting and fence repairing. It was finally sold under a forclosure. The new owner went to work and cleaned the place up, it was in the spring when he purchased it. A new fence was built and painted. Trees were trimmed. The house was given a good painting. It was a few months later in the fall of the same year the place was sold for several hundred dollars more than the purchase price in April. If there is real money value in such improvements as related above, then, there must be

(Continued on page 16)

SUGAR BEETS

Bannock County, Idaho, June 16.
Utah Farmer:

In the last issue of the Utah Farmer I notice an article that advises early irrigation of sugar beets. I have not grown beets until last year but I have always been told to hold the water off and not irrigate early because it would make the beet grow sprangled instead of long and tapering.

I am wondering if the putting of water on the beet fields before the beets get deeply rooted would not cause them to make a lighter tonnage.

J. L. B.

It is true that many very good beet growers have made a practice of holding irrigation water off until, as is sometimes expressed, "the beets lie down" which means that the mid-day and afternoon heat would wither the leaves. It was believed that by withholding the water, the beet would develop a long tapering shape.

It will be noticed that the article in last weeks' issue of the Farmer spoke of the hot, dry weather. Last season much the same as this year, the weather turned very warm and the moisture was quickly evaporated and those who studied the question carefully found that in many fields, the small beet plants were suffering, not alone from lack of moisture but also because the soil became so very hot.

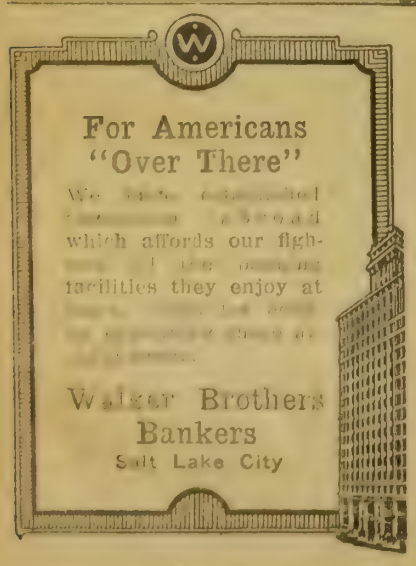
The beet plant thrives best in a moderately cool atmosphere.

When the surface soil has so little protection against the very hot sun, the ground becomes unduly hot, under conditions such as we experienced a few days when the thermometer registered around a hundred or higher. After the plants get large enough so the foliage will shade the soil somewhat, the hot sun would not have the withering and stunting effect that it has early in June. Last summer, we noticed two fields where the irrigation water broke away and flooded part of a beet field nearby. Much to the owners surprise, the part of the field where the irrigation water broke over, showed an improved appearance very promptly. The better appearance was noticeable all season and, at digging time, there was not the sprangled, forked beets that were expected. Keep in mind, however, that there is a vast difference between a heavy irrigation that will soak the ground and a light wetting which seemed to supply wanted moisture and also, in our minds, it did something else equally as important,—it cooled the soil temperature.

In some of the valleys which lie at higher altitudes, such as is found in your region and also in many other desirable beet growing districts, the same rule might not apply. The past week, we studied fields that had been irrigated and made comparisons with similar fields that had not been irrigated and the results are about the same as were had last year.

Flooding, is bad. The irrigation furrows should be shallow and every other row will generally suffice. The water should be run through quickly, which means that long irrigation streams are not so good as short rows. A plow furrow will serve as a cross check ditch and thus better regulate the flow of water by making shorter irrigation furrows. It is important to follow the irrigation with the cultivator about the second day after putting the water on. Don't let the soil crust and cause cracks to open. Perhaps it is best to not call this a regular irrigation but just a light wetting up. In any event, if in serious doubt, turn the water into a few rows and try it out. Different soils require different treatment. In the higher valleys, the irrigation may not be needed so soon. Perhaps more frequent cultivation will establish a capillary movement of soil moisture from below that will serve to cool the ground and moisten the plants sufficiently.

In any event, let every one forget that fallacy about it being necessary to stunt the beet plant in order to get a good tonnage. Stunting is just as bad for the beet plant as it is for the pig and most every one knows how little profit there is in feeding a stunted pig. Then, don't forget to cultivate promptly. Beets may be made to grow pronged but that is caused only when irrigating is overdone early or when the water-table is raised close to the surface.



CAN "MATCH THE PRESIDENT" IN RAISING SHEEP

When a flock of sheep appeared not long ago on the green sward of the White House grounds, a desire to "match the President" in helping to increase the country's mutton and wool supply was manifested by many persons whose responsibility covered big lawn, golf courses and city parks.

In the opinion of officials of that department, which is charged with the stimulation of the sheep industry, many public parks, golf courses, and private lawns in the country may be so situated that they can profitably be made to serve as grazing grounds for sheep. It is believed that their use for grazing sheep would have not only a sentimental value but a practical one. But owners and persons charged with the care of such property are advised to investigate the matter thoroughly before they embark in the enterprise of raising sheep. Sheep raising involves much more than placing the animals in good pasture. It has its technical side, and at present, when every pound of wool and every pound of meat is needed, it is felt that exprience bought at the price of either wool or meat would be too costly.

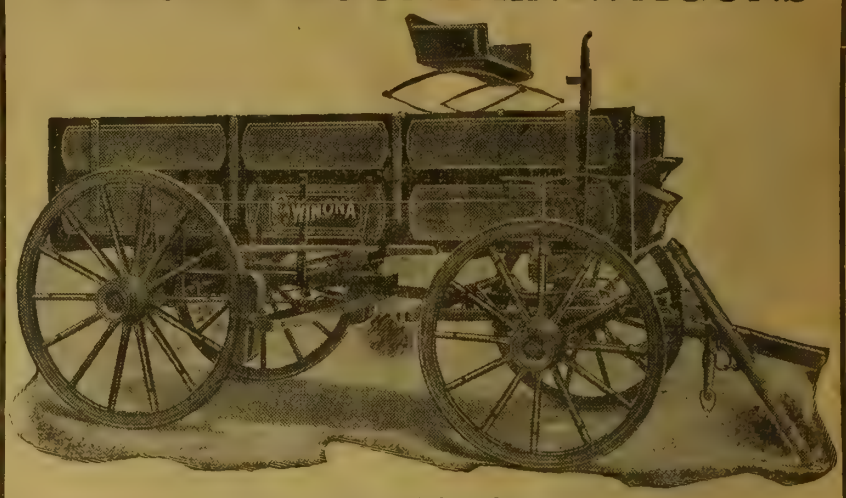
Sheep now cost approximately three times as much as in normal times. Good commercial sheep at present sell for from $16.00 to $20.00 a head.

In any sheep enterprise provision must be made for the guarding or fencing in of the flock, for not only are the animals prone to stray from home pastures, but they are favored prey for dogs which annually inflict great losses on the industry. Winter care must be provided for, and feed and sheltered quarters must be available in cold weather. Persons who desire to raise sheep are advised to enter the industry with a view of staying for several years at least. The gross annual returns from the ewes of breeding age may be expected to range from $8.00 to $15.00 a head, depending upon the percentage of lambs raised, the weight of the fleece and the value of these products. The fleece from one sheep averages 5 to 8 pounds and is now selling for from 50 to 65 cents a pound. The ewes with good management will each raise a lamb. The lambs a 5 months will weigh approximately 60 pounds and will be worth 15 cents a pound and over. The useful life of a sheep is about six years.

Used in Public Parks.

Flocks of sheep have been maintained in public parks in New York and Boston, and a flock once was grazed on the grounds around the Washington Monument in the Capital. The use of sheep in lawns and parks has been extensive in England. The labor-saving value of sheep is important, for they are neat and effective grass cutters. Sometimes, too, they eat shrubbery and flowers, but this danger can be met by a watchful shepherd or other safeguards.

WINONA MOUNTAIN WAGONS



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SALT LAKE CITY, UTAH.

SHEEP ARE PROFITABLE

Mr. H. J. Schnaidt, writing for the Rural World, gives the following 30 reasons for raising more sheep on irrigated farms in the Pacific Southwest:

The initial investment in foundation stock is small.

Expensive buildings are not necessary.

Expensive machinery is not required.

Less productive land can be utilized.

Sheep will eat and relish almost every class of weeds.

By eating "ragwort," the source of "pictou" cattle disease is eliminated.

By cleaning out the fence rows sheep destroy the winter protection of many injurious insects.

Due to the fineness of the mastication of their food, very few weed seeds are found in sheep droppings.

Sheep are of great value in clearing brush land.

Sheep are dual-purpose animals.

Crop yields are increased by the constant and uniform distribution of rich manure.

The excreta of sheep is rich in nitrogen and potassium.

Less plant food is removed from the soil by sheep than by grain crops.

The cost of maintenance is small.

Sheep make profitable use of fodder left in cornfields after corn is harvested.

Sheep can be made marketable without grain.

Wool and lambs are more easily transported than grain crops.

Rapid and frequent monetary returns.

Reasonably large percentages of profits under normal conditions.

Wool and mutton advanced in price before the war, and a sudden drop in value is not to be expected.

Less labor is required on a sheep farm than on a grain farm.

Labor on the farm is more evenly distributed throughout the year.

Sheep require little care except during the usual slack periods.

Children, as a rule, like sheep, and this is a good time to develop future shepherds.

A flock of sheep on the farm furnishes a fresh supply of meat at any time of the year.

Because of the comparatively low cost an animal, sheep are more easily improved than most other types of livestock.

Sheep are more prolific than horses and cattle.

The western sheep ranches are rapidly disappearing, and it is up to the small farmers to make up the deficiency.

The population of the United States is increasing, while the number of sheep is steadily decreasing.

As a patriotic duty in the present world crisis, we must produce more wool and mutton.

KEEP RAISING COLTS

This is the time to stay in the colt-raising game. Many horsemen are so dubious about the future prospects of the horse industry that the number of colts in some districts have been materially reduced. While it is true that in cities a vast number of motor-driven vehicles are doing the delivery work formerly done by horses, and that the tractor and the truck have invaded the rural districts, yet the prospects are that within a short time there will be a great demand for horses than the available supply can satisfy. This is due to the fact that large numbers of horses are being slaughtered in war and at the same time horse production abroad has practically ceased. The person who raises colts at this time will without doubt realize prices for them at maturity which will repay him well for the feed and care involved. In view of the fact that a number of people are discouraged, it would seem that now is the time to stay in the game. The old rule that it does not pay to follow the crowd might be applied here, and if the crowd is inclined to quit the horse business, it is very possible that the few who have nerve enough to continue will be well repaid.

HOW WEEDS REDUCE CROP YIELD

Considering the principal crops in the United States, it is estimated that weeds reduce the yield of corn by 10 per cent; tame hay, 3 to 16 per cent; potatoes, 6 to 10 per cent; spring grain, 12 to 15 per cent; winter grain, 5 to 9 per cent; pasture, 5 to 50 per cent.

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VOLUME XIV. LEHI, UTAH, SATURDAY, JUNE 22, 1918 No. 17

Alfalfa Weevil Control

The alfalfa weevil is causing heavy losses this year.

Last year, only two districts in Utah, so far as we have observed, had serious losses. Because of the late, backward season in 1917, the larvae did not appear in considerable numbers and therefore, the hay crop suffered less from the depredations.

There has been such persistent, definite information on control methods given out through the press, particularly the agricultural press and also in bulletin and circulars from the Experiment Stations, supplemented with efficient demonstrations by the County Agents that almost every farmer in Utah knows how to proceed in reducing loss to a minimum.

The weevil, like practically all other pests and diseases will not be entirely eliminated. Smallpox has scourged the human race for these many years but control methods have been worked out so that no community now fears the loss of life or the widespread of the disease as was once the case. Not even the most skilled or the most optimistic physician hopes to entirely eradicate the disease, however.

Hog cholera formerly levied a costly tribute against the swine grower and, in early days, about the only remedy against having the entire herd wiped out was to rush the unaffected animals off to the nearest market. Today, control measures are available to even the remote communities and cholera is no longer a dangerous risk for the pork producer.

All of these control measures or remedies costs time, money and much labor.

The alfalfa weevil is in much the same category.

It is now a matter, largely, of working out the most efficient and most economical method of control. The Utah Farmer has followed the various methods of combatting the weevil, from year to year and has observed definite, profitable results from mulching, through cultivating and brushing the soil, immediately following the harvesting of the first crop, when the weevil appears. The larvae can't stand being rubbed into dry, dusty earth. The heat and dust soon kills him.

Those who apply what is commonly termed "swabbing" which means turning the irrigation water on, as soon as the first cutting is off the land, and then get onto the field with a brush drag or similar implement and "swabbing" the larvae into a muck. Both of these methods are efficient in control; both have, their drawbacks however.

A few days ago, the editor and others studied results that were obtained by Mr. G. I. Reeves, of the U. S. Department of Agriculture, who is in charge of the entomological division at Salt Lake where detailed investigations have been carried on to determine, if possible, an even more efficient method of alfalfa weevil control. In the experiments which the writer had the privilege of studying spraying was used. About two and one-half pounds of arsenate of lead was dissolved in 100 gallons of water and after thoroughly mixing, a spray pump, with Bordeaux nozzles attached, was used to apply the liquid to the alfalfa, which, at the time of the attack, was just approaching the blossom stage. A moderately fine spray was used. On the check strips where no treatment was applied the top of the alfalfa was almost white. Scarce-

(Continued on page seven)

Increase the Meat Supply

G. R. Hunem.

The output of meat on the average farm can be increased by the prevention of waste, by the use of more economical methods, and by the increase of production.

The amount of waste in animal production reaches very large totals. For example, it is estimated that 15 per cent, or $45,000,000, of the annual value of our egg crop is lost on account of improper methods of handling. Of this amount one-third, or $15,000,000, is due to "blood rings." Blood rings are dead embryos, and an embryo can only develop in a fertile egg. Hens which do not run with male birds do not lay fertile eggs, but they lay just as many eggs as if the males were with them. The presence of male birds, and that alone, causes all the blood rings in the eggs of commerce. Practically all of these eggs are produced on farms, and farmers can therefore, add $15,000,000 to their income annually and to the national food supply by eliminating the fertile eggs from trade.

A much more important waste is the unnecessary loss of young animals. Take pigs for example. When a sow farrows from 5 to 10 pigs, the owner does not grieve if three or four of them die. Probably 30 per cent of all pigs farrowed alive die shortly after birth from various causes. If the litter does not number more than 10, the sow can readily raise them all. Why, then allow four or five pigs to die from lack of attention or suitable quarters? Most little pigs die because they become chilled at or soon after birth. Sows should therefore have dry quarters for farrowing, sheltered from winds, with plenty of bedding. This does not mean expensive quarters, but dry and protected ones. Such shelters can be built at very little expense.

Although the domestic animals of the United States are doubtless quite as healthy as those of any other country, the waste from disease and parasites is enormous. Attention has frequently been directed to the condemnation of carcasses and parts of carcasses in federally inspected abattoirs. Large as is this direct loss in our meat supply, it is insignificant when compared with the actual losses on farms. Hog cholera, Texas fever, tuberculosis, infectious abortion, scabies and other parasites cause losses amounting to hundreds of millions of dollars annually, not only directly in the deaths of animals but indirectly in diminished vitality and feeding value of those which do not succumb.

The eradication of these diseases and parasites is commanding the extensive use of public funds. Their prevention is a matter of sanitation, largely in the hands of the average farmer.

The use of more economical and rational methods of breeding, raising and feeding livestock is imperative for the maintenance of the industry on high-priced lands. Grain can no longer be fed to meat animals with a lavish hand. Hay, fodder, silage and pasture are the cheapest feeds and will carry animals along with a maximum of grain. The use of straw and roots is coming. The farmer who keeps the frames of his young animals developing on these cheap feeds, withholding the full-grain ration until the finishing period arrives, will profit by such a practice.

The education of the farmer, to appreciate duly the importance of live-

(Continued on page fourteen)

It is estimated there are 400 loads of manure in this pile.

Fertilizer Hoarding Peaceful But Vicious

By Ben R. Eldredge.

Yesterday I visited a farm where the owner showed me, with some pride, over 400 loads of manure. Most of this was lying against the barn. It had settled down until the boards forming the side of the barn were bulging inward. I was amazed at his apparent indifference to the crimes he was committing. The manure had been piled so that a high per cent of its value had leached away, which was one crime. Letting it lie unapplied to the land year after year was another crime, and placing it where it was doing damage through its weight and the promotion of decay was another crime, and under the war conditions that have been existing for over a year, all of these crimes were worse than ordinary.

A few weeks ago I visited a neighborhood where immense piles of fertilizer were common. The land had already been seeded and these great piles of manure were destined to lie as they were for at least another season. How large many of these piles were can be judged from the cut made from a photograph. This pile of manure had been accumulated through the cleaning out of the feed yards with a tongue-scraper. It represented, perhaps, several years accumulations, or, rather, a part of several years' accumulations, for this pile was on the west side of the feed-yard and a pile almost equal in bulk was on the east side of the yard. It was common in this section to bring in numbers of stock cattle and feed them on the farms during the winter, returning the cattle during the summertime to the mountain ranges. The farm where the photograph was taken was worth $150 an acre and hay and grain always has a value for local feeding. Granting that the crops already had been excellent, without the addition of a great deal of ferilizer, doesn't it seem a shameful waste that land of that value should not be developed to its highest degree of fertility, when the fertilizer that would bring such a result was lying on the farm losing its strength as months passed by? The lack of help for scattering this manure was not on account of war conditions, for the pile had accumlated during the past few years of peace. It was peaceful but vicious hoarding.

I am reminded of a certain acquaintance who had been raised under city conditions and had finally found his home on one of our beautiful mountain ranches. There was a hollow near the yard which was used as a dumping place for all the manure from yards and stable. There was an accumulation there from many years. It was a great hay section and my friend was rather troubled to handle his fine crop of hay. Standing on the hill near his home, looking over the beautiful valley of meadow I said to him one time: "I should think it would pay you people in this valley to get some manure spreaders and put this old rotted manure as a top dressing over your meadow." He seemed to almost groan but finally replied: "Oh, dear, if we were to do that we would get so much hay we could never get it put up in the world." I have wondered about this many times. My own experience with hay is that I never had so much but that I could have taken care of a little bit more.

DAIRYING

HALF FED COWS

R. J. Simmons.

There are good reasons to believe that a good many have not been getting the proper returns from their dairy cows nor pocketing the large prices for butter to which they are entitled. One of them is that they do not know their cows and are going at it blindly. Another reason is that they are not furnishing the cow the proper material for feed and are not furnishing feed of such kind and in such proportions that she can use to advantage. The third is that they have not been running the cow machine at its full capacity. No one of these men would think for a moment of feeding his hired hand an insufficient amount of food. In fact if a hired hand the first day he comes to a farmer's table proves to be a mincing eater he would at once suspect that he was paying him more money than he was worth. A farmer likes to employ hands that are good feeders. He would never think of furnishing just enough rations to keep the machine going but not enough to develop his full working capacity. He would not want to feed his hired hands so that he would be starving hungry at ten o'clock however hungry he might like to see him at noon. He would say to the good wife that the table must be better supplied for he was not getting full work out of the man and so was losing money. No man would think of eating insufficient food taking barely enough food to enable him to do say half for two-thirds work. No more would he think of trying to thresh with only sufficient horse power to run the machine and is inevitable waste. He gets pay for only the amount of force that actually does the threshing. The trouble of a great many feeders of milk cows is that they give them enough to run the cow machine but do not give them enough to run it at its full capacity. There is quite as much difference between the capacity of different cows as milk machines as there is between different men or different horses. Each man must be fed according to his capacity if he is to do full work. The same is true of horses of the threshing machine and the corn binder and of anything else that does actual work and brings things to pass. Hence it is neccessary to study the cow.

The amount of product that a cow turns out is an indication of the amount of raw material she needs. Some cows will get along well on thirty pounds of silage and eighteen pounds of clover or alfalfa. Some will require more silage, more clover or alfalfa or both. Some of the heavier milkers will require more feed in the shape of bran, oil meal, cotton seed meal or shorts.

Give the cow all she wants to eat. If she does not pay for it sell her and get one that will. The man who, because feed is high, skimps on feed, skimps his pocketbook and cheats himself just as much as he does the cow. For the cow will take enough to run the machine anyhow and to that extent she is simply a manure factory—a converter of hay into manure which may not be hauled out. It is only what is required to run the machine that brings in profit. The smaller the proportion of what is required to run the machine the greater the profit. For example, if we represent the cost of the food of support by 10, the capacity of the cow by 20 and we feed her but 15, but one-third of the feed goes into the milk, but if we run it at full capacity then one-half goes into the milk. In other words, the farmer who feeds the amount represented by 20 gets twice as much profit for that feed as he would if he fed but the amount represented by 15. The addition of one-third more feed to the quantity, the quality being the same, doubles the profit. Just how much additional feed must be given to each individual cow must be decided by the owner himself and it is fortunate that he cannot do this without observing, thinking, drawing conclusions and acting upon them. And above everything else, remember that the ration must be balanced—must contain the material needed to produce milk.

ROOT CROPS FOR DAIRY COWS

C. H. Sapp.

Dairy cows and other milk-producing animals respond well when there is something in the way of succulent feed furnished as a greater or less part of their daily ration. Indeed the dairy cow can not be a really profitable milk producer in winter unless she has something of this nature. Where the number of cows in the herd is large enough to warrant the building of a silo, there is nothing quite equal to silage as an economical succulent feed. But there are many people who keep but six or eight cows or less who do not want to be to the expense of building a silo; to whom it might not be profitable to do so, but who would like to grow something that could be used as a green feed in winter. A resort to root crops may be the wise thing for such a one.

The turnip of either the flat or globe varieties, is the quickest grown, making a large crop in a favorable season in from 50 to 90 days. But it is the poorest in quality of common roots grown for feed. About 90 per cent of it is water and it has a principle within it which is apt to impart an undesirable flavor to the milk unless great care is used in the manner of feeding. We have, however, fed turnips to our cows in somewhat liberal quantities without unfavorable flavor results. We fed them after milking, not more than one-half bushel to each cow per day in two feeds, and in connection with liberal quantities of grain and first-class hay. Turnips do not keep well, becoming dry and pithy after some months. They should be fed during the fall and early winter.

Another valuable root crop is the mangel-wurzel, superior to the above named in several respects as a succulent feed for the dairy cow. It is a member of the beet family and quite similar in many respects to the sugar beet. Under like conditions of culture it will yield more tons to the acre with a considerably larger proportion of nutrients than the turnip, although it is somewhat more exacting in its cultural requirements. The cattle like the mangels better and they never give an unpleasant flavor to the dairy products. Indeed, it is said that the feeding mangels improves the flavor of the milk, producing, when fed in connection with proper grains and choice legume hays, the best milk that can be made with any succulent feed.

A sandy or loamy soil is desirable. This should be fertilized, and the fitting of the ground should be very thorough. The seed should be planted not later than corn planting time or somewhat earlier if possible. The young plant, like the garden beet is quite hardy and will endure much heavier frosts than the corn plant. We plant in drills, the rows being such distance apart as will be suitable for the use of our cultural tools, 2 feet not being too close for the good of the mangels. The plants should stand from 6 to10 inches apart in the row. The seed can be planted with sufficient accuracy by hand if the plantation is small. Where it is more extended the garden seed drill is a necessity for rapid and accurate planting.

With the mangel, as with the garden beet, what appears to be a single seed is really a number of seeds enclosed in a rather hard shell. So from each bunch of seed planted there will grow from two to six or more plants. If all of these were allowed to grow to maturity we would have several dwarfed, knotty, mis-shapen roots instead of one large and desirable one. To avoid this undesirable condition the plants must be thinned to a single one at a place. This means hand work for no tool has yet been invented to do this work. While the young plants have been growing to the thinning size the weeds have also grown ,and as it seems natural for weeds to grow faster than useful plants, we are met with another condition that calls for hand work, for there seems to be no other way to get rid of them especially those which grow close to the young mangel plants.

THE COW AT CALVING TIME

There is no time in the whole milking period that has such an important bearing on the establishment of a standard of production for the year, as the periods previous to and following calving time. It is understood by many, but not by all, that if a cow is allowed from six weeks to two months in which to rest from one lacation period to the next, she will yield more than when milked continuously up to the time of parturition. We know the effect upon ourselves when our faculties are continuously at work, especially when the nerves are brought into play. And it is a fact that parturition vitally disturbs the nervous and physical activities, especially the forces of digestion. The act of calving brings stimulation to the milk producing organs, which is the only natural and effective means of stimulating milk, recretion and it is a serious mistake not to make the most of it. It is necessary to handle the cow in such a manner as to derive full benefit from this stimulation, while it is yet present, since with most cows it rapidly wears off if not utilized.

Rather liberal feeding, which actually builds mild nutrients on the body, during the last few weeks of the lactation period and while the cow is dry, is the secret of preparing the cow for the succeeding lactation period. This may appear to be wasting feed, but this is the important period, when it is most valuable. During the last few weeks of the milking period, grain may be fed at the rate of one pound to each two pounds of milk produced, reducing at the period when the cow is to be dried. A good many have trouble in drying off persistent milkers by the plan of skipping milkings, but when less than 14 pounds of milk is yielded, daily milkings can be discontinued at any time without serious difficulty if accompanied by a reduction in the feed. The udder will become filled, but the fluid contents will soon be absorbed. When dry, about eight pounds of grain should be fed daily, more if the cow is in poor condition. It would not be profitable to feed inferior cows in this way. These, however, can not always be detected from the others unless all have an equal chance, and weeding is practiced based upon the records of production. The grain ration should be bulky, laxative, and nutritious, having slightly more carbohydrates than a milk ration, with a nutritive ratio of about one of protein to seven of carbohydrates and fat equivalent. If a high percentage of fat is sought, even more liberal feeding of grain will be useful.

During this period, protein and fatty tissues are actually being stored upon the body to be used in the production of milk before the cow is in shape to digest and assimilate a full ration. A cow is like a toboggan, in that the higher she starts at the beginning of her slide, the faster and longer will she keep running. It is just as serious to crowd the appetite during the first month after calving as to neglect to lay on this supply of nutrients. The cow should be kept hungry. If fed all she will eat, harm will be done, and a check to her flow is the natural result of going "off feed," as most cows reach their limit early by this sort of handling.

A week before calving, reduce the grain ration to four or five pounds,

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Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circulars showing different styles.

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When you answer the advertisements always mention the Utah Farmer.

feeding mostly bran and oats. On the day of calving, a pound and a half of epsom salts, lukewarm water, and good hay are enough for a well conditioned cow, although a good bran mash may be useful. Begin the next day to feed lightly, and after four or five days introduce a grain mixture gradually. Increase this gradually about a fourth of a pound per day. Do not expect a cow to handle all the feed called for by her yield of milk. If she has been properly conditioned, and is coming to a good flow from one month to six weeks is early enough to get her on full feed. For from three to six months she should gradually lose the flesh stored up.—F. C. White, Connecticut Experiment Station.

DAIRY PRODUCTS AND UTENSILS

Cleanliness should be the watchword in all dairies regardless of the number of cows kept. The cow shed should be well ventilated, have plenty of light and all windows and doors screened in the summer to keep the flies from the cows while the milking is being done. It should be constructed for the cleanliness, comfort and health of the animals; the stalls should be the right length and the mangers the correct height for the comfort of the cows; the floor should be of some good material, some preferring cement, but a floor in a stable is damp most of the time, regardless of good drainage and bedding. The cement is always damp as one of its characteristics is to hold moisture and it is also very cold in the winter and causes more rheumatism and other ailments in stock than most farmers give it credit for.

The milker and cows should both be clean before the milking is begun. A special suit for milking should be worn. Some put on old dirty clothes to keep their other clothing from being soiled, but such a practice should not be permitted. The milker's hands should be clean and he should not be allowed to smoke during milking, as the smoke is apt to taint the milk and it is also dangerous, if there is straw near. The milking should be done the same time each day.

The milk pails should not be made of wood as milk will penetrate the wood and soon become very insanitary, even if they are well scoured and scalded. They should never be used for any other purpose and should be washed and scalded and put in the sun as sunshine makes them sweeter.

Some dairymen advocate the use of a strainer, that has gauze and absorbent cotton as a filter. No doubt it would do the work all right but as the cotton and guaze couldn't be used twice, it appears that to use as much cotton as that would take in a year, in just one dairy and multiply that by several thousand (providing several thousand dairymen used it) as scarce as cotton is at the present time, such a practice would not be conserving the nation's cotton. On the other hand, a well-made strainer with fine mesh wire is as good as any. It is very convenient to have one made to fit the supply can of the separator and the cost is about $1.00.

The separator should be kept thoroughly clean or the cream will be strong and make an inferior grade of butter. After it is washed it should be scalded and placed in the sun. Put the separator where there is no dust. As we go about the country we often see parts of a separator on benches or hanging on trees or fences near the road to sun, and the dust of the road on them so thick that you could figure on them. We wonder which is the more dangerous, the original germs or germs that are in the dust.

Milk and cream should be kept in a cool place in hot weather and should not freeze in the winter as freezing injures the quality. Not only milk and cream but butter also should be kept in a very clean place, free from any odors such as a damp musty cellar, poor cellar drains and even vegetables. Any odors whatever taint dairy products and lower their quality.

The churn in the summer should be thoroughly cleaned and scalded(if the churn is of wood) then cold water poured in to cool it. By scalding the churn it prevents the butter from sticking to the sides. After the butter is churned it should be washed and salted. For light salting put in three-quarters of an ounce of salt to a pound of butter, but one ounce is the amount usually used. One and one-fourth ounces to a pound of butter is considered as heavy salting. None but the best salt should be used. Never guess at the amount of salt but weigh the butter then add the proper amount of salt.

In preparing the butter for market it should be packed in the best new, clean packages. They should be uniform in size and appearance. A package packed carelessly often condemns the best butter. If the butter is to be packed for future use in the home, the sides and bottom of the tub or whatever it is packed in should be rubbed with salt. Then put in a qauntity of butter, not more than can be firmly and evenly pressed to the sides, and continue until the tub is filled to within an inch of the top. Lay on a cloth wet with brine and one-half inch larger than the tub. Work the edges down and cover with about an inch of salt. Cover this with another cloth, put a tight head to the tub, then make a hole in the head and fill it with brine and keep it plugged tight. Keep it in a cool, dry atmosphere until wanted and the butter will be found good. Care should be taken in choosing the article the butter is to be packed in.—M. P.

TO CONTROL SCOURS IN CALVES

M. H. Fohrman.

The practice of allowing calves to remain with their dams until large enough for weaning has been proved unprofitable where there is a market for milk or butter fat. Consequently most farmers who sell the product of their cows have adopted hand feeding for raising calves. The economy of this practice goes unchallenged, but there is constant danger of causing digestive troubles in the calf.

The digestive organs of the young calf are adjusted to receive warm milk direct from the udder in small quantities at short intervals. Of course, it is impractical to imitate such conditions when feeding by hand, but they should be duplicated as nearly as possible to avoid scours. Overfeeding, irregular feeding, dirty pails, cold milk, sour milk, or old milk will cause trueble. These, however, can be avoided.

Constant vigilance is the price of healthy calves, and the feeder must always be on the lookout for indications of scouring. At the first indication of disease he should effect a quick cure, before the conditions becomes chronic. Where calves are fed from the pail, it is easy for the feeder to watch tails and hocks for indications of scouring. As soon as trouble is detected, the feed of the calf should be reduced at least half. Administer a dose of castor oil in warm milk by means of a small drenching bottle. This will tend to remove all irritating substances from the bowels. Feed should then be gradually restored to the normal amount, and formaldehyde solution should be added to the milk at the rate of one teaspoonful per pound of milk fed. This formaldehyde solution should be made up as follows; One part of formalin (40 per cent solution of formaldehyde) to thirty-one parts of water. If prompt improvement does not follow this treatment, repeat the dose of oil, and accompany it with another reduction in the quantity of feed.

The most critical periods in the life of the young calf are at the age of four to six weeks, when the feed is changed from whole to skim milk, and six to ten weeks, when the calf is beginning to eat grain and hay.

Calves are always greedy, and for this reason over-feeding should be avoided. This is true particularly when alfalfa hay is being fed, as it is exceedingly palatable, and the animal is apt to gorge itself beyond the capacity of its digestive ability.

Your need of a

DE LAVAL

CREAM SEPARATOR

is greater right now than ever before

These are the days of the full milk pail.

But if you are trying to get along without any cream separator, or with an inferior or half-worn-out machine, the more milk you get the more cream you lose.

And no farmer can afford to lose even a little cream when butter-fat is selling at from 40 to 50 cents a pound.

With butter-fat at present prices, and our country begging us to stop waste, "cream slacker" methods of skimming milk must go.

Get a De Laval right away and put all the cream in the cream can.

There is no other cream separator that can compare with the De Laval in clean skimming, capacity, ease of operation, freedom from repairs and durability.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

BREEDING STOCK FOR EUROPE

J. E. Doreman, Western Dairy Division.

It is quite generally understood that at the close of the war we will be called upon to help replace the depleted dairy herds of Europe. According to recent reports the supply of milk and its products in Great Britian and France is only two-fifths normal, while for many months we have been receiving reports of excessive slaughter of dairy animals for food purposes. This growing scarcity of dairy animals is not confined to Great Britian and France but undoubtedly is general throughout Europe. Every country must realize that necessity of a milk supply and will try to retain a minimum number of milk cows on the farms. However, under urgent demands for food every surplus animal will be slaughtered and in many instances whole herds will go to the butcher.

We have no definite idea as to just how much breeding stock we shall be called upon to furnish and at what prices. yet a casual survey of conditions would indicate that the demand will be large and the price good.

Reports are received that buyers are already arriving with orders for dairy cattle for Western Europe. European buyers will want our best, or in other words only such animals as have proven their worth as shown by careful production records. They will want only well developed animals, and it behooves every dairyman to feed, develop and care for his young stock so that when the time arrives he will be able to compete successfully in the sale of stock to European buyers.

Every dollar that is spent to arm a soldier or a sailor, to feed or clothe one; every dollar that is spent for munitions or cannon, for coal to drive our warships, and transport supplies, must come from the Treasury, and the Treasury has no source from which to obtain money except the people of the United States.

Thousands die every year form overeating—don't dig your grave with your teeth.

THE UTAH FARMER
Devoted to Agriculture in the Rocky Mountain Region.

Combined with the
Deseret Farmer and Rocky Mountain Farming.
Established 1904.

Entered as second class matter in the postoffice at Lehi, Utah.
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OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers' Association.

OUR GUARANTEE
We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

Cultivation is what counts at this season of the year. It pays and pays you well.

It is not enough to take off your hat to the flag—take off your coat and roll up your sleeves.

If there is a real shortage of labor, that man or farmer does not seem to make much noise about it. State officials say they are able to supply all the farm labor needed.

There are many little improvements that might be made on the farm that would add to the efficiency of the farm management. For instance, a gate may be off its hinges and have a wire for a latch. It could be quickly remedied but neglected it necessitate extra time and trouble in opening and closing the gate every time it is used, and if the gate is near the barn it may be used many times a day. Look after these matters and make the necessary changes to increase the efficiency of your efforts.

WHICH CAMP;

America today is divided into two camps—Americans and Alien Enemy.

Those who are not for America are against her—enemies all.

Those who are idle, selfish or even indifferent are Aliens—alien to American interest.

Only the workers, "comrades in this great enterprise," bear the honored name—Americans.

PREVENT GRAIN LOSS FROM FIRE

Every effort should be made to prevent loss of grain this year. The harvesting will soon commence in some sections of our state and we want to urge upon farmers, threshermen and all concerned to avoid the loss of grain that comes each year from fire. Just be a little more careful than usual. When grain is stacked clean off all vegetations and rubbish around the stack and reduce the fire risk. There are many ways that cause fire in our grain and every effort possible should be taken this year to see that no grain is lost from fire.

KILL THE GRASSHOPPERS

Reports are reaching our office that grass hoppers are doing damage to crops in many places. If you have not had previous experience in fighting this pest get in touch with the county agent at once and let him tell you how to kill them. They can be controlled but you must fight them and do it carefully and in the right way. An article in this issue gives you directions and suggestions as to how they do it in some communities of our state. Grasshoppers are a pest and should be destroyed. When food is so badly needed, pests of this kind should not be allowed to destroy it. It is worth while, to use every available means to rid your farm of these pests.

ADVERTISING SELLS BREEDING STOCK.

Sometimes men who have ability to breed and raise pure bred livestock are not able to sell them. This does not mean there is no market for them, for there is sale for all good livestock. Just how buyer and seller can be brought together is a problem to some. Advertising is the modern way of doing it. One very successful livestock man says "skillful advertising in good agricultural papers is the most effective means by which the breeder can place his stock before the buying public." Too many livestock men know the production game but do not know enough about advertising. Persistent advertising brings results. When a buyer read or sees the name of a certain firm or breed each week, that name or breed becomes so firmly fixed in his mind that when he wants to buy it has a great influence on him. Advertising will sell your breeding stock.

PROFITS AND THE WAR

The government is at work, but to the average farmer it seems slow, to stop profiteering during the war. What the farmer asks is that the price of the necessities they must buy shall be on a parity with the price fixed by the Government for the products they sell. There seems to be many cases where the war conditions has made it possible for profits to be taken and prices advances when they should not and would not have been under ordinary competive conditions.

Prices are allowed to be advanced and the consumer must pay them when the outsider or buyer can see no reason for such an advance. No one should be allowed excess profits, every one is entitled to a fair profit. To profitees during war times is like taking blood money and the government should put a stop to it.

REPLANTING

In a few places and with certain crops the seed has not germinated on the stand is so poor it will not pay to cultivate. Replanting can be done with a crop such as beans. Care must be exercised in selecting the seed to get a variety with as short a growing period as possible. In some places it may not be advisable to replant, but every acre should be made to produce all the food possible.

Where a farmer's feed is short corn or some quick growing grass might be planted. Every one should know best how to secure the most from his land. Our suggestion is to remind you of the importance of food production and to make every acre produce, idle acres are slacker acres and replanting should be done if a crop can be produced.

SILO WILL HELP PRODUCTION

Production and profits can be increased with plenty of good ensilage. All animals, to do their best, seem to require some succulent food. The silo is becoming more important all the time, livestock men who are useing them, seem to think they cannot secure the greatest profit from dairying and feeding unless they use silage or some other succulent feed.

The value of the silo is emphasized at a time when all feed is high priced. More feed can be saved and put to better use with the silo than in any other way. A silo will help any farmer to ge more out of his crops, for a silo means more feed and more feed means more livestock and more livestock means better profits and more fertility for the land, as fertility is increased, more food stuff will be produced.

KEEP THE HORSE BUSY

Too often we do not figure the cost of the horse by the number of hours he works. The idle horse is usually a dead expense. The way to make him pay is to keep him busy at some productive work. The horse that works 1,000 hours a year and costs $100 for feed, shelter, etc., is cheaper than the horse that costs but $75 for keep and works but 500 hours. The former costs 10 cents per hour worked, while the latter costs 15 cents. Wise use of the farm horse to his fullest working capacity is thus of vital concern to the farmer, for while the horse is not working the expense of his keep still continues.

The way to make a horse profitable is to keep him busy.

IMPORTANCE OF DRAINAGE

We are asked to help increase production, to supply our own food and that of the Allies. It would seem that some are apt to over look the importance of draining our water logged land to help in this work. Every acre of ground should be cultivated, new land is being made to produce, why not drain the thousands of acre lying idle on account of over irrigation or seepage.

It is no experiment to make this land productive, when drained this year it can be cultivated the following year. What must not be over looked is the fact that this kind of land is some of the best we ever had, it will produce in abundance again if properly drained. Drainage is a war measure and what is more, the land will continue to produce when peace comes again. Utah has thousands of acres that should be drained, plan now, so that next year this land will be helping to feed the world.

TIME TO SPEED UP

For a time there was a little excuse for some people because of their inactivity in helping with war preparations. That time is now past and every man, woman or child that is not for the government is against it, there is no half way place for any one. The time has come to drop the word "slacker" and apply "traitor" to every man and woman in the country who is not interest upon some work useful to cause for which the country is at war.

There is no excuse for idleness now upon the part of any American able to perform some part of some task needed to promote a speedy, successful termination of the war in which we are engaged. This applies to women as well as men, and it applies to boys and girls who are able to work.

Mistakes may have been made by well meaning persons, some of the speed we expected from our officials of the Government has not been realized, but it is now time to speed up. The spirit of inaction can no longer be tolerated. The time for action is here, and there must be a speeding up that will make up for the time that has been lost.

GOOD JUDGEMENT

Farmers are often requied to use their judgement and decided questions that are important in their farming work. Where business men have a few risks and a few opportunities for using good judgement, farmers have many. There are more unknown quantities in the mathematics of farming than in the equations of the ordinary business man in the town or city.

The farmer must use good judgement as to just when the seed should be planted. Valuable seed is sometimes lost when planted too early and subject to frost, or it may be injured by drouth if planted too late.

He must be careful and sell at the right time to get the best returns. In arranging the capital, in buying the things not raised on the farm, in cultivation, harvesting, storing, etc., the farmer must exercise his best judgment.

Poor judgement may mean the loss of a summers work. A farmer is often called upon to judge also what he should not do, and a man who can generally exercise good judgement is very fortunate.

ALFALFA WEEVIL CONTROL

(Continued from page three)

ly any foliage yet remained; 10 days later the larvae of the weevil had almos stripped the tip buds and also the foliage and it had begun to feed upon the stems. Immediately alongside, the sprayed alfalfa was green, and appeared to not have been checked in its growth. Some of the foliage showed a little ill results from the larvae but the crop appeared to grow right along and the tonnage looked to be almost normal. It is likely that some of the larvae came out after the poison has been applied and, of course, some escaped but the results were so strongly in inevidence that it made one feel that a fresh, encouraging mile post, in pest control had been reached.

When asked about the danger of poisoning the hay, Mr. Reeves stated that analyses showed the amount of poison to be so very small, relatively, that no injurious effects would follow. Only about 100 gallons of liquid, to which had been added two and one-half pounds of arsenate of lead, was used upon one acre of alfalfa; therefore the hay would be fed without risk. Last year, similar experiments were run and no injury resulted from feeding the hay.

Another field was studied where the hay had been removed and the stubble sprayed. This, too, appeared to be successful. On some hillside or gravelly soil, the methods of control first mentioned can not well be practiced. The spraying method will apply anywhere. It appeared, without having definite figures at hand, that the increased tonnage, through the larvae control, would about offset the actual cost in labor and material, in applying the spray.

Mr. Reeves has not yet reached conclusions; he has several fields under experiment. The Utah Farmer feels that there is much encouragement for the alfalfa grower in the results thus far obtained and we shall follow the work with renewed interest.

The Farmer will be glad to hear from readers who have had experience in alfalfa weevil control.

NEW MILL-FEED MARGINS

A new schedule of maximum prices which mills may charge for wheat by-products has been announced by the U. S. Food Administration. The margins show a general reduction downward compared with those previously in force.

The maximum bulk of bran per ton bears the same relation to the price of wheat as formerly—38 per cent of the average cost to the mill of a ton of wheat. The price of flour middlings which before was $9.00 per ton over bran prices has been reduced to a $2.00 differential. Red dog has also been reduced to a maximum of $2.00 per ton over the price of bran whereas the former difference was $15.

Mixed wheat feed prices, according to the new schedule must not be more than $1.25 per ton over the price of bran. The former difference was $4.00 per ton. These new price margins are the outcome of an investigation into present methods of milling. With the larger percentage of flour now being milled from wheat, the quantity of flour middlings and red dog is considerably less and these products have been placed in the same by-product group as shorts, standard middlings, gray shorts and gray middlings. The bulk price of all these feeds must not exceed bran prices by more than $2.00 per ton.

Although these new price margins are already in force, the Food Administration emphasizes that they are for bulk carloads at the mill. Persons buying in small quantities at retail should consider freight, dealer's profit and cost of sacks. The last item alone is at present between $5.00 to $6.00 per ton. Both jobbing and retail profits have been limited however to a moderate fixed maximum and as soon as mill feeds now in dealers' hands have been moved, the new stocks milled after May 7 will reach farmers on the basis of the schedule announced.

The total amount of wheat mill feeds is admitted to be small in proportion to the demand and the most pracical means of reducing feeding costs lies in a more general use of the coarse grain by-products of which there is now an abundance. Mill prices of hominy feeds have lately declined by from $25.00 to $30.00 per ton, rye and barley feeds in proportion. Oil meal is particularly low in price when compared with other feeds on a nutritive basis.

Far-seeing farmers may advanteously plan to secure their winter supply of feed in September and October when danger of spoilage is past and avoid the uncertainty of deliveries during the winter when the demand for feed usually exceeds the output of the mills.

REPAIR BINDER BEFORE HARVEST

E. W. Lehmann.

Every wheat farmer has experienced the trouble which a broken or a poorly working binder can cause in harvest field. A small bolt or key worth not more than one cent may cause a loss of an hour or more to the whole harvest crew. A worn or broken casting may require a trip to town, or perhaps a loss of several days to replace. Rust on the knotter, or a dull twine knife may seriously delay the work of the machine during the first day or two.

In view of the necessity for saving all of the wheat possible and for conserving time and labor this year. I suggest that farmers take extra precaution to place their binders in running order before wheat harvest begins. Farmers who placed their machines in repair immediately after harvest last year probably will not have much trouble. Others should go over their machines and repair worn or broken castings, and order those parts which are not kept in stock by dealers. The binding attachment probably causes more loss of time than any other part of the machine. It is the most delicate part of the reaper, and consequently it is the easiest to get out of repair. Even where the machinery has been properly housed during the winter it will be advisable to inspect the binding attachment especially, and remove rust with emery cloth or fine sand paper. The twine knife should be sharpened with a whetstone or a milled file.

Special attention should also be given the cutter bar and sickle. Extra guards and sickle sections should be provided for emergency after all broken and worn ones have been replaced. Some farmers have found it advisable to have an extra sickle in addition to extra sections. A worn pitman will cause lost motion and consequently impair the operation of the sickle. Sproket wheels, chains and gears, will require some attention as well as elevators and canvasses. There are usually broken canvass slats which will require attention. The reel should be inspected to broken slats and loose bolts.

Farmers who have least trouble with their binder usually take it to the field a few days before they begin harvesting and try it out by actual operation. It is almost impossible to test the binder attachment and the elevators without running wheat or straw through the machine. Most delays caused by the binder usually occur during the first few hours or the first day or two of harvest, depending on the time required to place the machine in good running condition. Such delay can be practically eliminated by the forehanded farmer.

Electric Cooking

What a Wonderful Thing in Hot Weather

So cool, so clean, so excellent in the results it gives—and yet so economical

Delightfully Cool

All the heat from an electric range goes into the cooking. Your kitchen stays at a cool and comfortable temperature all the time you are preparing meals—as pleasant a room as any in the house.

Perfectly Clean

It is not alone the direct heat from ordinary cooking that you dread in summer. It's also the carrying of fuel, the cleaning up of dirt and ashes and the scouring of smudgy utensils.

You have none of that with electric cooking, because the fuel comes with the turn of a switch and there is no flame to make ashes and soot.

Saves Food

A six-pound roast of beef, cooked the ordinary way, shrinks nearly two pounds. Cooked electrically it shrinks only three-fourths of a pound. That's a big saving isn't it? Especially when the cost of fuel isn't a bit larger!

Easily Bought

You don't have to pay the entire cost of an Electric Range at once. A small initial payment puts the range in your home and small monthly installments take care of the balance.

Why not rid yourself of hot weather kitchen drudgery at once? Come to our store and we will show in a few moments just the range to fit your kitchen and your purse. Come TODAY.

UTAH POWER & LIGHT CO.

"Efficient Public Service"

HOME

PRESERVING AND PICKLING FRUITS

Mary Mason Wright.

Fruits such as peaches, pears, plums and such like are the most satisfactory for preserving and pickling. Every housekeeper knows what a comfort it is to have a good supply of her own preserves and pickles which she can rely upon when the winter season comes, and when fresh fruits are not so easy to obtain, or at least more expensive.

The jars in which the fruit is put should always be thoroughly sterilized, and the rubbers good so that they may be sealed airtight. One can have quite a variey for her preserve closet by combining different fruits, and putting them up in different ways. Spiced and pickled fruits make nice relishes to be eaten with meat, and are nice to include in the children's school lunches.

None but ripe, firm fruit should be chosen for preserving and pickling; for jams and butter one can be a little less scrupulous, although it is always advisable to use the best fruit obtainable. In pickling use only the best cider vinegar. If very strong it is best to weaken it with a little water, rather than use weak vinegar as it generally lacks in flavor.

Pear Preserves.

Use nice large pears, peel, quarter, and core; then cut up into eighths. To each 7 pounds of the fruit use 6 pounds of granulated sugar, 3 lemons, and several pieces of green ginger root. Place the pears and sugar in alternating layers in a preserving kettle, and let stand over night. In the morning place in the oven long enough to melt all the sugar, and pour off; then add to the juice and the grated yellow rind of the lemons, and the bits of ginger root. When boiled to a thick syrup remove the ginger root, and add the pears, and simmer slowly until transparent, and a golden color. Fill into jars. Boil the syrup down a little more, and pour over.

Apricot Preserves.

To each 7 pounds of preserved fruit use 7 pounds of sugar, and the juice of ½ dozen oranges. Place the apricots and sugar together in kettle and let stand overnight. In the morning drain off the syrup, and add the orange juice, and the grated rind of 2 of the oranges; and also a few of the blanched kernels of the stone, and bring to a boil; then add the fruit and simmer until the fruit is clear. Remove the fruit, and place in jars. Boil the syrup down until thick, and pour over.

Plum and Crab-Apple Marmalade.

Use for this marmalade nice large Siberian crabs, and wash but do not peel. Quarter, and place in a kettle with a little water and boil until soft; then pass the pulp through a colander. Take an equal quantity of plum sauce and combine with the crab-apple. To each pint of pulp add 1 pound of sugar. Boil to the consistency of marmalade, sirring almost constantly. This makes a milder marmalade than if plums were used alone. Semi-tart apples can be used instead of the crab-apples if wished.

Watermelon Preserves.

Divide a watermelon in quarters, and trim away the green outside rind, also remove all the red inside part, Cut this white part into small pieces, either cubes or strips, and cover with a weak brine and let stand over night. Drain and rinse, and boil in water until the rind is tender enough to be easily pierced with a fork. Make a syrup with water and sugar, allowing 1 pound of sugar to each pound of melon, also 1 thinly sliced lemon to each pound of fruit, and ½ teaspoonful ground ginger root. Boil the syrup until thick, and add the fruit, and simmer slowly until transparent. Fill into jars, and pour over syrup and seal.

Spiced Peach Pickles.

Either free stone or clings can be used for this purpose. Peel, and leave whole. To each 7 pounds of fruit use 4 pounds of sugar, and 1 ounce each of cinnamon and allspice, and 1 teaspoonful each of cloves and mace, 1 pint vinegar and 1 pint water. Place the sugar, water and spices tied in a muslin bag together in a preserving kettle, and bring to a boil; then drop in the peaches and cook until heated through. Let stand in this syrup over night; then pour off into a kettle, and add the vinegar. Boil down to the consistency of honey, and pour over the peaches arranged in glass jars. Seal up.

Stuffed Spiced Peaches.

To make these use large, firm free stone peaches, peel and halve. In the center of each halve place a bit of ginger-root. Place the two halves together, and keep in place with spints from stick cinnamon. Proceed as in the above recipe only omitting the spices. The ginger-root and cinnamon giving the desired spiciness to these pickles. Use white vinegar or clear vinegar, and white sugar for these pickles.

Spiced Sweet Apples.

Peel and quarter nice large sweet apples. To each 7 pounds of the fruit add 4 pounds of sugar, 1 quart of vinegar, 1 pint of water, and 1 ounce each of allspice and cinnamon tied up in muslinb ag. In each quarter of apple stick 1 or 2 cloves, and add to the syrup, and boil until tender. Remove and fill into jars and boil the syrup down until thick, and pour over the apples. If you wish a dark pickle use brown sugar, and if you wish them clear and transparents use white sugar and clear vinegar. Simmer the fruit in a syrup spiced only with stick cinnamon and a little ginger-root or lemon rind, and add the vinegar after the fruit has been removed to jars.

Minted Sweet Apples.

Follow the above recipe only instead of spices add a cupful of mint tea made by simmering 1 cupful of fresh green mint in a pint of water or a half cupful of dried mint. Strain before adding. Use 1 cupful of water instead of the pint.

Pickled Figs.

To 7 pounds of ripe figs allow 3 pounds of sugar, 1 pint of vinegar, 1 pint of water, and 1 ounce each of cloves, allspices, mace and cinnamon tied up in a muslin bag. Boil the figs in the syrup until tender and fill into jars. Boil the spiced syrup down until the consistency of honey and pour over the figs, and seal up.

Watermelon Sweet Pickle.

Cut the watermelon up into strips, and remove all the green rind and soft inner pulp. Cut into cubes and soak in weak brine overnight, allowing about ½ cupful of salt to a gallon of water. To each 7 pounds of the fruit use 4 pounds of granulated sugar 1 pint vinegar, 1 pint water, several sticks of cinnamon, a bit of ginger-root or lemon rind or both if desired. Place the sugar, water, and spices together in a kettle, and add the melon, and simmer until tender. Remove from the fire, and let stand several hours in the syrup. Put syrup over fire again and add the vinegar, and boil to a thick syrup, and pour over the melon in glass jars. Seal up.

Canteloupe Sweet Pickle.

Cut the canteloupe into sections, peel, and remove the green rind and the soft inner part. Soak in a weak brine overnight. Proceed as in making the watermelon pickle only add instead of the ginger-root a teaspoonful of mace and a few cloves tied up in a muslin bag.

War is scraping our sugar bins and our granaries. The loss we waste the longer it will take to empty them.

Threefold Co-operation

Every telephone connection requires co-operation. The slightest inattention or indifference on the part of the person who calls, or the company that makes the connection, or the person who is called results in a corresponding deficiency in service. Each is equally responsible for the success of the service.

Not only is it to the advantage of the individual himself to use the telephone efficiently, but his conservation of the advantages of these national lines of speech benefits all telephone users.

Accuracy in calling, promptness in answering, clear and deliberate talking, courtesy and patience on the part of both user and operator are essentials of service, and must be mutual for good service.

Efficient telephone operation is vital to the war work of this country. The army, the navy and the myriad industries contributing supplies depend on the telephone. It must be ready for instant and universal use. The millions of telephone users are inseparable parts of the Bell System, and all should patriotically contribute to the success of the service.

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AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

BARLEY FLOUR GOOD SUBSTITUTE FOR WHEAT

Barley is a palatable, wholesome grain which has long been used in infant feeding and, to some extent, for general cookery, and which can now be used in quantity to save wheat. Barley flour is one of the best of the wheat substitutes. Delicious breads and cakes can be made by using it to replace all or part of the wheat flour.

The use of barley flour for such purposes, though new to most of us is not new to some people. Not many years ago barley was used more extensively than wheat for bread making in many of the European countries. Let us revive the art of barley cookery and, by so doing, "stretch" our supply of wheat flour so that it may go further to meet the needs of the allies.

Millions of bushels of barley are raised yearly in the United States. This supply heretofore has been used chiefly for stock feed or for malting, but under present conditions the greater part of the crop is being milled into flour which, since it is both palatable and nutritious, may well be used to meet the increasing demand for wheat substitutes. This flour is now on the market, and it is a patriotic duty to use it to save the wheat flour.

Give barley flour a trial—you will wonder why it was not used more before the war.

Barley flour does not keep so well as wheat flour, so it is best to buy it

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in small quantities, even for home consumption.

The recipes which follow have been tested in the experimental kitchen of the Office of Home Economics of the United States Department of Agriculture:

Barley Hot Breads.

Barley flour is very satisfactory for hot breads.

Barley Quick Biscuits.

2 cups barley flour, ½ teaspoon salt, 2 tablespoons fat, 4 teaspoons baking powder, 2-3 cup milk.

Barley Drop Biscuits.

2 cups barley flour, 6 teaspoons baking powder, 4 tablespoons fat, 1½ teaspoon salt, 1 cup milk.

Baked in a sheet this makes a good shortcake buttered and served with fresh crushed berries or other fruit.

Barley Waffles.

2 cups barley flour, 1 teaspoon salt, 3 teaspoons baking powder, 1½ cups milk, 2 eggs, 3 tablespoons melted fat.

Sift the dry ingredients together and add slowly the milk, beaten egg yolk, and melted fat. Fold in stiffly beaten whites. Beat thoroughly and cook in hot, well-greased waffle irons.

Barley Muffins.

2½ cups barley flour, 1 cup milk, 2 tablespoons corn sirup, 4 teaspoons baking powder, ½ cup wheat flour, 1 tablespoon fat, 1 egg, ¼ teaspoon salt.

Barley Spoon Bread.

1 cup barley flour, 1 cup hot boiled hominy grits, 3 tablespoons fat, 1 teaspoon salt, 2 cups milk, 2 eggs, 2 teaspoons baking powder.

If you use your own bread recipe and replace one-fourth of the wheat flour with barley flour you will be able to make a very good bread. With the present need of saving flour, it will be desirable for the housekeeper to make less yeast bread than usual, as one can not use so large a percentage of wheat substitute in making yeast breads as in quick breads.

Barley Yeast Bread.

Barley Pastry.

Very good pie crust can be made with all-barley flour or using one-half barley and one-half wheat flour. The first recipe is especially good for a one-crust pie.

Pie Crust 1.

1 cup barley flour, 2 2-3 tablespoons fat, ⅛ teaspoon salt, cold water.

Pie Crust 2.

½ cup barley flour, ½ teaspoon salt, 2 2-3 tablespoons fat, ½ cup white flour, ¼ teaspoon baking powder, cold water. Two crusts.

Barley Cakes and Cookies.

It is not necessary to go without cake when such delicious products can be made that use no wheat flour and but little sugar. In these recipes the housekeeper, if she prefers, can use cream of tartar with baking soda in the usual proportions in place of baking powder.

Chocolate Cake.

2 cups flour, ¼ cup fat, ¼ teaspoon salt, 2 squares chocolate, ½ cup milk, 4 teaspoons baking powder, 2 tablespoons brown sugar, 1 cup corn sirup, 2 eggs, whites and yolks, beaten separately, 1 teaspoon vanilla.

Sponge Cake.

1½ cups barley flour, 4 eggs, 1 tablespoon lemon juice, 1½ cups corn sirup, ¼ teaspoon salt, 2 teaspoons baking powder.

Fruit Cake.

2¼ cups barley flour, ¼ cup fat, 3 tablespoons molasses, ½ cup chopped raisins, ¼ teaspoon cinnamon, ½ cup chopped nuts, ½ cup corn sirup, ¼ teaspoon soda, 1 teaspoon baking powder, ¼ teaspoon allspice, ¼ teaspoon cloves, ⅛ cup citron.

Bake 1 hour and 10 minutes. Keeps moist and very good.

Gingerbread.

1½ cups barley flour, ½ cup molasses, ½ cup milk, 2 teaspoons baking powder, ¼ teaspoon soda, 1 teaspoon ginger, 1 teaspoon cinnamon, ⅛ teaspoon salt, 2 tablespoons fat.

Bake about 30 minutes in moderate oven. Good texture and flavor.

Hermits

2 cups barley flour, 2 tablespoons fat, 1 egg, ½ teaspoon ginger, ¼ cup chopped raisins, 1 teaspoon baking powder, ½ cup corn sirup, ¼ teaspoon salt, ½ teaspoon cinnamon, ¼ cup nuts, 1 tablespoon milk.

Honey, maple sugar, or maple, beet, apple, or sorghum sirup, which can be made at home, can be used in the same way as corn sirup in the above recipes to save sugar.

BEANS AND PEAS ARE VALUABLE FOOD

They can be used in place of much of the meat we eat. They are rich in materials which the body needs—the body-building proteins, iron and some of the other minerals, and they give the body a large amount of fuel. It is not wise to use the beans and peas as our only protein food, however, and leave out milk, meat, or fish entirely. But many of us can use less meat which is more expensive and is needed to send abroad to our fighters and the Allies.

To Cook Dried Peas and Beans.

You can cook them all in the same way; then, after they are tender, they can be made into anything you wish—baked beans or peas, soup, a vegetable stew, a loaf, or a salad.

Soak for four hours or overnight in twice as much water as there are peas or beans. Cook in the water in which they are soaked unless it has an unpleasant taste. Add more water as it boils away. Cook from one to two hours, depending on the age and variety and on the purpose for which they are to be used. If they are to be served as a vegetable, do not let them get too soft. They are excellent cooked in a fireless cooker.

Beans and Peas as a Vegetable.

Cook as usual. Season with butter or oleomargarine or other fat, salt and pepper. Or serve with a cream or tomato sauce. These are delicious and inexpensive vegetables.

Soups.

Black bean soup, split pea soup, cream of bean or pea, puree of beans and tomatoes—you can have all of these and many others. They are delicious, inexpensive, and easy to make. Many of them are so hearty that they can form the chief dish of a meal.

Soak and cook a pint of peas or beans as usual, but take more water, about 2 quarts, and cook until very soft. Then put them through a sieve. These mashed beans and peas are ready to be made into all kinds of soups by adding the various seasonings, water and milk, or stock enough to make 2 quarts. These soups should all have a little flour added to them as a binder to prevent the thick part from settling to the bottom. Mix thoroughly 2 tablespoons fat with 2 tablespoons flour, add a little of the hot soup, and stir until it is smooth, and add to the remaining soup, stirring to prevent lumping, and cook for about 10 minutes.

Black Bean Soup or Split Pea Soup.

To the pulp from 1 pint beans or peas, add enough water or stock to make 2 quarts. Thicken with flour as directed. Season with salt and pepper. The juice of a lemon and one-half teaspoon mustard adds to the flavor.

Cream of Bean or Pea Soup.

To the cooked and mashed pulp add enough milk to make 2 quarts of soup. Season and thicken with flour.

Puree or Porridge of Beans and Tomatoes.

Instead of milk, tomatoes may be used. Add a cup of canned tomatoes or three medium-sized tomatoes which have been cooked for 10 minutes and put through a sieve. If the porridge is too thick, add water or stock. Season and add the flour as directed.

Bean or Pea Soup With Meat.

The peas or beans are soaked as usual and cooked with the meat in four quarts of water instead of two. Use a soup or ham bone, or one-half pound of salt pork or any smoked meat, and cook until the beans are soft. Remove the meat and put the soup through a sieve. Season and thicken. The cooked meat cut in small pieces may be added to the soup. An onion, several stalks of celery or soup herbs are good cooked with the soup.

Boston Baked Beans.

This is such an old favorite that it needs no recommendation.

Soak one quart beans and cook until tender, but not so soft that they will fall apart. If desired, one-fourth pound of salt pork may be cooked with them. When tender, add one-half teaspoon mustard, one tablespoon sugar or two tablespoons molasses, and one tablespoon salt. Bake in a covered dish for one and one-half hours, leaving them uncovered for the last 15 minutes.

Any of the other beans are good cooked this way and so are dried peas. Omit the molasses if peas are used. Either beans or peas can be boiled and baked in a fireless cooker.

Instead-of-Meat-Loaf.

2 cups cooked peas or beans, 1 cup cooked rice, 1 cup bread crumbs, 1 egg, 1 tablespoon fat, ½ teaspoon salt or 1 teaspoon if the rice is unsalted, ⅛ teaspoon paprika.

Put the peas or beans through a sieve or grind in a meat grinder. Mix all the ingredients well. Form into a loaf and bake until brown. Or croquettes may be formed, rolled in bread crumbs and browned in the oven. Baste frequently with small amounts of liquid containing a tablespoon of fat to a cup of hot water.

Salads.

Cook the beans and peas as usual until just tender. Let them get thoroughly cold. Add a little minced onion, celery, green pepper, or the same amount of shredded cabbage as there is beans or peas. Season with salt and paprika, and mix with the salad dressing. Serve on lettuce. A tomato stuffed with the mixture makes a delicious salad.

CREAMED POTATOES AND GREEN PEAS

Cook English peas until tender, then season to taste with sweet milk, butter, salt and black pepper. While they slowly simmer for a few minutes cream some Irish potatoes and place 2 tablespoonfuls in individual plates, forming a little mound. Scoop out center of mound and fill with peas.

"—use foods that require less sugar"

THIS is one of the most important recommendations of the Food Administrator: "In cooking and baking use foods that require *less sugar.*"

In other words—use Ghirardelli's. Use it freely and wisely—in place of other less nutritious and more expensive foods. Not only will you save money but you will help in food conservation.

Cooking and baking require less sugar when you use Ghirardelli's. Because—it contains in itself the sweetening flavor you need. More than this—it adds a new touch of richness to your icings, your puddings and other desserts.

In ½ lb., 1 lb. and 3 lb. cans; a tablespoonful—one cent's worth—makes a cup.

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CURING HAY ON TRUCKS

A new method of curing hay economically and effectively, even under unfavorable weather conditions, is made possible by the use of hay trucks, which are simple, cheaply constructed labor-saving devices similar to ordinary hay racks. A hay truck consists of a frame mounted on two low wheels. A number of them are placed about the field, and are used to stack the partly cured hay on. The hay is thus protected from moisture in the ground, and a canvas cover prevents injury from rain. When the hay is to be hauled to the barn or baler no reloading is necessary, for the team can be hitched to the truck. These trucks, which can be used to advantage when protecting bound grain from the rain until it is ready to be threshed and for hauling corn to the silo, etc., are described in Farmers' Bulletin 956, recently published by the United States Department of Agriculture. It is estimated that a truck and the necessary canvas (9 feet by 14 feet) costs about $20.

While hay trucks have been used successfully in many parts of the South, the bulletin states that they can be used to advantage in any locality where there is a large acreage of hay, especially alfalfa, and where hay making is a more or less hazardous undertaking on account of the prevalence of rainy or cloudy weather. The additional cost in curing hay when the truck method is used is more than offset by the gain in efficiency, considering the average loss of hay cured by ordinary methods in rainy weather.

How the Truck Is Made.

A hay truck 12 feet long by 7 feet wide will hold about 1,500 to 2,000 pounds of cured hay. It consists of a rack which rests on an A-shaped frame. At the rear, the frame is supported by two 16 to 20 inch wheels placed about 4 feet from the end. The front is supported by a 6 by 8 inch wooden block of sufficient length to hold the truck level. This is known as the trigger and is fastened by a heavy bolt between the two main frame timbers near where they come together. Upright standards are placed at each end of the frame in an A-shaped position. At the top of each standard a notch is cut to receive a 2 by 4 inch ridge pole that supports the canvas covering and keeps it from lying flat on the hay, thus permitting the air to circulate freely at the top. The truck is moved by means of a 2-horse team and a 2-wheel running gear, similar to the front running gears of a low-wheeled wagon. This gear is attached to the front end of the truck by means of a long clevis pin, and when the team starts the forward movement causes the trigger to trip and drag on the ground, the weight of the load being thus shifted to the running gears. Upon reaching the barn or baling machine the team is back a step or two, which causes the trigger to assure an upright position and again support the front end of the load. The running gear can then be detached and taken to the field for another loaded truck.

How to Use the Truck.

Hay must be partly cured before it is placed on the truck to avoid danger from heating and spoiling, say the bulletin. It is desirable to do the last third or fourth of the curing on a truck under a canvas cover, where it is protected from the sun and rain. When the yield of hay is light, it is a good plan to mow it in the morning, rake it in the afternoon and put it an the trucks in the evening or next morning, after the dew is off. When the yield is above a ton per acre, the hay could be mowed in the morning, tedded the next morning and raked in the windrows before noon, where it should be allowed to lie for about two hours before being put on the truck. Hay may be taken directly from the windrows loaded by hand this is not considered best practice, because it requires too much time to pitch the hay and some of it is lost by being scattered. The best practice is to bunch the hay with a push rake, and then load it upon the trucks which have previously been distributed in convenient places about the field. In good curing weather hay is in condition to be baled after curing three days on the trucks. If the hay is a little green when put on the trucks, or the weather is unfavorable, it will take a week or possibly longer to cure out thoroughly. Hay may remain on the truck indefinately if well protected by a canvas cover.

The use of the hay truck effects a considerable saving in labor over the common method of cocking from the cock by hand. Indeed, the hay-truck method required even less labor than that of curing in the cock and hauling to press, stack or barn with the push rake.

WHY HE LOST HIS FRIENDS

He was not loyal to them.

He was suspicious of everybody.

He borrowed money from them.

He measured them by their ability to advance him.

He seemed to forget that he who uses his friends loses them.

He was always saying mean things about them in their absence.

He was cold and reserved in his manner, cranky, gloomy, pessimistic.

He was always jealous of those who were more prosperous than himself.

He never thought it worth while to spend time keeping up his friendships.

He never threw the doors of his heart wide open to people, or took them into his confidence.

He regarded friendship as a luxury to be enjoyed, instead of an opportunity for service.

He was always wounding their feelings, making sarcastic or funny remarks at their expense.

He did not realize that friendship will not thrive on sentiment alone; that there must be service to nourish it.

He was always ready to receive assistance from them, but always too busy or too stingy to assist them in their time of need.

He used his friends in all sorts of ways and for his own ends, and never hesitated to sacrifice their reputation for his own advantage.—The New Success.

MANGELS ARE VALUABLE FOR DAIRY COWS

We have had considerable experience with roots for stock feeding and are quite enthusiastic in this line. In feeding them to milk cows, we have found them almost if not quite, a complete substitute for corn silage. They are very suitable to raise on farms where not enough stock is kept to justify the putting up of a silo.

Our first experiment was with turnips, but we soon discarded them because of their bad flavor, by which they are made undesirable for milk cows, although by good and careful management they may be fed so as to avoid flavoring the milk. Our second experiment was made with mangels, testing both the same year. While sugar beets are relished more than mangels by cattle of all kinds, they are so much more expensive to raise, and yield so much less than mangels, that we greatly prefer mangels.

As to varieties most suited, the catalogues of the seedsmen offer quite a number, but we prefer the Mastidon, as this sort is a very heavy yielder, and grows well above ground so as to be easily harvested. Mangels are so easily grown as potatoes or turnips and enormous quantities can be grown on comparatively small areas. It is quite possible to raise from forty to fifty tons to the acre.

The Culture of Root Crops.

It goes without saying that if a very heavy crop is desired, the land must be put in a superlatively good condition. We manure the land heavily before plowing, with rotten stable manure, and there is no danger of applying too much. The mangel is but little trouble with pests and insects of any kind.

In our experience, low land has always given the best results. Mangels require a deep, friable, cool soil that can be easily worked, while at the same time the roots will find a fairly compact and cool subsoil. In this section we can sow them any time up to the first of July, although sowing about the last week in May usually brings the best results. Some varieties mature earlier than others and therefore they may be sown later, and still make a good crop.

If only a small patch is to be grown, the planting can be most successfully done by hand, covering the seed with a hand rake. If an acre or more is sown, we sow with a small seed drill, setting it so as to sow from four to five pounds to the acre. We make the rows fifteen inches apart and keep them clean with a hand wheel hoe. If horse cultivation is to be given we make the rows not less than thirty inches apart.

Harvesting and Feeding Mangels.

In order to keep ahead of the weeds, we begin cultivation just as soon as the plants appear above the ground—sometimes before. When the plants begin to crowd each other, we thin them out so as to stand about six inches apart in the rows, and when they become so large as to interfere with the wheelhoe, we resort to hand weeding to keep them clean.

We let the mangels stand in the field until heavy frosts are likely to occur which in this section is about the middle of October. We then harvest them storing a portion of them on the barn floor for immediate use, the bulk of the crop being buried in pits. We cover them very lightly at first, increasing the cover as the weather becomes colder. Root storage is not a very easy matter and it sometimes happens that we lose some either by frost on excessive heat in the pits, in spite of our efforts to prevent it.

In feeding mangels to cows, we do not cut them, this not being necessary. We begin by feeding about fifteen pounds at a meal, and increase the amount gradually until about fifty pounds are fed. They really are not at their best until they have been in storage for some time.—B. Andrews.

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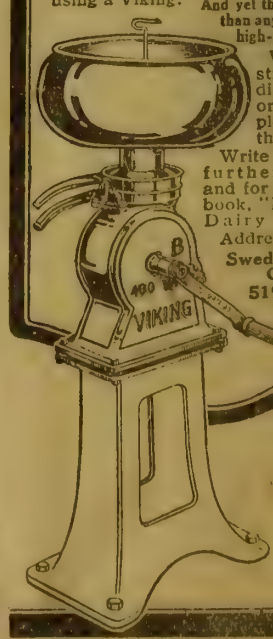

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Why Better Roads Immediately

This question as to the feasibility of continuing road construction and repair throughout the country arose soon after the entry of the United States into the Great War. The argument was that to do this would require a large amount of energy that might be more profitably employed towards what appeared from a hasty study of the situation, a more direct prosecution of the war. Munitions were needed in heretofore unheard of quantities and extensive factories were required to be built for these purposes. Shipyards were sadly lacking in which to construct the vitally needed ships for carrying to Europe the tonnage of material consumed daily. Camps and cantonments approximating cities in size had to be built in record time for the housing and training of the armies. There is then little wonder that the roads, which seemed of more minor importance, were forgotten and left neglected in the mad rush.

Other things also banded together to stop or at least reduce road work. The supply of labor was drained to the very bottom in all lines of secondary effort by the pressing need in the construction work immediately concerned with preparations for war. This left existing road contracts unfinished and prevented new ones from being undertaken. Many contractors entered into munition plant construction or operation and devoted their entire efforts and organizations to aiding the Government, sometimes dropping road work for this purpose. The constantly increasing cost of materials and labor for road construction induced many communities to delay the letting of contracts until a more propitious time. Meanwhile, there is a sentiment that the public in general should submit for a few years to the discomfort of bad roads until such time arrives. Some road officials have to a great extent the impression that they are patriotically sacrificing construction work in order that other important preparations may go forward unhindered.

The developments during the past winter and spring have undoubtedly proven that roads are a vital necessity in the general preparation for war, and have shown the error of neglecting the highways.

During the congestion of traffic on the railroads early in the fall, many industries were forced to begin the transportation of a part of their more necessary materials by means of auto trucks in order to maintain a sufficient supply of materials. As conditions grew worse and finally culminated in a workless week and a series of workless Mondays, manufacturers and dealers concentrated their efforts upon obtaining even the vital necessities for their operations by the use of the highways and roads. In fact, for a time a portion of the supply of coal and food for the public depended upon truck haul.

At first the use of trucks was limited to comparatively short hauls, but this has developed so rapidly that truck trains are in constant service on long hauls between the middle western cities and the Atlantic Coast. Now it is not unusual to see a truck train consisting of from a small number up to fifty or sixty trucks en route loaded with materials formerly hauled only by the railroads. The large volume of freight hauled by this method has already served to materially relieve the train on railroad traffic and is daily growing in volume. At the same time, the short hauls from distributing centers are largely being made by trucks, thus freeing much railroad equipment from this service to that of through freight hauls.

This extended use of trucks has brought a greater strain on the road systems in the more heavily traveled sections of the country than they can successfully withstand. The transition of the kind of traffic using the highways has been so rapid, that even before the war road building activities and types of construction had not kept pace with the change. Before the automobile became so popular, the problem of building a road surface that would easily carry the slow-moving horse-drawn vehicles was a comparatively simple one. Fast-moving light pleasure automobiles introduced more difficulty but this was practically solved when the trucks began to bring in fresh complexities. While the light trucks of one and two ton capacity did not materially affect the road surface built to withstand the abrasive action of the lighter cars, the recent advent of the very heavy trucks has shown that more substantial roads must be built and kept in good repair.

This has been clearly and forcibly demonstrated by the extra heavy traffic of the past winter and spring. Hard-surfaced roads that went into the winter in excellent shape have been broken through and cut up so badly that they are scarcely passable. Truck traffic, which is so necessary in helping to relieve the burden upon the railroads, and to speed up war preparations, has been meeting with difficulties almost insurmountable on account of the condition of the roads. Oft times a whole train of trucks is held up for hours and even days by being stuck or by breakage caused by bad roads. While an individual case may not appear serious, it frequently happens that the building of a necessary plant is delayed or the output of some plant is curtailed, awaiting the arrival of material that is on some truck stuck in the road a few miles away.

This is the answer to "Why better roads immediately?" especially those main trunk highways which must carry the heaviest traffic should be rebuilt immediately.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending June 18th.—Cattle—Receipts, 7,041. market, higher; choice steers, $11.00@13.00; good, $8.50@10.50; feeders, $6.50@8.50; choice cows and heifers, $9.00@10.50; fair to good, $5.50@7.00; feeder cows, $4.50@6.00; canners, $5.00@6.00; veal calves, $10.00@11.00; choice bulls, $7.50@8.50.

Hogs — Receipts, 1,460; market slightly higher; tops, $16.05; bulk of sales, $16.00.

Sheep—Receipts, 4,735; market, steady; lambs, $15.00@16.50; ewes, $10.00@10.50.

Omaha, June 18.—Hogs—Receipts, 19,100; market steady, 10c lower. Heavy, $16.30@16.40; mixed, $16.40@16.50; light, $16.50@16.60; pigs, $12.00@15.00, bulk of sales, $16.40@16.50.

Cattle — Receipts, 6,000 market steady, 15 to 15c lower. Native steers, $12.50@18.00; cows and heifers, $11.50 15.00; western steers, $9.50@14.75; Texas steers, $9.50@12.50; cows and heifers, $7.75@9.75, canners, $7.70@10.50; stockers and feeders, $8.00@12.50; calves, $8.00@13.25; bulls, stags, etc., $8.00@13.00.

Sheep—Receipts, 6400; market steady. Wethers, $13.50@14.00; ewes, $11.00@13.50; lambs, $16.00@20.50.

North Salt Lake, June 17.—Cattle—Receipts, sixty, market steady; choice heavy steers, $12.50@13.50; good steers, $10.00@12.50; feeder steers, $7.75@9.50; choice cows and heavy heifers, $9.50@11.00; fair to good cows and heifers, $8.00@9.00; cutters, $6.00@7.00; canners, $5.25@6.00; fat bulls, $8.50@9.00; bologna bulls, $6.50@7.25; veal calves, $10.00@12.00.

Hogs—Receipts, 225; market steady; choice fat hogs, $16.00.

Sheep—Receipts, 5401; market steady choice spring lambs, $16.50@17.25; choice sheared lambs, $14.00@14.50; choice yearling wooled wethers, $13.00@15.00; fat wooled wethers, $12.50@14.00; fat wooled ewes, $10.00@12.00.

SAVE EGGS FOR SEASON OF HIGH PRICES

It is becoming more and more necessary for both the producer and consumer to hold eggs over from the season of plenty to the season of scarcity, from the season of low prices to the season of high prices. One egg next winter will be worth as much as two and perhaps as much as three eggs at the present time. There is every indication that eggs will be even higher next winter than they were last. For that reason it will pay the producer and the consumer to find some method of preserving eggs at present prices. Next to cold storage, we have had best success by preserving our eggs in water glass, (Sodium Silicate.) We are also trying out two or three commercial preservatives, and the indications are that they will prove equally as satisfactory.

You should first prepare your preservative, even before you get the eggs. The water glass solution is made as follows: Use twelve times as much water a you do of the water glass, in other words, to each twelve gallons of water stir in one gallon of the water glass. If you have only a few eggs to preserve, use a smaller quantity, but in this proportion. The water should be boiled and then allowed to cool. When it is just luke warm, you then begin to stir in the water glass. You stir until it is thoroughly mixed. You are now ready for the eggs.

As a container, we use earthen jars, candy buckets, kegs or half barrels. If you use wood see that it is thoroughly cleaned and odorless. The eggs should be clean and fresh. One bad egg may spoil the lot. Place them in the container with the small end of the egg down. Then pour in enough of your solution to cover the top eggs about two inches deep. The following day or just as the eggs are gathered, more eggs can be placed in the same container and more of the solution poured over to cover them. You can continue this process until your container is filled. See that the top layer of eggs is well covered with the solution and if there is any evaporation the container must be refilled. Cover it over with a heavy cloth and tie it on. Lay a clean board or weight over it to protect same. Place them in a cool place, cellar or basement, and they will keep for several months. White eggs preserve as well as brown eggs.

The eggs are good for any purpose, but if you wish to boil them, a small hole should be punctured in the large end of the egg before placing it in the water. In all instances, wash the eggs in water before using.

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and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

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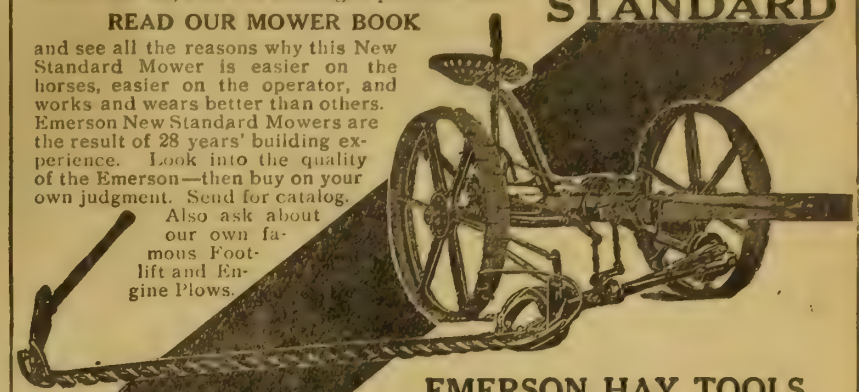

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LIVE STOCK

BREED MORE SOWS

J. R. Simpkins.

To most of us it seems a long, long way to France—too long for the average of us to begin to feel war. The fellow who wakes up to the peaceful, early morning scenes of a farm can't imagine the roar of guns. He finds it all but impossible to connect himself in any personal, intimate way with war. It is something irritable and impersonal that has taken away the hired man, maybe called a son or brother to the training camp, and effected prices and business conditions. But it hasn't struck home deeply enough for the most of us to feel ourselves of it. It has stirred our patriotism, and become a part of the daily life, but few of us in the hog business have awakened to a realization of just what it means to us.

Mr. Purebred Hogman and Mr. Pork Raiser, you have been drafted and put upon the firing line. You have truthfully and most seriously a fearfully strategic trench in the front line to hold; you have a dangerously important place in the ranks to fill in the next drive against the Kaiser. No khakied soldier under Pershing or Haig shoulders a gun half so pregnant of German defeat or half so feared by Hinderburg as the squealing pig in your hog pen.

There was this morning no soldier in France, awakened to turn back a German charge, half so important to the war result as you were, when you rubbed the sleep from your eyes, climbed into the old boots and went out to the slop and feed the hogs You could throw your life away recklessly and courageously against a German bayonet, and not produce half the result that you did when you sat up all night to save all the pigs from the old red sow.

You could show the yellow streak and show yourself both a traitor and a coward among the United States troops along Perishing's sector in France—and you would not be any more entitled to court martial and firing squad than if you neglected to breed a few of the brood sows in your herd.

This sounds like strong, foolish talk and is hard to believe—but its true.

Bullets are more plentiful than pigs. Powder is not worrying the allies nearly so much as meat. And an empty gun is little worse for a fighting man than an empty stomach.

Factories can and are being built to turn out guns by the million and cannons by the thousand.

But the American farmer is the sole manufacturer of pork. He can't breed hogs with machinery. All the men in the country can't make his old sow work three shifts per day. You can speed up and treble the work in a factory, but nature is the chief boss in the pig pens and you can't hurry her process one iota.

All you can do is to see that nature is given every possible chance in every possible instance to make a litter of pigs grow where one is growing now.

Breed every sow and gilt, and you will be throwing a barrage into a German trench.

Save every pig when these sows and gilts farrow, and you will be entitled to the same high praise as a Red Cross nurse when she saves a soldier' life in a hospital at the front.

Mix intelligence, foresight, precaution, consistent economy and common sense into the feed that goes to your herd. Don't feed lice and worms and lung fever. Feed pork. Keep the pens clean and sanitary. Keep the hogs healthy. Keep them growing to the maximum pound for every sack of feed or bucket of swill that goes into the trough.

Breeding stock is woefully scarce the country over. The supply of sows and gilts is away below standard. Right now wise breeders and feeders are scouring the country for berd sows and sows to breed, and finding far too few.

RAISE FALL PIGS

There are many different ideas prevalent, and methods practiced, among our farmers in connection with raising fall pigs. Many farmers think fall pigs cost more to raise than they are worth; and this is true where they are raised in a haphazard way.

The time has come when the farmer must figure from every angle; and, if we properly manage fall pigs, just as much profit may be made from them as from the spring litters. Fall pigs should be farrowed not later than September 15th, and should be well cared for from the time they are farrowed until they are ready for market. It is the late litters of fall pigs, that shiver from morning till night, that makes fall pigs unprofitable. No one is to blame except the man in charge of the hogs.

It will take a little more feed to raise pigs in the winter time, when no forage crops are used, but when the cost of keeping the sow a whole year to raise one litter is figured, we find the extra feed for the fall pigs about the same as it takes to raise the spring litters. Besides the cost for labor is less for the fall pigs, as ordinarily, the farmer's time is not as valuable in the winter as in the summer.

Some may say: "We don't keep our sows a year for one litter, for as soon as the spring litter is raised we fatten the sow, and keep gilts to raise the next crop of pigs." To me this is a mistake, for it costs more to raise a gilt than it does to keep a sow. Besides one can seldom tell what kind of a brood sow a gilt will make by the first litter. The second litter from a sow is generally as good as a litter as a sow will ever raise, if other conditions are equal.

I have watched many bunches of fall pigs that have made splendid gains as well as good profits; where others have been money losers every day of their life. Fall pigs should not be kept in lots of more than twenty or twenty-five in one place, and should be given plenty of exercise, and good, dry, warm, well-ventilated sleeping quarters. They should always be fed warm feed in cold weather.

Sows that are to raise fall litters should be bred about May 10th, which will bring the litters early in September. If properly fed the pigs will then be large, strong fellows before the cold weather starts.

One of the worst troubles with fall pigs, and as well of spring pigs, is that too many are affected with worms. No one can feed pigs profitably at any age at any time that are affected with worms. In next week's issue I will give our method of treating pigs for worms.—Burlie Dobson.

KEEP STOCK ON THE FARM

Every farmer should raise and feed stock of some kind. No matter how large or small the farm, you can feed stock—cattle and sheep on the large farm,and hogs and dairy stock on the small farm. Brood mares and poultry may be kept on every farm to advantage. My idea of profitable farming is to keep sufficient stock of the right kinds to eat up every bit of forage and utilize all the pastures along ditches, in waste places, fence corners, etc., as well as refuse from the gardens and orchards. A small band of sheep is

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This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

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a good investment for any farmer—these animals will eat roughage that no other animals will touch and they will feed upon weeds to a large extent. Hogs will make good use of all refuse from the kitchen and of vegetables and fruits culled from the garden and orchard. Brood mares will be found profitable if properly handled. Keep well bred mares, feed and treat them well and they will work eleven months in a year and each will average enough colts during her life to pay for her keep. Livestock will take the cheapest forage and the waste of the farm and turn it into the four highest products on the market—beef, pork, mutton and butter.—L. D. O'Donnell.

THE WISDOM OF THE DUMB BRUTE

We have been watching during the past summer the policy which the birds pursue in rearing their families. We have noticed that they show a great deal of wisdom in locating the nest, and that they spare no pains in its construction, and that when the little birds come, the parent birds labor from early morning till dark to supply their immediate wants. We have noticed that when they have wing development and growth that will enable them in a short time to take care of themselves, the parent birds give them little further attention. In a manner they force the little ones to leave the nest and depend on their own resources.

A young robin came fluttering on our porch one hot summer afternoon, evidently timid and greatly alarmed at the aspects of this new world upon which it had entered. The old bird came fearlessly to its side, chirped it up and coaxed it away, greatly heartened by this parental encouragement. When the young house sparrows have reached a point where they are capable of an independent life, the old ones apparently coax them out of the nest, look after them for the first day, enticing them to some sheltered spot where they will be out of the way of a prowling cat or mischievous boy; but after that they give them no further attention. They are ready for entrance into that world-wide school of hard knocks, although that is too strong a term to apply to the treatment which birds give their young.

We were interested in a dog with a litter of pups, of which she was the valiant defender. Woe to the cat that ventured within her reach! But after she had matured them and taught them to fight, by pretending to fight with them herself, showing them that as bull-pups they must be fighters, she cut down the nourishment, weaning them gradually, and thus introducing them to the school of hard knocks, or, rather, to an independent, self-dependent life.

We notice that brood sows will risk their lives for their little piglets, and will invite them to a full feast until they are old enough to crack corn and forage for themselves. Then she will lie down in such a way that the pigs can not reach the fount of pig blessing. She is simply weaning them and compelling them to look out for themselves.

These dumb brutes are wise with wisdom that surpass the widom of many human parents. They do not expose them wilfully to dangers to which they may not be equal, or give them tasks for which they may not be prepared, unless necessity compels them to do so; but they absolutely refuse to raise them as mollycoddles. They insist that they must learn to take care of themselves.

It is a wisodm that it would be well for all parents to learn and practice. Too much coddling spoils the boy, or the girl either, for that mater. It is hard to tell which is the easier spoiled. It would be an unwise parent who would put either boy or girl at a task to which he is not fitted to perform, or to put him in a position which he can not possibly fill. We venture to say, however, that fewer boys and girls are spoiled by this treatment than by doing things for them which they are perfetcly able and competent to do for themselves. Boys and girls should have help in getting their lessons, if they need it; but far more boys and girls are spoiled by too much help than by too little.

You never can tell what is in your boy, or girl either, until he is put in a position where he "has to." When we first tried to learn to swim, we never felt safe unless we had at least one toe touching bottom; but we never learned to swin until we plunged in, putting ourselves where it was either swim or drown. Then we found we did not need to have a toe touching bottom.

We are very apt to coddle our children just as we coddle our cattle, for our own gain. Through foolish devotion, we make life too easy for them, and thus make it all the harder for them when they get out into the battle of life, as they must sooner or later, if they are good for anything, or are ever to be good for anything. Every time we develop some one particular quality in our live stock, we lose in some other direction. When we wish to get the greatest possible amount of milk from the dairy cow, we look after the stable to see that it is well ventilated and well lighted. We look after the feeding, give a properly balancel ration. We treat her with the greatest kindness and gentleness. That is all right for that purpose; but what would this dairy cow do if she was put on the range, thrown on her own resources? Life would be very hard for her.

Stockmen manifest a decided preference for cattle that are rustlers and can look out for themselves; but take care that the picking is not so scant that they can not make satisfactory gains. They tell us that the Hereford is a better rustler than the Short-horn; that it can live where the Short-horn can not. The reason is that they were originally essentially grazing animals, taught to look after their own living, and not to depend on balanced rations prepared for them with expert skill.

We have brought the dog into closer relations with us than almost any other animal. He knows he will be petted, fed and cared for. We were greatly interested some years ago, however, in noticing a group of wild dogs that once belonged to a poor man. It is a singular fact that there are more dogs owned by poor men in proportion to population than by any other class. We suppose the reason is that they get from these dumb brutes a sympathy they do not often get from their more prosperous fellowmen. The patrons of this family of dogs left the country and left the dogs. What interested us was that when thrown on their own resources, they took on some of the skill and cunning of the wolf. They had a lair or headquarters, from sheep or whatever else they needed to which they foraged on the flocks to satisfy their appetites. They developed a beauty and activity and sagacity which we had not suspected, taking on some of the sagacity of the wolf, which, by association with man, had been bred out of them.

None of us ever know the full extent of our powers until we are placed in a position that brings them out. There is a vast amount of latent strength both of mind and body in all of us. Look at the newsbays on the streets. How alert they are! What voices they develop, far-reaching voices that our children, with all the training of the school and the teacher of elocution or oratory, can not equal. Why? Because they have to in order to make a living.

Why is it that so many of the children of the foreigner, the southern European, develop such marked ability, surpassing in their studies the children of the rich and well-to-do American born? Simply because they have to depend on themselves.

We hear many young men say that they can not make a speech, that they get "scared to death." Let one of these same young men be put in a position where he has to plead his own case and he will develop a skill in oratory that he never suspected was there. Many a man who believes that he can not make a talk before a dozen people, when confronted with a vast audience, develops a power which he never dreamed himself to possess. He calls up a reserve force and ability which astonishes his neighbors and friends and himself.

None of us know what we can do until we have to. Many a housekeeper will keep her family fairly well this coming winter on an income which she would have deemed insufficient last winter or the winter before. Why? Because she has to. She will learn to "make something out of nothing."

Let us acquire, even before we have to, some of the wisdom of the birds and dumb brutes, or the instinct (what instinct is, we do not exactly know, but someone has called it the stored wisdom of the ages), which they have developed through having to depend on themselves. It was either that or do worse. We can learn a good many things by studying the habits of what we are pleased to call "dumb brutes" and other "inferior" orders of creation.—Wallace's Farmer.

LIVESTOCK AND FENCING

If ever there was an opportune time for the farmers to invest in livestock, that time is now. We never produced a crop like that of the past season. While the price of wheat is less than was expected, it is relatively good compared with the prices paid in recent years, with the exception of 1914. While no doubt much of the return will be wanted in other ways, surely some of it can be spared for making a beginning in live stock by those who have not had any. The one obstacle in the way is the high price which the stock commands. It is not so high, however, but that the farmer who has been favored with a big crop of wheat may not spare from the proceeds enough to pay for a couple of cows, or a few brood sows or a small band of sheep. This will call for some fencing, but the amount called for need not be large. A beginning will thus be made. The stock will soon increase, and ere long the farm will be stocked to its full capacity.

If the question is raised which kind of stock should be purchased the answer is that circumstances should determine the investment, where there is a family, cows should be bought. Where there is no family sheep or swine may answer the purpose better. Another man may prefer to raise horses from the brood mares which are used in doing the work of the farm. The natural tastes of the individual should govern also, at least to some extent.

The danger is on the part of those who invest in stock that they will want to purchase more than they should. The American farmer seldom wants to begin in a small way, and there is merit in such an ambition, but like an unruly steed, it should be firmly kept in place with bridle and bit. It would be a great mistake for one to go largely into keep livestock who is not well used with the same. The person also who does not live on his farm and who cannot give it close personal supervision should also go slowly with livestock investment.

If the claim is true and it certainly is that the areas now devoted to the growing of grain exclusively will give a better return when farmed on the mixed farming plan, why should it not be thus farmer, and why should not the farmers generally begin to farm thus. A few animals on the farm may carry the farmer through in a year when the grain crops are a failure.

In nearly all areas a cow can be carried for a year in good form on the produce of three to four acres of land, should the products grown be winter rye for pasture, and corn and alfalfa for fodder. This can be done on almost any dry land farm. The cream from that cow should be worth $75 per year in the average market. Her calf well raised should be worth $50 in a good market at one year old. The return from the cow and calf for one year should be $125.

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The two should be kept during that year on the produce of five acres. This would mean a return of $25 an acre. Of course the labor must be taken into the account. The man who can do that can live and make some money on the dry land farm.

But should it be objected that the farmer and especially the beginner in areas where the markets are not well adjusted cannot get these prices, which is probably true. Then let a deduction be made of 20 per cent or one-fifth of the whole, the return from the five acres is $100 or $20 acres. Now if the dry land farmer can get a return of $20 an acre for his labor, where has he any ground for complaint. Even though it took seven acres to feed the two animals there is still $14 an acre and it is a sure thing. Twenty bushels of wheat per acre in dry areas is not a sure thing nor are 12 bushels always sure. I have seen corn during recent months, one acre of which had enough of food nutrients in it to feed a cow for a year.—Thomas Shaw.

The silo is an index to the general situation of the community. If the food conserving tower is large, freshly painted, and in good shape, it marks an era of farm advancement.

Save the old burlap bags that gradually accumulate on the farm. They may serve the place of new and expensive packing material on many future occasions.

INCREASE THE MEAT SUPPLY.

(Continued from page three)

stock in the maintenance of soil fertility, also deserves attention. The English and Scotch system, to feed for the manure, is sound. If farmers in those countries break even on their feeding, without calculating the value of the manure made, they rightly regard the feeding as profitable.

Finally, feeding will not be profitable unless laid upon a foundation of rational breeding, which resolves itself into the well-known slogan "Kill the scrub." The scrub is unprofitable. Consistent line breeding, using males of the same breed in succession, will give animals in a few generations of breeding up from native females, which are practically purebred, which are uniform in appearance and in feeding qualities and which are more salable on account of this uniformity.

Our meat supply can be maintained or even increased in the following ways:

By the revival of beef cattle raising. Up to the time of the rapid increase in price of farm lands, farms where beef cattle were raised were common. The raise in value of land and the increase in the price of grain caused pastures to be plowed up and the beef cows disposed of. A reaction is now setting in which promises to become important. A similar movement is noticeable in the eastern and New England states. Success depends on the utilization of pastures and cheap roughage.

The importance of the wool industry causes farmers to overlook the value of sheep for mutton and as weed destroyers. A small flock of sheep of one of the mutton breeds should be kept on every farm to graze the roadways, the stubble fields after grain is cut, and the corn fields after the corn is full grown. Both wool and lambs are saleable.

One of the best opportunities for sheep feeding will be found in the irrigated west. Proximity to the range and the great value of alfalfa hay for fattening sheep make this business attractive.

By increasing hog production on the irrigated farms of the west and by making pork production and adjunct of the creamery wherever conditions permit. The irrigation farmers have a splendid opportunity for the profitable production of pork of the highest quality. Pigs can be raised at a minimum cost on alfalfa, and should then be finished on grain, such as barley and peas.

At creameries, where no use is made of skim milk or buttermilk, pig feeding should be an important side line. By increasing the poultry output of the farm. Poultry and poultry products have a profund influence on the meat supply, but less attention is probable paid by farmers to the breeding of farm poultry and their care than to any other animals. With easy possibilities for rapid improvement by the use of purebred males, our farm flocks still remain, as a class decidedly underbred.

Almost every section of the country can produce more and increase our meat supply. Now is the time to help the nation and help your self in producing more livestock of every kind on the farm.

MAKE JOHN DEERE SEED BEDS BEHIND YOUR TRACTOR

THERE is a distinctive quality in John Deere seed beds that makes them especially satisfactory. Farmers everywhere have recognized this quality for many years. Wherever you go in farming sections—in all kinds of soil—you will find John Deere seed beds.

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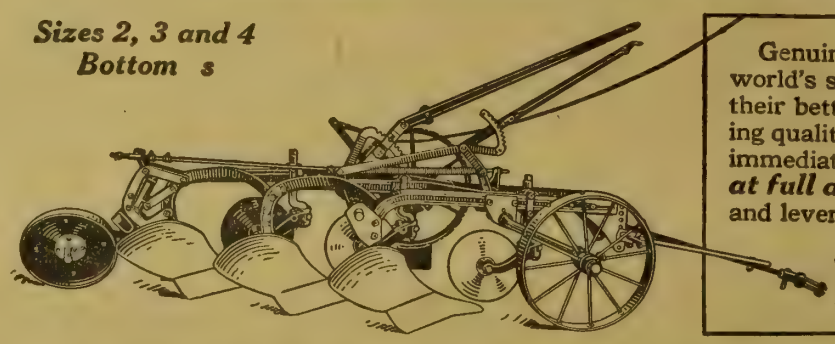

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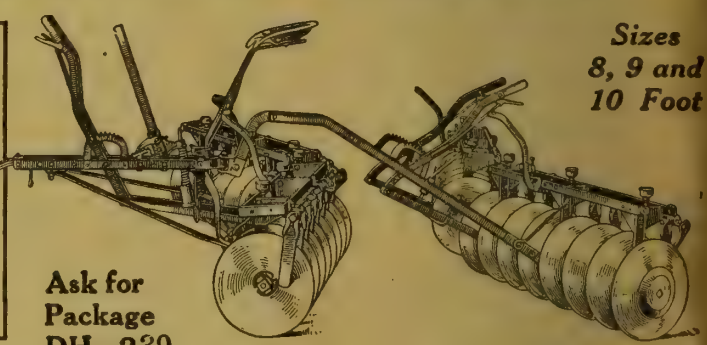

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FACTS ABOUT REQUISITIONING WHEAT

To secure a better understanding among farmers of its purpose and authority for requisitioning wheat, the Food Administration outlines the circumstances under which such action has been taken.

By section 10 of the Food Control Act, the President is authorized "to requisition foods, feeds, fuels and other supplies necessary to the support of the Army or the maintenance of the Navy or any other public use connected with the common defense." A just compensation for such supplies is provided for.

With respect to foods and feeds, the President has delegated his powers to the Food Administrator, who in turn has authorized the Federal Food Administrators of the various states to act in his behalf. Thus for the voluntary marketing of wheat by patriotic farmers has made any order for general requisitioning unnecessary. The pressing need of the Allies for this important cereal has received nationwide recognition and farmers have responded loyally. They have not only placed most of their wheat on the market within the time specified—May 1 in the Southern states and May 15 in the Northern states—but they have brought in surplus flour for redistribution and in many cases purchased substitute cereals in its place.

In the relatively few instances where wheat has been requisitioned, the amounts withheld were considerable and there was evidence of disloyalty, ranging from indifference to open defiance. In one case the owner of the wheat challenged the Food Administrator of his state to "come and get it"—which the Food Administrator did the next day.

Although the power to requisition wheat is sweeping in its scope, the Food Administration has preferred to rely on the loyalty and humanity of American wheat growers rather than to use force. That confidence in these elements of democracy has not been misplaced is apparent from the gradual movement of wheat from farm to market.

In some localities where liberal stocks of wheat were believed to be still held, inventories have been taken and the majority of owners, to whom the great necessity of the Allies was explained, promptly responded by marketing their wheat. The problem is somewhat different in each state and methods of procedure are consequently varied.

In outlining these facts the Food Administration also expresses its desire that farmers who still have wheat on hand, including seed for the next crop, place it on the market at once. Never before has there been such urgent need for wheat and with every indication of a good harvest, scarcity of seed for the succeeding crop is a remote contingency.

PRICE OF SUBSTITUTES SHOULD DECLINE

According to a warning sent millers and dealers through the Federal Food Administrators in all states, cornmeal and oatmeal should be at least 20 per cent cheaper than wheat flour, and corn flour and barley flour should be [illegible] cent cheaper.

Administrators have also been [illegible] that the attempt of certain bakers to advance the price of bread is not justified by the price of substitutes. Car shortage and storm weather caused high prices last winter, but now that there are liberal supplies of flour substitutes, high prices must be explained and justified to the state and local administrators. Every buyer is called on to assist the local Food Administrator by reporting any attempt to overcharge for substitutes.

FLIES

Production shows that one common fly frequently carries as many as 1,250,000 bacteria. The most effective way to get rid of flies is to eliminate, as much as possible, all breeding places. Destruction of flies is timely at this season of the year and a good way is the use of simple home-made fly traps. With a little suggestion these can be made by the farm boys.

DENSE.

"Where is the center of population around here?"

"I don't understand you, mister."

"Where is the population densest?"

"Dunno what you mean."

"I guess the population is densest right here," opined the stranger, and he drove on.—Kansas City Journal.

Grasshopper Control

By Harold R. Hagan, U. A. C.

So many requests for information egarding the control of grasshoppers re being received at the Utah Agriultural College that the Department f Entomology believes the following ormula for poisonnig them should be nore widely known and applied:

Bran	20 pounds
White arsenic or Paris green	1 pound
Syrup	2 quarts
Water	2½ gallons
Lemon or oranges	3

There are two fairly successful ways f mixing these ingredients:

1. Mix the arsenic or Paris green horoughly with the bran taking care o see that the poison does not merely ift through onto the floor. Mix the yrup and water, then add the lemons which have been previously chopped nd crushed. Now add the liquid to he poisoned bran slowly so that the atter will not ball up into lumps.

2. This method of mixing differs rom the other in that the arsenic is nixed with the liquids instead of the ran. It should be remembereded that he poison is not soluble and quickley ettles to the bottom of the bucket, so hat to be effective the liquid in this ase should be constantly and very horoughly stirred. If little less water hould also be used at first and the alance added late to rinse the remaining poison from the bucket. Remember that the water must be added ery slowly and thoroughly worked in e the bran. Only thorough mixing inures that every particle of bran will ave some poison on it. Carelessly nixed formulas result in loss of oison, much bran unpoisoned, and he rest with so much that the insects ay not eat it.

When the mixing is finished, the oisoned bran should be just damp nough so that a handful squeezed p will retain the impression of the ngers a few moments then slowly rumble apart as the grip is relaxed.

Scatter the poisoned bran in the ate afternoon in the infested area. f possible, the sowing of the poison hould follow soon after irrigation s the damp ground keeps the bran amp considerably longer. The hopers eat it readily while it is damp ut pay no atention to it after it has ecome dry.

Remember that arsenic and Paris reen are poisons. They should not ome in contact with the hands or ace. Children and farm animals hould be kept away from the mixng shed and the poisoned bran. Remove the poisoned bran from shoes efore walking out into the yard. Keep chickens out of the poisoned ields.

GETTING VALUE OUT OF CATS AND DOGS

There are estimated to be 100,000 logs and a like number of cats in New Mexico, a cat and a dog to each four people. Probably 50,000 of the dogs have a value as watch dogs of one sort or another. The other 50,000 have practically no economic value. Of the cats the number that pay for their keep is very small, so we may regard them as almost 100,000 sources of waste. Cats that are fed will hunt very little; cats that are not fed, as a rule, kill more beneficial birds than injurious rodents; so they are worse than waste; they are in actual detriment. Cats are worse destroyers of birds than are hawks. Rat and mouse control about granaries and mills should be based on prevention of the entrance of the rodents. Actual killing of such animals may usually be done more efficiently and with less final expense by means other than employment of cats. However, cats about such places come more closely than any others to earning a living.

Of the 50,000 worthless dogs none earn their keep. They fall into three classes: those overfed and pampered; those whose starved-skin-and-bones appearance testify to their inability to get their own living; and those that prey on domestic animals, sheep especially, and fill their stomach at an even greater loss to the farmer.

Another very vital reason for reducing the number of these animals and get their own living; and those that are convincted of being carriers of many kinds of disease of humans and of domestic animals.

In times of peace, perhaps, but not now, can we afford to feed useless animals. For every ounce of food fit for humans given to useless animals, just twice that is taken from our food supply.

The cost to the State per year for feeding these 150,000 worthless animals is great,—even though we think the amount of food supplied them is far below that supplied in other sections of the country. Our great need now is to learn where to save on the things that we used to consider worthless. Our government tells us daily where great quantities of food may be saved from waste. We used to think the dog and the cat should have the meat scraps, bones, etc., from the table. We are told now how to utilize almost every bit of these so-called "scraps."

It is difficult to estimate in dollars and cents the actual amount of such waste of food given to these animals. Some estimates give five cents a day for cats and ten cents a day for dogs. That is likely too high for our animals, on an average. Instead of trying to place a dollar and cents estimate on this waste, let us do this: Every time we feed a dog or a cat, let us figure what that food is actually worth, according to war-necessity standards, and let us figure whether that animal can actually prove it is paying for that feed. If it can not we have no right to feed it. By all means, let us not forget to do this. We have the habit.

Killing animals proven worthless, saves the loss. Their hides are worth something. Their carcasses may be used for fertilizer or poultry food and great good be gotten out of them in this way. By the destruction of the worthless cats many thousand of beneficial birds may be saved and their help in the matter of insect control will be another valuable asset to the farmer.

Finally, reducing the number of marauding dogs will make safe the raising of the much needed small flocks of sheep on the farms of our State. There is a crying need for increased wool production. On nearly every farm feed of various kinds is wasted sufficient to keep a small flock of sheep. For sheep eat forage that other animals refuse, coarse hay, grazing leavings, weeds, etc. They are most valuable in the control of weeds, and, incidentally, of insects on the farm. The worthless roaming dogs that get together in bands at night—curs and pedigreed aristocrats, country bred and town bred together,—forget all civilized teachings if they encounter a flock of helpless sheep. The result is too often a disastrous loss to the farmer with no recourse, for he does not know what dogs did the work and there is no dog-license indemnity for his loss. Even a dog-license indemnity is wrong economics—to foster a source of certain waste in these worthless dogs, and then tax it to pay for waste of still other kinds. Rather abolish these "hounds within our gates," and make the State "safe for sheep."

Let us figure for ourselves the enormous waste per year from this source and turn these worthless animals into fertilizer, poultry, sheep and wool—let us avoid this waste and help meet this crisis facing civilization by providing thus easily more food and more wool. Swat the worthless dogs and cats and so swat the kaiser.—D. E. Merrill, Biologist.

The Farmers Market Place

FOR SALE—REAL ESTATE

Farms and Acreage

RELIABLE FARM BARGAINS

We are offering this week at Woods Cross five acres of excellent garden land, with a 6-room house and barn and other improvements. The land is planted to raspberries, strawberries and garden truck. This property can be had for $6000, or will exchange for a ranch in southern Idaho or northern Utah.

We are offering the following farms this week, with full water right, all under a high grade of cultivation, on easy terms, with a small payment down:

120	acres	at	$150.00 per acre.
60	acres	at	150.00 per acre.
80	acres	at	130.00 per acre.
60	acres	at	200.00 per acre.
40	acres	at	60.00 per acre.
40	acres	at	75.00 per acre.
40	acres	at	50.00 per acre.
80	acres	at	65.00 per acre.
58	acres	at	200.00 per acre.
40	acres	at	125.00 per acre.
60	acres	at	50.00 per acre.

These are just a few of the many farms that we have for sale. If you are looking for a good farm, we can suit you on price, location and terms. For further information, call or write

KIMBALL & RICHARDS,
"Land Merchants."
Phone—Wasatch 963,
54 So. Main St.,
FARM AND RANCH DEPARTMENT,
Salt Lake City.

FARM BARGAIN

160 acres, cuts 200 tons of hay, 45 head of cattle, 4 work horses, implements, good pasture, a few apple, cherry, pear and small fruit trees, 8 room house, barn, machine sheds, wagon scales, blacksmith shop, close to school and open range, good water right. ($16,000 Terms.

FEDERAL LAND COMPANY
Ogden Utah

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City Utah.

50 ACRE FARM
I have a 50 acre farm at Elberta, Utah, for sale and can save you 25 to 50 dollars per acre on this land. Good water best of soil. Good terms. Let me tell you about it.
W. C. ALBERTSON
625 Dooly Building
Salt Lake City, Utah.

HAVE BUYERS FOR GOOD FARMS AT RIGHT PRICES

List your farm with us.

BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

Duroc Sows For Sale

A few choice Duroc gilts bred to farrow early next May, daughters of Grand Champion Richards Defender and bred to Junior Champion Richards Pathfinder. No better breeding East or West. Also a few good Boars ready for service. Price very reasonable.
We furnish pedigree and guarantee satisfaction or will refund your money and pay express both ways.
Richards Live Stock Co.
Virginia Idaho
Home of the Champion Durocs.

DAY OLD CHIX
Wise economy is quality not price, we sell cheap when quality is the main consideration.
ARCADY PLACE HENNERY
is prepared to hadnle orders large or small, shoot your enquiries for prices. Demand will be greater than ever. Order early.
A. T. SMURTHWAITE
Wellsville, Utah

Registered Duroc Jersey Hogs.
Some good spring litters. Richard Defender and Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.
ERIK W. OLSEN
Virginia Idaho

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IN EXCHANGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

LUMBER, lath millwork. Get our direct-to-consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

WYOMING
560 ACRE Cattle Ranch situated in the great Bridger Valley at Mountainview, Wyo. 2 Good Houses and all out Buildings in first class condition. This place is located near the best Range in the State nearly all free range. Over 300 head of cattle wintered off the hay crop of this place last year. The place is well fenced and crossfenced and has an excellent water right. Price $25,000.00. $12,000.00 down balance in 5 years. We have a few other places at a bargain if this don't suit. Make your inquiry today. Address
HARVEY & HARPER
Box 248 Evanston, Wyoming.

Windsor Hotel
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225 So. Main St.
125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.
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Good Rooms 75c, $1 and up.
The Windsor Hotel Co.
M. A. Scott.

Send in your subscription to the Utah Farmer today.

THE FARM HOME AND ITS SURROUNDINGS

(Continued from page 1)

some value to the owner who uses the place as a home for himself and family.

In this day and age of the world when everyone is grasping for more, the home grounds are often neglected. True there are many beautiful country homes, but many are not, and as home is a place where the careworn heart finds rest from the toils of life and the weary soul refuges, there is nothing on earth so inspiring as far the first glimpse of home, when returning from work or play, to be as beautiful as we and nature can make it.

I have seen homes where the interior was as beautiful as could be—nothing omitted—yet they were as plain as could be on the outside. Whoever heard of or read of a palace but what the grounds were mentioned first and the surrounding decorations are a prominent feature in all worth-while places.

Of course the location of farm buildings and driveways lend beauty, but, as all do not have this arrangement, all places may be improved by the planting of trees, shrubs, vines and flowers, nature's decorations.

As suggested above there are modern ways of arranging a lawn and planting trees and shrubs. Many of our Utah people are moving out of the small towns and building homes on their farms and I want to urge upon them to consider the farm home with its surroundings and plan very carefully before they start to build.

Our state officials are to be commended for the work they are doing urging us to clean up our back yards. We may have an attractive front yard with flowers and shrubs but our home surroundings are not good unless the back yards are kept clean. Clean up the eyesores and cover up unsightly places with vines as nothing is prettier than vines trailing over buildings, fences, etc., and some vines are good bloomers. All tall trees should be put back so as to form a background. As the farmer's wife is a very busy woman do not omit the old-fashioned hardy flowers and you can have almost a continual abundance of blossoms all summer through, without taking the time in the spring for planting.

The time we take to make home more beautiful is well spent when we consider the influence on the family, especially the children. Most all children love flowers and are very easily impressed with the beautiful, and let this be the duty of all parents to teach their children, while young, to love the pure and beautiful. Do not tell the children to let the flowers alone but let them live in God's out-of-doors with nature's handiwork as their playthings.

The children will herald the blossoming of all the different flowers. Teach them the names for I know children who do not know one flower from another. We put out roses one year and when they began to bloom our little one pulled the buds and kept them gathered as fast as they bloomed and would come in with a handful and say, "I have a bouquet for you." We would have three or four bouquets in the house at once. And this is better for a child than flowers he cannot touch.

One of the earliest memories of my childhood is the pretty flowers which my sister and I tended when small children. My home was an old unpainted house, but was set among lots of flowers and trees with a woods for a background, and when the trees and flowers were in bloom it was a picture to remain in my memory forever.

The cost of time and labor is so small as compared to the pleasure that comes from good home surroundings, that all of us should help to create a sentiment for better farm homes, well planned barn yards and buildings and more attractive surroundings.

THE I H C LINE

GRAIN MACHINES

Binders Headers Reapers
Rice Binders Push Binders
Harvester-Threshers

HAY MACHINES

Mowers Rakes Tedders
Combined Side-Delivery Rakes and Tedders
Side-Delivery Rakes
Hay Loaders
Sweep Rakes
Hay Stackers
Combination Rakes and Stackers
Hay Presses

CORN MACHINES

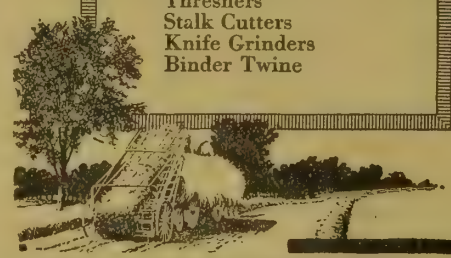
Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Huskers and Shredders
Shellers Stalk Rakes

TILLAGE

Disk Harrows
Peg-Tooth Harrows
Spring-Tooth Harrows
Cultivators (One-horse)

GENERAL LINE

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Farm Wagons
Farm Trucks
Manure Spreaders
Cream Separators
Grain Drills
Fertilizer and Lime Sowers
Feed Grinders
Stone Burr Mills
Threshers
Stalk Cutters
Knife Grinders
Binder Twine



THE American farmer produces more per man than any other farmer in the world. Using labor-saving machines, he produces record crops with less hired help than is required under any other system. Therefore, in the present crisis, with help so scarce, every farmer should use the most efficient farm machines he can get, the only kind that can be depended upon to make the necessary increase in production.

The International Harvester Company of America markets the full line of high-grade machines listed in this advertisement for disking and harrowing seed beds; planting and cultivating crops of all kinds; cutting, making and storing hay; cutting, binding and threshing small grains; harvesting, husking and shelling corn; shredding corn fodder, filling silos, fertilizing fields; skimming cream; and grinding feed. It sells efficient farm power machines, engines and tractors operating on the cheapest fuels a farmer can buy. It provides wagons and motor trucks for all kinds of farm hauling.

Many of these machines have been used by American farmers for close to seventy-five years. They have helped to establish the standing of the American farmer. They are better today, more efficient and more economical than ever before. In many cases, one or another of these machines will solve the hired help and farm power problems on individual farms.

International machines are sold through ninety branch houses and over thirty thousand local dealers. Any customer can place an order, or command the services of this organization, by a telephone call to the dealer, or a visit to the nearest town.

It is important this year that all orders for machines be placed as early as possible, preferably months in advance. See the local dealer, or write us about the machines you are going to need this year, and do it now.

International Harvester Company of America
(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

CHAMPION DEERING McCORMICK MILWAUKEE OSBORNE

WORK—THE JOY OF DOING IT

R. A. Farville.

No greater blessing can come to anyone than work—the knowledge of and ability of doing things.

Yonder youth with swinging step, with fists dug deep into the pockets of his threadbare coat and a cold luncheon wrapped in paper, tucked beneath his arm, tastes a finer, sweeter joy than all luxury can bring.

His is the pleasure of incentive—the glory of work.

For there is zest to it all. The quick spring from bed at the alarm clock's summons, the hastily-swallowed breakfast, then out into the winelike air of early morning. To work—vigorous work of brain and brawn, whether it be pegging away at a desk of directing the eternal grind of clanking machinery.

It is occupation—accomplishment!

Do not pity these work-a-day folk. Save your sympathy for the hapless and hopeless idle fellows— the unfortunates or unwillings; alike commiserable.

Joy goes with the working masses. There is joy in the noonday luncheon, whether in a gilded cafe or a cold snack hastily devoured before the whistle blows."

The evening meal is a feast to the weary man, and his well-earned rests is the greatest joy of all.

Hard work is the best of all cures for insomnia.

Thank God you can work!

Though your office labors strains your nerves and racks your brain, though the "shop" takes the best of your strength and vitality—be glad to be living, an active part of the working world.

You must earn your amusements before you can enjoy them. Ennui has no part in the strenuous life.

Be glad, for conscience sake, that you are not one of those most miserable of all men, a fellow without a job—a human machine standing idle, rusting and losing its value from disuse.

Thank God you can work!

When sorrow and grief come, when you seek to forget, to crush out cruel thoughts, thank God that you can absorb yourself in your occupation, plunge deep into the details of your duty.

Thank God that you can work—that you can grasp your pay envelope and say, "This is mine, the rightful pay for the labor of my brain, the just earnings of my strong right arm."

Be thankful, Employer as well as Employe, for the joy of working.

You know the pleasure of it.

Do not deceive yourself by the promise (nine times in ten a pleasant little fiction) that by-and-by you will retire, ease up, end your life in idle luxury.

The business game is not alone for the pleasure of the spoils, but for the joy of playing it.

What the world may call greed and avarice you know to be the fascination of succession—the intoxication of accomplishment; and it will keep you untiringly at it—on your mettle in the battle—till the end of life.

For life is work.
And work is life.

Reports indicate that there has been tremendous slaughter of dairy cows in Europe, due not only to scarcity of beef cattle but also to scarcity of forage. Already several commissions have visited this country investigating the possibility of securing dairy cows in America for shipment to Europe when the war is over. Dairy authorities say that we shall probably export millions of dairy cows in Europe after the war. Of course this means that dairy cows will bring premium prices, and the wise farmers, with his eye on the future, who increases and improves his dairy herd at the present time, is sure to reap a rich benefit later on.

Cold, damp, poorly lighted and ventilated poultry quarters favor the spread of such disease as roup. Such contagious disease as these are difficult and sometimes impossible to control unless given attention in the early stages. Whenever preventive measures fail, separate sick birds from the flock as soon as there is evidence of disease, and then consult expert advice to effect a cure.

The U-Boats are wasting some of our food; don't be a U-Boat.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 48 JUNE 29, 1918

Onions and How to Grow Them

WRITTEN FOR THE UTAH FARMER BY R. E. MILLER.

A few years ago a man came into our town and leased a tract of ground not far from town. He agreed to pay a good rent for term of five years. Being a stranger to most of us, we watched him and made many remarks about his way of doing things. To our great surprise he did not plant any thing the first year, he spent all the time manuring and cultivating it. Many a one said "he does not know what he is doing." This did not change the plans any for the stranger went right on with his work and made as good a seed bed as any one would care to see. The next spring he planted the little farm into onions and that fall when he harvested his crop we all were willing to take off our hats to him, for he had taught us a lesson. The crop of onions that fall was so large it paid for the two years work and made a good profit for the man who had so carefully worked out his plans.

Even now I am not ready to recommend that one should do just as he did, but the lesson we learned was worth a great deal to us. It pays to fertilize the soil and prepare the ground for the crop you are going to plant.

The onion is one of our most important intensive agricultural crops. The market price will fluctuate more for onions than possibly any other crop. Acreage planted and production vary so much it is hard to know what the market will be. Some years the price will be double what it was the year before. Some of our successful onion growers who keep at the game all the time whether prices are high are low, estimate the cost of producing an acre of onions about $75.00 to $100.00, which includes labor, seed, hired help and rent of land. It is not uncommon to receive $300.00 per acre gross for onions, showing a profit of about $200.00 per acre. Of course this is on land well manured and cultivated and work is done or overseen by men of experience in onion growing.

Any farmer can succeed with onion growing if he will meet the conditions. First you need a good rich soil, and any well drained land can be made productive by the application of well-rotted manure. Do not apply coarse manure and plant immediately. If you have nothing but coarse manure, apply that, but defer your planting for one year and let it rot. Plow the ground deep in the fall. Give the ground a thorough harrowing early in the spring in order to let the gound settle before planting. For to plant successfully you must have a smooth, even, well-balanced surface. And note that it is of the first importance to plant very early in spring. This is so because the onion makes its growth at a comparaively low temperature. When the mercury runs from forty to sixty-five is the time to make onions. When it gets up to eighty and 100 the onion grows no more, but ripens up rapidly. So the successful onion growers have their seed ready and their drill ready, and the first day in spring when the top soil is thawed out and dried out enough they do the seeding. Of course, you must observe the principle that for any seeding the soil must be dry enough for tools to work. Do not take poor seed as a gift. Get seed that costs you three dollars per pound. Economy in buying seed may cost you the crop. Poor seed is poor investment—it is dear at any price.

Be careful to sow evenly and thinly. Test the drill upon a sheet or a newspaper before going into the field.

If you plant too thickly, you will have a lot of thinning out to do. And that means not only much labor and waste of seed, but it retards the crop by disturbing the plants left. So care at this point is very profitable. The onion does not germinate rapidly like radish and cabbage, so you may not see the plants for three weeks after seeding. For that reason it is necessary to have the soil clean of weeds This can be secured by some clean culture crop the year before or by summer fallowing. But your chance of a good crop is made 50 per cent better by having your patch reasonably clean of foul seeds before you plant. The more weeds you have the greater the cost of labor for weeding. The rows should be fourteen to sixteen inches apart, and this gives room for a hand cultivator. Start it as soon as you can see the rows. To encourage a quick growth you must keep the soil loose. The weeds among the plants must be hand pulled. A hand hoe, will be found very helpful.

The land in the early spring must be put in excellent condition to get best results. Best results seem to be obtained in sand loam, particularly under the system of planting and thinning, but heavy soil is not objectionable except for the fact that it is difficult to obtain a stand by drilling in the field. Any soil should be well fertilized and particularly the heavy, for onions, like most of our garden truck, require an abundance of fertilizer to produce fancy stock, and we all agree that it does not pay to grow any other kind.

A heavy coat of manure not only acts as a fertilizer, but in our heavy soil it supplies humus, which is very necessary in producing root crops, for a compact adobe will produce an ill-shaped bulb unless by cultivation the soil is kept loose, and this is well

(Continued on page 16)

A Field of Utah Onions That Will Yield a Good Profit to the Owner.

The Answer to the Farm Labor Shortage

Plowing

Harrowing

Planting

Reaping

THE farm labor situation is serious. And little relief is in sight. The new draft will take more men. More horses and mules must go. But, in the face of these handicaps *production must be increased*—and it can be if you adopt the right means.

The Cleveland Tractor has shown the way on thousands of farms. It has successfully replaced muscle with machinery. It has proved itself the modern "Man-of-all-Work."

The Cleveland Tractor plows as much ground as *three* good 3-horse teams and three men—eight to ten acres a day.

It actually does the work *better*. And it harrows. It plants. It reaps. It cuts ensilage, fills silos, turns saws, hauls manure spreaders and road machinery, drags logs, and does the hundred and one chores that mechanical power can do about the farm. It delivers 12 horsepower at the drawbar and 20 horsepower at the pulley. But it weighs less than 3200 pounds. The

Cleveland Tractor

travels on its own tracks, like the giant "tanks" on the battlefields of Europe, and will go practically anywhere. With 600 square inches of traction surface constantly on the ground, it goes through mud, sand, clay and gumbo without miring, floundering or packing the soil.

It steers easily—by the power of its own engine,—and will turn in a twelve-foot circle. It is so small that it can readily be operated under and among small fruit trees. It requires less housing space than a horse.

Rollin H. White, the well-known engineer, designed the Cleveland Tractor. It is built under his supervision—from the best materials. Gears and tracks are protected from dirt and mud, and are specially built for long service.

Let this modern "Man-of-all-Work" fill the gaps on *your* farm. Let it help you produce larger crops, with less help—and incidentally make greater profits for you. Write us now for detailed information and the name of the nearest Cleveland dealer.

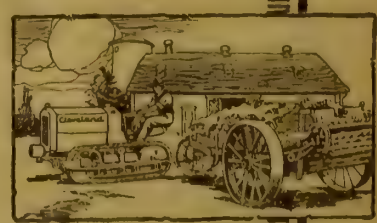
THE CLEVELAND TRACTOR COMPANY
19091 Euclid Ave., Cleveland, O., U. S. A.

The largest producer of crawler type tractors in the world.

Sawing

Grading

Orchard Work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Irrigation and Soil Fertility

By E. O. Larson, B. S.

Do we fully understand the relationship between irrigation water and soil fertility? This question, of such vital importance to Utah agriculture, is insufficiently thought of by the irrigator. It is a well known fact that good soils produce crops with less water than do poor soils. The best means of maintaining soil fertility is by economical use of irrigation water.

The main plant food element of the Utah soils is nitrogen. There are other plant food elements just as important to plant growth but they are generally not lacking in our soils. The deficiency of nitrogen in the soil is made up by one of the following methods: by adding fertilizers, plowing under stubble and green manure crops, rotation of crops, or by summer fallowing. The organic matter, added to the soil, decays and the nitrogen formed readily dissolves in water, more so than any of the other plant food elements and here is where the danger of over irrigation lies. If excess irrigation is practiced this soluble plant food is carried away by the water which leaches through the soil; at any rate it is carried to a depth beyond the root area of the plants, where it is of no value. The question may be asked, "why doesn't the nitrogen leach out of the soils when our heavy rains and snow come?" Leaching by precipitation in the West is of little significance as we do not as a rule have very heavy rains at any one time. The heaviest storms add only a few inches of water to the soil at once. For example, the heaviest rainfall recorded in Utah during a period of twenty-four hours is about three inches whereas many irrigators have been found to apply twenty-four to thirty inches in single irrigations. In connection with this question there is still another point. The organic matter added to the soil, as explained before, is added either in the spring or fall. Decay is not active in cold weather. The bacteria that work on the organic matter to form nitrogen are most active in warm weather. In most of the Western States the rains come during the months of cold weather and the nitrogen is not dissolved to a very great extent at this time. As spring comes on, decay takes place rapidly and the nitrogen is readily used by the plants.

The results of over irrigation are becoming more serious as time goes on. Cases have been noted where six to fifteen acre-feet of water have been applied per acre during one irrigation season. These are extraordinary cases but they clearly illustrate the lack of knowledge concerning the relationship of irrigation water to soil fertility and to the water logging of land. The area of swamp and water logged land in every Western State is rapidly increasing. Under present methods of applying water the building of an irrigation project on the bench lands must necessarily be followed by a drainage district in the low lands in order to maintain the productivity of the soil. It is entirely possible however, to prevent the need for drainage by using more care in the preparation of the bench lands for irrigation and in the application of water to them.

The first place to begin efficient irrigation is to use convenient sized streams and to avoid running them over long stretches of land. The lack of sufficient cross ditches to make possible more rapid irrigation over a given tract causes the upper land to be over irrigated and the lower land to suffer for lack of water. Often crops are irrigated when they do not need water. Such applications are deterimental to the soil and not beneficial in any way. By using water economically on our irrigated lands we can naturally increase our area, which will greatly increase the total amount of food produced. In most localities it is not a question of scarcity of water but rather one of spreading what water we have uniformly over more land.

Although the best irrigators see very many reasons why excessive irrigation must be stopped in order to maintain the fertility of our soils, the impressions of a Federal Land Bank appraiser who recently visited Utah should alone convince every irrigator of the urgent need of preventing over irrigation from this moment on. This appraiser was very reluctant about recommending loans on any farms lying within a certain 5,000-acre tract that is now highly productive simply because he feared that under present irrigation pratcice the lands would gradually but surely decline in productive power and therefore in value. Though most of the farmers in this particular district seriously believe that there is no danger of waterlogging their lands, the appraiser, who has made a very careful study of irrigation and drainage conditions throughout the west said, "One of two things is sure to come. In ten years these farmers will either have to install a drainage system at considerable expense, or they will be able to use their lands only for pastures, and very wet pastures, too, unless they begin now to irrigate with very much less water than they are now using."

Irrigators can ill afford to permit Federal officials to entertain ideas of this sort when it is easily within their power to prevent the conditions which give rise to such impressions. Looking the problem squarely in the face we must admit that economical use of irrigation water will preserve soil fertility, increase our crops by increasing the irrigated area, and prevent the future water logging of our low lying lands.

A scene on one of our large ranches.

More Profit In Range Cattle

Dr. W. E. Carroll, Utah Agricultural College.

Probably no single piece of legislation will affect so favorably the improvement of the range cattle of the State as the so called "Purebred Bull Law" which went into effect January 1, 1917. This law provides that anyone turning loose or ranging "any cattle upon the public domain, range, or forest reserves of this State," shall keep with them "during the breeding season of each year, one bull for every forty head, or fraction thereof, of female breeding cattle so ranged."

For the sections of the State which live up fully to the spirit of the law the future holds a rich reward. This spirit of the law referred to means not only that the bull shall be a purebred, but that he shall be a good purebred. The fact that an animal is registered is not sufficient guarantee that he will be a good breeder—he should come from good stock and should be a good individual. There is little hope that the grade of cattle will be improved if the bulls used would have made only ordinary steers had they been castrated while young. Get a bull that will attract attention and his calves will attract buyers. "Like begets like" is the only safe maximum for the breeder to hold before him.

The price which can and should be paid for bulls to run on the range will depend to a considerable extent upon the quality and number of females and upon the feed and care to be given the cattle. The very highest priced bulls can only be used in highly improved purebred herds. Most range sections, however, could well afford to pay more for their bulls. In fact, they cannot afford not to pay more. If the bull does what the law supposes—gets 40 calves, they need be worth only $5.00 a head more than the average to pay $200 more each year for their sire. If these better calves are obtained from only 30 to the 40 cows the difference would be $150 each year. This difference in price may not sound possible where cattle are sold by the head according to their age. The marketing of livestock is fast reaching a saner basis, so that the man with good cattle will, as he should do, receive more for them. Where the cattle raised are to be fattened on the place there is no question as to the advisability of using the better sires.

The old argument that "my bull may not sire my calves because my cows are all mixed up on the range with my neighbors' bulls and cows" should no longer hold. Where such a condition exists that several men utilize the same range they should get together and insist that all bulls turned out be of a uniform good grade. It would also be a splendid help to their bank accounts to insist that they all be of the same breed.

Most of the better breeders feel that one bull for each 40 head of breading females is not enough, and they turn out one bull for each 25 cows.

Another point of management which is well worth considering is to keep the bulls and cows separate except during a comparatively short breeding season. This will necessitate a separate pasture for the bulls, though this is more than offset by the advantage of greater unformity of age in the calves produced. The time to turn the bulls with the cows will depend upon the most desirable time for the calves to come. It may be advisable to hold the bulls out till June or July and then leave them till the cows are gathered in the fall. It is true that some of the cows that are "shy breeders" may not settle in calf during this time. When such cows are found it is much more profitable to replace them with regular breeders. Unless there is some very good reason, every cow coming from the range in the fall without a calf should be considered a "slacker" and should be sent to the butcher to do her last "bit" toward the defeat of "Kaiserism," and be replaced by one capable of making a yearly contribution toward the triumph of right.

The three "allies" then for more and better beef are, (1) Better sires—these will automatically and gradually improve the females; (2) a higher percentage of calves and more uniformity in their age; (3) More and better feed and care for the development of the young stock.

Don't expect the public to remember your business too long without assistance. The public has a lot of other important things on its mind.

DAIRYING

FEEDING THE DAIRY CALF

A. B. Nystrom.

With whole milk selling at uusually high prices and the possibility of getting from 60 cents to 75 cents per hundred-weight for skim milk when fed to hogs at the present time, the question the dairy farmer must answer is: Does it pay to raise dairy calves now?

Dairymen who sell butterfat and keep their skim milk on the farm will find just as much profit in raising heifers as in raising hogs. The practice of killing the calves cannot help but prove disastrous, though the effects will not be felt for three or four years. The most prosperous dairymen are those who look ahead and plan for a better herd in the years to come. This better class of dairymen use a good purebred sire and save all the heifer calves from their best cows, regardless of the cost of raising them. And the same argument holds true in the condensery districts, for by using a minimum of whole milk with the proper grain mixture the calves can be raised at a cost only slightly greater than when skim milk is available.

When Cows Should Freshen.

The dairyman who supplies a small retail trade must have a definite supply of milk all the year round. He must also have the same quality of milk at all times. The best practice for him is to have his cows freshen all through the year, so that only one or two are dry at any one time. The best practice for most dairymen, however, is to have their cows freshen in the Fall. This gives a high flow all winter and when grass comes on the spring there is tendency for a rise in the flow, thus maintaining high production throughout the greater part of the year. Winter prices are always higher than in summer, the reason for this being that many farmers milk cows only during the summer months. Fall calves are more easily raised than Spring calves. The dairyman has more time to look after them in the fall, and by the time spring pasture is ready fall calves will be old enough to use it. Pasture does not benefit spring calves; it may even cause scours and set the calf back a month or two.

If the cow has been properly fed during pregnancy the calf will be strong and vigorous at birth. Most of the trouble in calf raising comes from lack of proper development before birth. The cow should get nutritious, succulent feed of a laxative nature all through pregnancy and especially when she is dry. The practice of turning dry cows to a straw stack and giving them no other feed is not giving the calf a fair chance, to say nothing of the detrimental effects on the subsequent milk-producing ability of the cow.

The calf should be taken away from its mother soon after it is born. Some dairymen allow the calf to run with the dam two or three days. This practice is commendable if the udder is caked, as the manipulation given by the calf will help to increase the circulation and carry away the congestion. However, if you think you will have difficulty in teaching the calf to drink from a pail it is best never to allow the calf to touch the cow.

In any case the calf must have the "first milk" or colostrum as it is called. This acts as a purgative and puts the digestive organs of the young calf in the proper condition to handle the normal milk which comes later. Feeding three times a day to calves less than a week old is a good practice, being careful to feed in small quantities and have strictly clean, warm milk fresh from the cow.

The amount of milk to feed varies with different calves. A weakling can use only six to eight pounds per day for the first week, while a stronger one will be able to handle from 10 to 12 pounds daily. Feed whole milk alone until the calf is 10 days to two weeks old. Then begin adding a calf meal in small quantities, increasing the amount very slowly from week to week, decreasing the amount of milk slightly until it is getting about eight pounds of milk and eight to 10 pounds of the substitute daily. This amount of milk should be fed on the average up to 10 weeks of age. Some calves will not respond to the substitute as well as others, and all calves will do better on the calf meal when a little milk is given with it.

If skim milk is plentiful it is wise to keep feeding it until the calf is four to five months old. However, most calves will grow well on the substitute alone after they are 10 weeks old, provided they have never had a setback, have learned to eat grain and hay and are in good thirfty condition.

Feeding Grain.

Calves should learn to eat grain when they are about 10 days old. A little bran or ground oats (sieved) rubbed on the nose after its meal of milk will teach the calf to like it. Drop a litle dry grain in the pail after all the milk is consumed and the calf will soon learn to look for it at every meal. Once it becomes accustomed to grain a supply may be kept before the calf constantly until about one to 1½ pounds is consumed daily. Then the allowance should be limited.

A mixture of 100 pounds of bran, 100 pounds of cornmeal (coarse), 100 pounds of ground oats and 50 pounds of oilmeal makes a good grain for calves. The amount of oil may be changed to suit the needs of the calf. This acts as a conditioner and should keep the bowels just right. Whole grain gives just about as good results as ground grain after the calf is eight weeks old, the reason for this being that calves must chew the grain well if they are to get the most out of it. This they will not do if the gain is ground.

Feeding Hay.

Calves learn to eat hay just as soon as grain. The first hay should be either grain hay or timothy. The legume hays often cause digestive troubles except with older calves. When calves are about two to three months old they can usually handle clover and alfalfa hay very well. Good clean hay should be kept before them constantly.

"Substitutes" and Supplements.

There is really no good substitute fo milk to be obtained at any price. This fact has recently been proved by scientists, though practical feeders have thought so for years. But supplementary feeds can be found that will cut the cost of raising calves materially. Aside from the patent calf meals on the market the following home-mixed feeds can be fed to advantage if used by a careful feeder:

Mixture No. 1.

Low grade flour	16 2-3 pounds
Whole flaxseed meal	33 1-3 pounds
Linseed oil meal	50 pounds

Directions—Take 2½ pounds of the mixure as a daily allowance for each calf. Scald with boiling water. Afterward add more water so as to make two gallons. Add a little sugar and salt before feeding.

Begin to add a little of this mixture to the whole milk when the calf is two weeks old; gradually decrease the milk and increase the substitute until a complete change is made. This should take from 10 days to two weeks. Weak calves must have a little of the milk for two or three weeks longer.

Mixture No. 2.

22 pound ground oat flakes.
10 pounds flaxseed meal.
6 pounds flour middlings.
11 pounds fine cornmeal.
1½ pounds blood meal flour
½ pound salt.

Directions—Make a gruel by adding 3½ to four ounces of the mixture to each quart of water. The meal is first stirred with a little cold water to get out the lumps and convert it into a paste. A quart of boiling or very hot water is then added and the mixture thoroughly stirred and allowed to stand until lukewarm, in which condition it should be fed. Begin feeding at two to three weeks of age, making the change very gradually as with the Mixture No. 1.

It takes milk to make strong, healthy calves, but good results can be obtained by substituting a part of the milk with one of the above mixtures.

Calf-Feeding Pointers.

1. Feed three times daily the first week.
2. Keep the calf a little hungry rather than overfeed.
3. Be regular in time and manner of feeding.
4. Make changes in the ration very slowly.
5. Absolute cleanliness as to pail and quarters is a necessity.
6. Allow the calf plenty of exercise out of doors and access to dry, warm quarters.
7. Keep the calf growing constantly.

PREPARING CREAM TO CHURN

G. L. Martin.

Good butter can be made from sweet cream, but it requires a longer time to churn. More butterfat is lost in the buttermilk and the butter usually tastes flat. In the country, its is customary to sour the cream before churning which largely overcomes these difficulties.

There are two ways to ripen cream and both are practical on the farm. The first and by far the most common method is to keep the cream cool, as near 50 degrees as possible, until a short time before churning then warm it to 70 degrees F., and allow it to sour or ripen naturally. The time required to ripen cream properly will depend upon the thickness of the cream and the amount of acid already present. As a rule thick cream requires longer to reach the churning point than does thin cream, for the reason that it has less of the butter milk or the cream present and more butterfat. The more serum present the more milk sugar consequently a larger amount of acid. Thin cream does not require so long a time to reach the churning point as the acid develops faster, there being more milk sugar present than in thick cream.

It is a good plan to skim the cream as thick as convenient as it will keep sweet longer and is not so liable to become over-ripe before being churned. The best flavored butter can be obtained from cream that is kept not to exceed three or four days. A longer time is conductive to the development of objectionable flavors in the cream which are bound to appear later in the butter.

The ripening of cream by artificial means is coming into use on the farm in many places. This is accomplished through the use of a starter which is added to the cream a short time before churning. A starter is a pure culture of lactic acid bacteria which is added to the cream to hasten the development of acid and to give a desirable flavor to the butter. Even the best cream contains a great many undersirable bacteria which if given an opportunity will decompose the casin and lend more or less undesirable odors and flavors to the butter unless held in check by low temperatures or by the development of lactic acid with a starter. Adding starter to the cream gives the lactic acid bacteria the lead then they are able to hold the others in check for a few hours until the cream is churned.

How to Make Starter.

A home made starter can be developed by securing a gallon of clean flavored skimmilk as it comes from separator and setting it at 70 degrees F., which is about average room temperature until it is well soured. It will take about 24 hours to sour it sufficiently. A good starter will form a smooth, solid curd with a pleasant flavor. When it is poured from the vessel it will break with a square, sharp cleavage, appear creamy and will show no hard lumps. A poor starter will show pinholes in the curd, have a bad flavor and will be granular when poured. It frequently shows whey on the surface or the curd may float on top of the whey. This is an indication of the presence of undesirable bacteria. A poor starter is injurious to the cream as it gives the harmful bacteria the lead and defeats the purpose for which it is intended.

A good starter can be made from buttermilk which has a clean, pleasant

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sour flavor. A gallon of this put into the cooler and kept cold between churnings will serve the purpose very well. In fact, many times the starter is continued on this way for many months and in some cases for years so long as it retains its desired flavors. However, it frequently happens that a starter made this way will develop undesirable flavors after only a few days.

A commercial starter may be used to good advantage. These are pure cultures of lactic acid bacteria which are put on the market and are used quite exclusively. These come in small bottles and have to be propagated by inoculating a small quantity of milk and allowing it to sour well before putting it into the cream. The directions usually come with the samples so they can be used with perfect safety.

The commercial starters need to be set at room temperature the same as do the home-made starters. The only difference is in not adding the pure culture to the cream until a gallon or so of the skimmilk has been set and developed sufficient acid.

The Churning Point.

In ripening cream, it is very necessary to know when the churning point is reached, otherwise the cream may become over-ripe which is very injurious to the fine flavor so desirable in fine butter. A good way to tell when the cream is ready to churn is by the taste and the appearance. Sweet cream will have a clean, pleasant nutty flavor and the surface will usually appear yellow, smooth and soft like velvet. When the cream is ripe and ready to churn it will have a clean, pleasant sour taste and will appear more or less white on the surface. Cream needs to be churned when it is ripe or less cooled to a low temperature and held there until just before time to churn, then heated to about 56 degrees F., and churned immediately.

THE SELECTION OF A HERD SIRE

L. H. Hatch.

One of the most important matters the farmer dairyman is called upon to decide is that of the selection of his herd sire. The sire, from the breeding standpoint, represents one-half the herd. One or two scrub cows in a herd will transmit their poor qualities to their own calves only, while a scrub sire will lower the quality of the entire herd. According to Henry's Feeds and Feeding, the average yearly production of the four leading dairy breeds, as reported from four Experiment Stations, is as shown in the table:

	Milk	Fat	Per cent
Holstein	10,491.0	358.7	3.42
Guernsey	6,263.5	313.7	5.0
Jersey	5,732.8	302.5	5.29
Ayrshire	6,909.0	248.6	3.6

A purebred dairy sire is the result of the harmonious blending of the blood generations of animals with the same tendencies, with that of milk production most important. A scrub sire is the result of the attempt to combine the blood of animals of various tendencies, tendencies that antagonize each other.

A vigorous, prepotent, purebred sire, especially when used in a scrub herd, may represent much more than half the herd, as the ability given him by generations of careful selection and mating will stamp his own qualities upon the offspring to a far greater degree than will the dam of mixed breeding.

The average production for all cows in the country is something under 4,000 pounds milk and near 175 pounds butterfat in a year.

This shows that the average purebred Holstein-Friesian produces sometime more than two and one-half times the amount of milk and twice the amount of butterfat produced by the average cow of the country, with the other breeds ranging somewhat lower.

What is the actual money value of a purebred sire to the average farmer? Let us take for example a purebred Holstein-Friesian sire and a herd of twenty-five average cows. Suppose an average of twenty of these produce calves each year for three years, and half the calves are heifers. This makes thirty heifers. These heifers at maturity should produce at least as much as the average of their dam and sire's dam, which would be about 7,000 pounds of milk, or an increase of 3,000 pounds, which at $3 per hundred, a very low figure, would amount to $45 per year for each cow. Deducting two-thirds this amount for increased cost of feed (probably an excessive amount) we have left $15 per year per head the daughters will return in excess of the dams. These daughters should be useful for more than four years, but even at four years the thirty heifers would return a total of $1,800 over and above the amount produced by their dams in the same length of time. Discount these figures 50 per cent and we still have an amount that, added to the cost of a scrub sire, will buy a purebred animal and leave enough over to pay a higher rate of interest than almost any investment on the farm. In addition to the great increase in milk production, the daughters are far more valuable as breeding animals.

In the second cross there remains but 25 per cent of the original scrub blood, and the production should be materially increased over the first cross, though not so much in proportion.

WHY CREAM TESTS VARY

L. W. Morley.

The farmer who sells cream is sometimes surprised at the variation in the test reported by the creamery. In the early part of the summer the tests tend downward. The farmer should not assume that a variation in the tests means either carelessness or dishonesty on the part of the cream buyer. Here are several factors which affect the richness of cream, and which make a variation in the test from time to time.

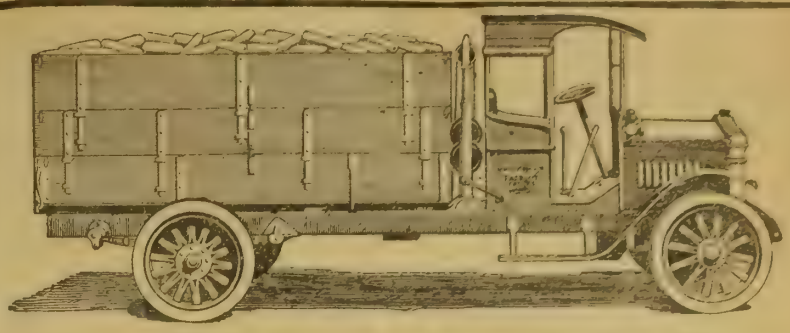
First of all the richness of the cream varies with the richness of the milk. In early spring and summer there are more fresh cows which results in a lower testing milk and as a result of this the cream goes down in proportion. A herd of cows may produce milk averaging 4 per cent in the fall and in the early spring and summer the average will run as low as 3.6 per cent. This much difference in the richness of the milk will cause a variation from 5 to 8 per cent in the cream test.

The next most important cause for variation is the speed of the separator. The faster the separator is run the larger the proportion of skimmilk and the smaller the proportion of cream. Consequently the high speed yields a richer cream. If a machine that is supposed to be turned 60 revolutions a minute is reduced to 40 the cream will be considerably lower in test.

Another important cause of variation in cream tests, and sometimes the most important, is the amount of water or skimmilk used in flushing out the fowl. The difference of a pint used will make a noticeable difference in the test of the cream. A difference in the temperature of the milk separated will also have some effect. Some separators are more sensitive to temperature than others. With some a difference of 20 degrees in the temperature of the milk when separated will make a difference of several per cent in the test without affecting the thoroughness of the separation to any marked extent. It should be understood that these variations occur not as a result of more or less loss of fat in the skim milk but as a result of a larger proportion being taken out in the form of cream.

WHAT THE COW-TESTING ASSOCIATION CAN NOT DO.

It can not compel a dairyman to dispose of his poor cows if he is determined to keep them. It can not make him feed according to production nor practice economy in the management of his dairy herd. It can not require him to dispose of his scrub bull and buy a better one. It has never yet demanded the planting of legumes and the building of silos. It never will compel, but it always will encourage, economical improvement of the herd, of the farm, and of the business.—U. S. Department of Agriculture.



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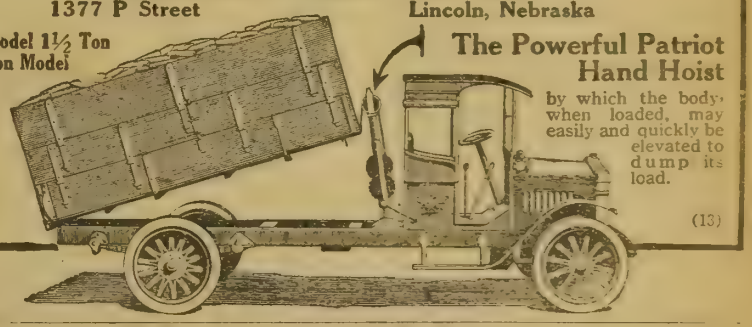

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(13)

GREAT BRITAIN NEEDS DAIRY PRODUCTS

A cablegram from the British Ministry of Food emphasizes the necessity for building up a food reserve and urges that there be no slackening of effort on this side of the Atlantic.

"Supplies of butter and cheese," the cable states in part, "are still inadequate to meet the requirements, but it is hoped that imports from America will remove anxiety as regards our position in these commodities."

The man who puts off the purchase of a cream separaor because he thinks he can't afford it, or for any other reason, is making a serious mistake, because the machine will pay for itself the first year from its own saving, and all that it saves for the owner after the first year is clear gain.

The silo is one of the modern mortgage lifters. It enables the farmer to save sufficient funds, through using his own crops, to meet all financial obligations.

LADIES, BEWARE

Doctor: "This is a very sad case, sir; very sad indeed. I much regret to tell you that your wife's mind is gone—completely gone."

Peck—"I'm not one bit surprised. She's been giving me a piece of it every day for the last fifeen years."

—Chicago Herald.

Patsy: "Hello, Mike! They tell me that yer sister that was afther marrin' Donovan last year is a happy mother this mornin'?"

Mike: "That's so."

Patsy. "Is it a boy or a gurrl that it is?"

Mike: "Ah, sure, I don't know! Isn't it myself that's jist goin' up to the house to see whether it's an uncle or an aunt I am?"

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Devoted to Agriculture in the Rocky Mountain Region

Combined with the
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Do not plan to sell your alfalfa and other feed but arrange right now to feed it to livestock on your farm.

Our government is doing every thing possible to eliminate the waste and save all the grain at threshing time. Every one should help.

It is reported that over a hundred thousand dollars was paid for a Holstein bull calf 6 months old. Some price for a calf, one can hardly believe it possible.

Lice and mites are discourgers of egg production. When prices of feed are so high you can not afford to have any lice or mites in your hen house.

The feeding of dairy cows has as much to do with the amount of milk you get as any other one thing. Feed for production and secure maximum results.

Do not let your vegetables grow too thick in the row. You may have to thin out the beets, onions, carrots or others, to get maximum results it takes work and good care.

Fight the grasshopper, do not allow them to destroy your crops. They can be controlled, if you have had no experience get in touch with the county agent at once.

For every boy that goes to the front it means those at home must work that much harder. American man power has been greatly reduced, careful planning and laborsaving devices on the farm and in the home will help.

Are you providing shade for your animals during these hot days. If you wish to get the best [illegible] look after the comfort of your livestock. If they live under unfavorable conditions they can not grow , develop or do as much hard work. It will pay you to provide shade for your livestock.

[illegible] the time to dispose of the rooster, and produce infertile eggs during the summer months. Collect the eggs twice a day. If you can not use them now put them away for future [illegible] will keep better.

BUILD A SILO

In order to conserve food for our livestock every farmer should have a silo where 10 or 15 head are kept. If a silo was of value to any farmer in past years it will be twice as valueable in the future. The cost of feeds are higher today and will be higher for some time and no better way is known to reduce this cost than by using a silo, This year more than ever before you need a silo and plan now to built it.

SAVE THE STRAW

Threshing time will soon be here. The great need of food and feed emphasizes the fact that we should save everything possible. Straw is becoming more valuable each year. When properly mixed with other feeds it can be used to good advantage. Just a little more attention should be given to stacking and putting it away for winter use. Too often the straw is left just as the threshing machine piles it. With alfalfa selling at the present prices it will be profitable to take the best of care of all straw for feed and other uses. Half rotten or musty straw does not make good feed. Feed is valuable and straw is worth saving.

WHEAT CROP FOR 1919.

Already the government has taken steps to plan for the wheat crop of next year. About 80 per cent of the wheat produced in the United States is planted in the fall or what is called winter wheat. Utah will plant a larger acreage this year than ever before. More land is being brought under cultivation. One county claims that 3,000 acres more of wheat land was planted in 1917 than during 1916, this same county will plant a larger acreage this year, other counties will plant increased acreage. The price of wheat makes it possible to develop and cultivate this new acreage. It will help the government to feed the world and will increase our cultivated area. Utah will do her part for 1919 as she has answered the government in all other requests.

SUGAR BEET GROWERS TO INCREASE YIELDS

During the early spring months of the year our government asked the farmers to increase their beet acreage, now, the request comes for better care and cultivation in order that the crop may be just as large as possible. The government wants an increased production of sugar. If by better farming we can produce a half ton per acre more you can readily see what it will amount to for the total acreage.

A greater yield means more profit for the farmer and will help the government. The sugar is needed and a little more money will help you to buy more bonds and give more liberal to war activities. So we urge the farmers to increase the tonnage per acre, better and more cultivation, more careful irrigation will help to answer the governments call for an increased yield this year.

BULL CLUBS

One of the best ways for farmers to buy bulls is in a co-operative way and organize bull clubs. The plan is to divide into blocks of 50, the cows in each division. A bull will stand for two years in each block and then he can be moved to the next without extra cost. Only animals of the very best breeding should be purchased. The cost is reduced to a minimum and the better quality of animals can be purchased. One man acting alone could not afford to buy as good a sire as would be purchased by the club. More and better livestock is what we need and this is one of the best ways to get them.

Motor trucks are becoming more useful and essential all the time. Many of them are now being used to transport farm products to the market. In some sections these trucks make regular trips, in other places neighbors have joined together and use them for marketing their crops.

SLACKERS AND PROFITEERS

During the past week examples have been made of slackers and profiteers, men who would not sell their wheat when they had a surplus and a milling company who were mislabeling and selling at too high a price their mill products.

There are a few farmers who think that some of the regulations made by the government are a bluff and would not be carried out so it was necessary to act and make an example of them that others may know what is coming if they do not get in line. Millers or any other concern who think they can beat Uncle Sam are sure to find out that he means business. The sentiment of the people is very strong against a slacker or one who is profiteering during the war. Men and women who are doing every thing possible to help win, are not going to stand for any such neglect of duty or making money while others are giving their lives.

This action of the Food Administration officials should serve as a warning to others who are in wrong. The great majority of our people are very patriotic and have done every thing they have been asked to do. We want to commend the officials for going after these slackers and profiteers.

WORK OR FIGHT

It is timely indeed, this slogan given to the American public, to be enforce by the war department, that men must fight or work.

Some of our best young men are offering their lives, other are making sacrifices of business career and opportunities, others are willing to give their all, that the world may be made safe for freedom and democracy.

Some men are working long hours, day and night, to keep alive their industry and to produce food on the farms, others are willing and doing every thing possible to help the government, but there are a few who go about in a way that one is apt to think they do not care, others are loafing, hanging around pool halls and other resting places, or doing work that is classed as noessential during war times. Such conditions the American people will not stand for and already the change is coming and the order of the war department is going to be one of the best things they have done. Rich and poor alike should work or fight. After the first of the month our officials should see to it that all who are able—work or fight. The great majority of the people believe it is a good thing to make every one help—work or fight.

BUYING "GOLD BRICKS"

What confidence can readers have in a paper that will sell their space to dealers in "gold brick," giving prominent men stock in the company in order to use their name on the directory and in this way sell stock.

Nearly every month, sometimes every week, one or more of the companies go to the bad. Some one who has bought stock (gold bricks) looses all while the promoters get away with all that is collected. We do not want to be understood as saying that every promotion company is bad. So many rubber, coal, mining and oil companies have been fakes one is at a loss to select the good from the bad.

One of the most important things about these promotion companies is the men who allow their names to be used as officers and directors in reality have no interest in the company only the stock given them for use of their names. People will soon loose confidence in such persons and they will be known in their true light.

Why is the promotor so anxious to get ride of the stock, if it is such a good thing there is always money to buy it. These promoters go to the small investors, people with limited means and tell such a glowing story often misrepresenting the true conditions and are able to sell stock. When you are offered something wonderful for a little money, think twice before you buy. We believe the time is coming when the use of the mails will be denied to these get-rich-quick schemes.

SUGAR BEETS

THE SUGAR OUTLOOK IN THE INTERMOUNTAIN COUNTRY

The farmers of Utah and Idaho, with comparatively few exceptions, heeded the Government's call for increased sugar production, last winter and spring. It is now gratifying to drive over the beet growing areas and observe the concrete results. In spite of a vicious, insidious, pro-german propaganda that was started by a very few people, the rank and file of the farmers have shown that their hearts was right and their labors ran true to traditions that have been established and of record in the Liberty bond campaign; in the Red Cross campaign; in the appeals for cash to establish a welfare service with our soldier boys at the battle front.

Our percentage of volunteers for the several branches of war service and also the draft recruits heaped honor of a lasting brand upon our states. Farthermore, these soldiers are acquiting themselves with splendid credit in the fury of the battle front. Yes, there has been casualty lists, but that was an expected part of our sacrifice. A sober study of the engagements indicates that the officers at the front have used precaution to protect our soldiers and not allow them to sacrifice their lives,—in fact, there are reasons to believe that it has required much tact and skill to hold our American soldiers back, so anxious have they been to get into the thick of the fray.

With such a record from the front as a part of imperishable history, it would be a serious indictment against those of us who were left behind, should we fail to do our utmost. Every farmer who has tilled his soil a little better, even though he has been deprived of such needed skilled labor, will have great satisfaction in feeling, at the close of the season, that his increased yields may be chalked up to his credit as a contribution to a much needed war requirement. This is particularly true of sugar and meats and flour or bread products.

A recent survey in sugar beet acreage indicates that Utah now has growing more than 90,000 acres of sugar beets, which is a substantial increase over last year. Idaho has about the same acreage as last year. Owing to a generous amount of fall plowing and an unusual effort on the part of the beet growers, generally, and a reasonably favorable season, the indications at the close of the month of June are that the first half of the season warrants us in predicting a larger average in tonnage than common. Many adverse things may yet happen however.

The seven Idaho factories now have growing about 38,000 acres of beets and at this time, it is believed that there will be more sugar made in the 1918 season than was made in Idaho in 1917.

It has been estimated that Utah will this year produce enough sugar in the seventeen factories to furnish the Government with sufficient sugar to feed our army of 2,000,000 soldiers with a full sugar ration for an entire year, in addition to supplying enough to take care of the commonwealth's sugar needs for an entire year.

Isn't that fine?

The Utah Farmer rather likes this way of expressing the results of the campaign, which, in our judgment, was an important war measure. We want to pass this information on to every beet grower for it will be encouraging for each individual to know that his personal efforts are now a part of a composite whole which will bring credit to the "defenders of the second line of defense" as has sometimes been said, in refering to the food producers of the land. There was such a splendid spirit of response shown, by such large numbers that the idea was accepted in such "do-something and do our utmost" fashion that it would have been humiliating for the farmers as a fraternity, to now have even a partial failure chalked up against them.

Yes, the soldier boys have written history at the front that will forever bring them glory and credit in a cause so worthy; The farmers at home are also writing history as expressed in increase food yields such as only patriotic team effort could accomplish. The Utah Farmer extends congratulations to "the heroes of the plow-handles."

Millard County Utah, June 12, 1918.
Utah Farmer:

I would like a little more information on the siloing of beet tops as reported in your June issue by the Colorado feeders. How are they gathered off the land? Are they topped and left in windrows or are they raked up with a horse rake? In siloing them do you put straw between or do you just pile the tops in and tramp them down with the horses and how do you cover them and what with? I would appreciate a little detail information on this siloing. Thanking you for same,

Yours respectfully,
O. A. A.

The Utah Farmer has made a personal and detail study of methods employed by the beet growers in different parts of Utah and Idaho and also in Colorado, where in some districts, the feeders have been using the silo method for beet tops for several years.

One of the outstanding features that impresses us in this study is the wide range of practices and practically all are succesful. Some methods are better than others. A rather common method of gathering the tops off the field is to fork the tops directly from the ground where the hand toppers have allowed them to accumulate, onto the wagon that draws the tops to the silo. Where hand topping is employed, the beets are usually thrown into windrows or piles and therefore the tops are left not greatly scattered.

Where the mechanical topper is used, one method that has been employed is to use a side delivery rake, after the topper has clipped the tops off of four or more rows. The side delivery rake trundles the tops to one side in a continuous windrow and will cover four or five beet rows at a time. It works very much the same as in raking hay. Where the side delivery rake is not available the ordinary dump hay rake may be used. In gathering the tops, it is important to somewhat shake the tops out so there will be only a minimum amount of dirt gathered with the tops. This can be rather readily shaken out. The tops handle best when gathered before they have shriveled very much. The fresh tops also pack better in the silo. Some good results were had, however, even when the tops had remained on the field several days after topping before they were gathered.

Some of the growers alternate a layer of straw with a layer of beet tops, using about one-third as much straw as tops. When straw is used, it is imperative that greater care be exercised that the packing in the silo is well done. The tops when gathered fresh require only a minimum amount of packing. As the moisture evaporates, they are more spongy and therefore require more tramping to pack them and when straw is alternated, even more tramping is necessary. Sometimes a boy is put on a horse and the packing is done by keeping the horse tramping over the mass after each lot of tops is spread. Sometimes a team hitched to a field roller is used. When the silo is filled, a common practice is to shovel earth to a depth of about ten inches over the tops. In one instance, a grower finished by putting about eight inches of beet pulp over the top and, thus sealed it up.

The important fundamental in making good silage is to exclude the air. Another ingenious scheme that was employed by an Idaho feeder was to spread several inches of fine chaffy straw over the top and then put a temporary fence entirely around the silo and corral a flock of sheep there each night for a week or so. This gave splendid results with only a minimum amount of work. It is necessary to make a good embankment of earth around the sides, where the tops are piled above the level with the surrounding earth.

The Utah Farmer will be glad to receive communications that give the experience of feeders who have tried the beet ensilage and also to receive your farther inquiries.

First Tramp: "Would a pint of wood alcohol kill a guy, Bill?"
Second Tramp: "Would it? W[illegible] that's the concentrated essence of fifty wood-piles."—Exchange.

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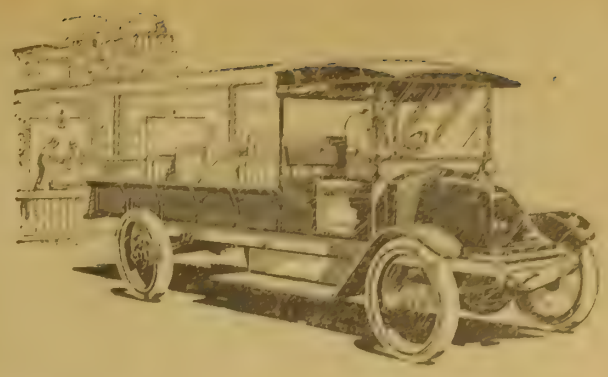

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HOME

BUTTERMILK CORNBREAD

Buttermilk and clabber are usually abundant on the farm and, when used with soda, make a cheaper cornbread than sweet milk and baking powder. Some cooks prefer soda, some prefer baking powder, and some prefer both, using one-half teaspoon of soda to two cups of buttermilk and adding one teaspoon of baking powder to the batter.

The amount of soda used by cooks varies from one-half to one teaspoon level with two cups of milk. Recipes will be found to vary greatly in the amount of milk used. If a soft cornbread is wanted, make a thin batter. It is largely a matter of taste. Soft cornbread may be made without any butter or fat as these breads are eaten with a plentiful serving of butter.

Dinan's Cornbread.

2 cups white cornmeal, 3 cups buttermilk, 1 teaspoon sugar, 2 eggs, 1 tablespoon butter, 1 teaspoon salt, 1 teaspoon soda (level).

Add to the milk the sugar, well-beaten eggs, butter, meal, salt and soda dissolved in a little hot water. Have ready three well greased deep cake tins (hot), divide the batter between them and bake in a quick oven.

Rice Cornbread.

1 cup cornmeal, 1 cup boiled rice, 1 tablespoon fat, 2 eggs, 1 teaspoon salt, 2 cups buttermilk, 1 teaspoon soda (level).

Combine meal, rice, salt, fat, and egg yolks, slightly beaten, and buttermilk mixed with soda. Beat two minutes and add whites of eggs beaten until stiff. Turn into a greased baking dish and bake in hot oven 40 minutes, or bake in shallow dish 20 minutes. Serve from dish.

Steamed Corn Loaf.

2 cups cornmeal, 1 cup barley flour, 2 cups buttermilk, 1 tablespoon fat, 2 tablespoons syrup, 1 teaspoon soda (level).

Mix meal and flour in bowl; make a hole in the center of the mixture and pour in the milk; beat hard and add fat, sugar and soda dissolved in a tablespoon of boiling water; beat well and turn into a greased mold with a tightly fitting cover and steam for two hours. Turn out in a plate and dry out in the oven for five minutes.

Corn Dodgers.

2 cups white cornmeal, 1 teaspoon salt, 2 cups buttermilk, ½ teaspoon soda, 1 tablespoon fat.

Stir soda into buttermilk, mixing thoroughly, and add to sifted meal and salt. Have baking tins ready on top the stove with hot fat. Add fat to dough. Shape in small pones with hand or drop by spoonfuls in the hot pan. Do not allow the pones to touch; leave pan on top the stove for a few minutes; bake to a golden brown in a moderately hot oven. Serve with dinner of fresh vegetables.

SHORTCAKES FOR WHEATLESS PATRIOTS

The call for wheat grows more and more urgent and Americans is now realize that wheat is as much a part of the real fighting program of the country as ships and guns.

Thousands of men and women have given up the weekly allowance of a pound and a half of flour, and are travelling in a wheatless road to victory. Those housekeepers who make good use of this allowance in loaf bread and biscuit hesitate to turn even a dust of wheat flour into pie or shortcake and such extras. To these the recipes for shortcake worked out in the Experiment Kitchen of the Food Administration will be most acceptable.

Barley Shortcake.

1 cup liquid, 4 to 6 tablespoons fat, 1 tablespoon sugar, 2 teaspoon salt, 6 teaspoons baking powder, 4 cups barley.

Corn Flour Shortcake.

1 cup liquid, 6 to 8 tablespoons fat, 1 tablespoon sugar, 1 teaspoon salt, 6 teaspoons baking powder, 2 2-3 cups corn flour.

Rice Flour Shortcake.

Follow direction for corn flour, using 2¼ cups rice flour instead of corn flour.

Barley-Corn Shortcake.

1 cup liquid, 6 tablespoons fat, 1 tablespoon sugar, 1 teaspoon salt, 6 teaspoons baking powder, 2 cups barley flour, 1 1-3 cups corn flour.

Barley-Oats Shortcake.

1 cup liquid, 4 tablespoons fat, 1 tablespoon sugar, 1 teaspoon salt, 6 teaspoons baking powder, 1 1-3 cups corn flour, 1½ cups ground rolled oats.

The same weight of flour is used in each recipe—the measures differ according to the kind of flour used. All measurements are level. Mix dry ingredients, cut in the fat and add the liquid. For individual servings, place dough on slightly floured board, pat to ¾ inch thickness and cut as for biscuit. If a large shortcake is wanted, place dough in well greased biscuit tin and pat to desired thickness.

These shortcakes are light and tender. An egg added to rice or corn flour makes a softer dough. The slightly acid taste of barley may be overcome by using ¼ teaspoon of soda dissolved in one cup of liquid. The flavor of oat and corn is especially good. The shortcake made from corn or rice flour are very white and flawey and similar in apperance to wheat flour.

Do not split these cakes as they crumble easily. Pile strawberries or other fruit on shortcake. Add whipped cream, if desired, and serve. These shortcakes can be used instead of pie crust in a great variety of desserts.

A BATCH OF RECIPES FOR GOOD SANDWICHES

Triple Sandwiches—These are both filling and appetizing. Take two thin slices of white bread and one of graham (all bread used in sandwiches should be at least one day old, it cuts so much nicer). Spread the slices of white bread with butter, then with snappy cheese, and put them together with the graham slice between.

Knully-Knoll Sandwiches — Those who like olives will relish his kind. Spread slices of rye bread with a generous coating of peanut butter and then add slices of stuffed olives. Spread the top slices of the sandwich with plenty of peanut butter, too. These are good energy-furnishing sandwiches because of the fuel value of the peanut butter.

Mock Walnut Sandwiches—Spread white bread with butter, not being too careful to spread thin. Then cover the butter on the lower slice of the sandwich with good thick golden brown syrup. Sprinkle with grated cheese (rich and old cheese is best). The top slice of bread should be buttered but have no syrup. Indeed, in making all sandwiches the rule is to put the filling in the lower slice only; only buttering very thin the top slices. And some prefer, when making meat sandwiches with a salad dressing, to butter the lower slice of the sandwich only.

Cheese Sandwiches—These may be made of white bread, rye bread or graham bread, according to the taste of those for whom they are intended. Butter slightly the slices and spread with grated cheese or rich cream cheese and dot here and there with slices of stuffed olives. Sift a little paprika over the cheese. Paprika, by the way, is good on nearly all meat, egg or cheese sandwiches.

Nut and Cheese Sandwiches—These furnish a good deal of nourishment. Take equal parts of grated cheese and chopped nuts, mix well and spread on thin slices of graham or rye bread. White bread may be used, of course, but the other breads give a distinctly different flavor. English walnuts are good nuts to use.

Chopped Egg Sandwiches—Chop hard-boiled eggs, whites and yolks together, until reasonably fine, then chop together until quite fine a few leaves of parsley and some mixed sweet pickles, stir eggs into this and spread on buttered slices of white bread. Those who like peanut butter will find that especially nice to use in this combination.

Currant Bread Sandwiches—Nearly all children are fond of these. Spread bread with a little butter. Then put moderately thick slices of currant bread with a little butter. Then put on a good thick spreading of firm currant jelly or jam.

Lettuce and Cream Cheese Sandwiches—These are nice when made just before serving. If they stand, the lettuce wilts and seems tough. Butter white or brown bread and plain butter or peanut butter are nice with these. The bread should be spread thinly with butter, the lettuce leaf placed on it and then a generous spreading of cream cheese sprinkled with paprika.

A satisfactory boiled dressing which is good for sandwiches and salads may be made by taking one teaspoonful each of salt, sugar, mustard flour, one tablespoonful of flour; mix well together. Put in a tablespoonful of butter, then add slowly the beaten yolks of two eggs, quarter cupful of vinegar, and three-quarters of a cup of milk. Be careful to stir all the time until the mixture thickens. It is best when cooked in a double boiler, and it should turn out a rich, smooth yellow mixture about as thick as good cream.

If the sandwiches have to be made some time before eating wrap them singly, or several together, in oiled paper, which may be bought for 5 and 10 cents a roll. They will be fresh and nice after several hours when wrapped in this way.

CHOCOLATE PUDDING

1 teaspoon of vanilla in about 1 quart of milk, 4 eggs, 4 tablespoonfuls of grated chocolate, 4 heaping tablespoonfuls of corn starch, 1½ cupful of brown sugar. Put 3 cupfuls of the milk in double boiler to heat. Mix dry ingredients together, then moisten with remaining cup of milk. Mix slowly so as to avoid lumps. Stir this paste slowly into boiling milk and continue to stir constantly until mixture reaches boiling point again. Then add the eggs previously beaten well, but not too light. Pour the eggs in slowly and mix rapidly by beating or stirring. Remove from fire and add vanilla. Dish and let stand aside to cool. Serve with whipped cream. It is better to let stand on ice several hours before serving. For walnut pudding use 1 cupful of ground walnut instead of chocolate and follow the above recipe.

Help Fight the War in the Cornfield

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WAR TIME DESSERTS.

Marjorie Simmons.

The house wife is asked to save wheat, fat and sugar. A great saving can be made if we will not serve pies cakes and expensive puddings. In place of these some of the suggestions offered below can be used. Use a few nuts marshmellow creme or chocolate, or you can use some of your own fruit or jams in making these war time desserts, many of these desserts can be prepared the day before they are used. They are simple, wholesome and what some may call old fashioned.

Fruit Whip.

One package orange prepared gelatine, one cup fruit pulp.

Dissolve the gelatine in boiling water as directed on the package. When it begins to thicken add the fruit pulp. Whip until very light. Turn into a mold and when firm serve with marshmallow creme or whipped cream. Any fruit may be used but peaches or apricots are best.

Raspberry Ice.

Two cups raspberry juice, two cups water, sugar, lemon juice.

To the fruit juice and water add sugar to sweeten and lemon juice to taste. Freeze and let stand one hour. The same proportions may be used for an ice made from strawberry juice, cherries, rhubarb, pineapple or orange.

Cornstarch Pudding.

Four cups scalded milk, one-half cup cornstarch, one-fourth cup syrup, one-fourth teaspoon salt, one-half cup cold milk, one teaspoon vanilla, whites three eggs.

Mix the cornstarch, syrup and salt and dilute with the half cup cold milk. Add to the scalded milk, stirring constantly until the mixture thickens. Cook fifteen minutes. Add flavoring and a little fruit coloring if desired. Cut and fold in the beaten egg whites. Mix thoroughly, mold and chill. Serve with a thin custard sauce or with crushed fruit.

Economy Pudding.

Three cups stale bread, three cups milk, two squares Baker's chocolate, one-half cup syrup, one-eighth teaspoon salt, three eggs, one-half teaspoon vanilla.

Break the stale bread in small pieces and soften in the milk. Melt the chocolate and to it add the syrup, salt, beaten eggs and vanilla. Mix well and blend with the bread. Place in oiled custard cups and steam about one-half hour. Serve hot.

Tapioca Custard Pudding.

Four cups scalded milk, two-thirds cup pearl tapioca, three eggs, one-half cup syrup, one teaspoon salt.

Soak tapioca in cold water for one hour. Drain, add to the milk and cook in a double boiler for thirty minutes. Beat eggs slightly and blend with syrup and salt. Pour eggs gradually into the hot tapioca. Turn into an oiled baking dish and bake thirty minutes in a slow oven.

One top of these two puddings one of the best of sauces is a Marshmallow Creme sauce prepared in jars for household use. This sauce is mixed in the same way for serving over all puddings, with fruit, on gelatine desserts and to top your home made sundaes.

Cornmeal Dumplings.

Two cups cornmeal, one teaspoon salt, boiling water, flour for dredging.

Mix the meal and salt. Pour boiling water over the meal and stir thoroughly, using just enough water to make a thick paste. Form portions of the paste into thick dumplings about 3 inches in diameter. Have ready a kettle of boiling water and drop the dredged dumplings in carefully. Cook twenty minutes. These dumplings may be cooked with greens, with or without the addition of ham bone or a piece of fat pork.

Sour milk muffins are often wanted for summer breakfasts.

Cornmeal Muffins.

One cup cornmeal, one cup sour milk, one egg, one tablespoon fat, one teaspoon salt, one-fourth to three-fourths teaspoon soda.

Dissolve the soda in the milk and mix at once into the meal. Stir and add fat, the salt and egg. Beat well. Bake in well greased muffin pans in a hot oven.

Cornmeal and Rice Waffles.

One-half cup cornmeal, one-half cup flour, one cup cooked rice, two eggs, one tablespoon fat, one-half teaspoon soda, one teaspoon salt, one cup sour milk.

Sift together the flour, soda and salt. Add all the other ingredients and beat thoroughly. Bake on well oiled waffle irons.

Boiled Rice and Cherries.

Three cups cooked rice, two cups cooked cherries, sugar.

Blend the cherries and rice, sweeten to taste and serve hot.

Gelatine and Leftover Cake.

One package pineapple or orange prepared gelatine, one and one-half cups cake crumbs, one-half cup cream.

Dissolve the package of gelatine in one and one-half cups of boiling water. When partly congealed pour in cake crumbs and fold in whipped cream. Serve with fresh or canned fruit.

RAISIN ROLL

Make a dough as for biscuit roll about ¼ inch thickness. Take 2 cups raisins, 1 cup sugar, 2-3 cup water (boiling). Boil until raisins are very soft. Remove from fire and cool. Then spread over the dough, roll up lightly (as for jelly roll), put in a greased pan. Sprinkle lightly with sugar and small pieces of butter. Bake a medium brown and serve with cream. This is a cheap wholesome dessert, and especially good for growing children.

TOMATO MOLD.

Butter a pudding mold, sprinkle the bottom with bread that has been soaked in milk and well squeezed out. Over this put a layer of finely chopped parsley, a layer of grated cheese and freshly peeled and sliced tomatoes which ought to be somewhat salted. Repeat these layers until the mold is full, finishing up with a layer of bread, parsley and cheese on top of which put small pieces of butter. Bake in a moderate oven for 40 minutes. Serve very hot.

LET YOUR CHILD GROW BIG AND STRONG

Here's Good Food For a Real Youngster's Day.

What should your child eat to grow big and strong? According to food experts of the Utah Agricultural College here's good food for a real youngster's day:

A good breakfast to start him off —milk, cornmeal mush, apple sauce. It makes him fit for school and fit for play.

Milk and plenty of it, makes him grow—a quart each day if you can. Put it on his cereal and in his cup. Make it into soups, puddings, or custards for him. Whole milk is best, of course, but skim milk is good if there is a little butter in his meals. Cottage cheese is good too.

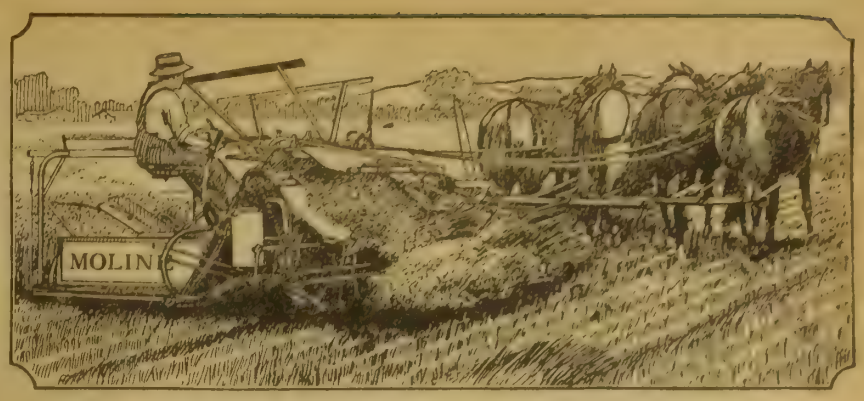
No coffee or tea—not even a little. Leave them for the grownups. Milk, cocoa, not too strong, and fruit juices are the drinks for children, and plenty of water always.

Fruit they enjoy, and they need it, too—baked apples, apple sauce, thoroughly ripe bananas, prunes, oranges, etc. Give them vegetables, fresh or canned. Plenty of fruits and vegetables tend to prevent constipation. Use proper food and do not depend upon laxatives. The youngsters can't be well unless the bowels move regularly. Don't let him hurry off in the morning without attending to this duty.

Other foods a child needs: Whole wheat bread, not too fresh, corn bread, well-cooked oatmeal, cornmeal, rice. They help make strong boys and girls. Some fats, butter or margarine or meat fats on his bread or in gravies. An egg, perhaps, particularly if he doesn't get his full quart of milk, or he can have a little meat or fish, but he does not need much.

Sweets are good for him—the right ones at the right time. Dates, raisins, stewed fruits, simple puddings, sugar cookies, are better than candy. Give them at meal times.

Between meals let him have bread and butter, a cracker, or fruit. They won't spoil his appetite, and candy will.



The Moline Grain Binder

The Best Work Under the Worst Conditions

THE Moline Binder has a record of of over 50 years of good, honest service wherever grain is grown. In difficult work, in continuous running without stops or breakdowns—in short, in an emergency, Moline superiority is apparent.

The Moline Grain Binder is built from the ground up of the best materials by skilled workmen and has been gradually developed and improved until it is as near perfection as possible. It is built to do the best work even under the worst conditions. That's why a Moline Binder user is never satisfied with anything else.

When you buy a Moline Grain Binder you get the benefit of 50 years' service, the lightest draft, the greatest stability, the strongest construction and the greatest reliability in a grain binder—you get crop insurance.

MOLINE LINE

Corn Planters. Cotton Planters. Cultivators. Corn Binders. Grain Binders. Grain Drills. Harrows. Hay Loaders. Hay Rakes. Lime Sowers. Listers. Manure Spreaders. Mowers. Plows (chilled and steel). Reapers. Scales. Seeders. Stalk Cutters. Tractors. Farm Trucks. Wagons and Stephens Salient Six Automobiles.

A typical instance of Moline performance under unusual conditions is reported by Jerry Rivard of Boubonais, Ill., as follows:

The Moline 8-ft. Binder bought of you I used in cutting 110 acres of grain. I cut seven acres of new ground where I did not think it could do the work, being very trashy ground, and the men present insisted I was doing wrong to try to cut it with a binder, but the Moline Binder went through, cutting all. I never missed a bundle and never broke anything. I consider this remarkable, considering the condition under which the test was made.

We have many letters such as this on file, all equally enthusiastic over the work of the Moline Binder.

The frame of the Moline Binder is extra strong, making it particularly good for tractor use.

See your Moline Dealer about the Moline Binder now, or write us for full information.

MOLINE PLOW CO. MOLINE, ILLINOIS

MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

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Recommended by leading engine builders and manufacturers. Is best for the tractor because it is made for the tractor.

Clean, carbon-free and stable at high temperatures. Lubricates both cylinders and external bearings. Cuts friction to a minimum.

Use Stanolind—it means more power at the draw-bar and less time out for repairs.

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(A Colorado Corporation)

Denver, Pueblo, Salt Lake City, Cheyenne, Butte, Albuquerque, Boise

KNEW IT ALREADY

"I haven't paid a penny for repairs on my machine in all the ten months I've had it!" said the motorist.

"So the man who repaired it told me!" said a friend in corroboration.

FOOD FACTS OF WORLD SCOPE

More Rigid Canadian Regulations.

New Canadian food regulations now in effect limit the amount of fats and sugar which may be used in the manufacture of pastry, confectionery and ice cream. The manufactuer of some of these products is entirely prohibited and the sugar consumption of candy manufacturers is limited to one-half the monthly average used by them last year.

Italy Depends On Imported Food.

Although crop conditions in Italy are reported as generally favorable and the area sown to cereals about equal to the pre-war average, home-grown food and imports combined are still insufficient to meet demands.

Serious Sugar Losses.

The submarine depredations off the Atlantic coast early in June resulted in the loss of 13,854 tons of sugar from Cuba and Porto Rico. This represents nearly one-fifth of the total weekly consumption of sugar in the United States and is more than the recent total sugar allowance of Great Britain for jam making this year.

Although the cargoes were fully covered by insurance the loss of the sugar emphasizes the need for additional conservation of this important commodity.

War's Effect on U. S. Meat Situation.

To summarize the effect of the war on the meat situation, the Food Administration makes this statement. Production has increased, and exports have increased both in actual amount and in relation to production. Beef has assumed a more important position in export. During the calendar year 1917, the total production of beef, veal, pork and mutton exceeded 18 billion pounds, of which slightly over 9 per cent, chiefly beef and pork, was exported. The average farm in the U. S. produced close to 3000 pounds of meat last year.

U. S. Exports of Oats.

The extent to which the United States is now supplying the Allies with wheat substitutes is shown by a summary of oat and corn exports announced by the U. S. Food Adminstration. More than 101,000,000 bushels of oats and oatmeal were exported by this country from July 1, 1917, to April 30, 1918, and of this amount more than 93,000,000 bushels were sent the European Allies.

Exports of corn and cornmeal for the same period were more than 39,000,000 bushels, of which more than 27,000,000 bushels were for the Allies.

Bavarian Hens Assessed at 40 Eggs.

An example of German methods of securing food is seen in the new regulations of the Bavarian Egg Supply Office. Poultry keepers are required to deliver to the Government 40 eggs for each hen kept. The 1918 quota is due in September at a fixed price of 4 cents per egg.

Measures of this character help to explain the ability of the German federal states to feed the population when food products fail to reach the markets in sufficient quantities as a result of voluntary sales by producers.

Hungary Commandeers Foodstuffs.

New government food orders in Hungary provide for the confiscation of hidden hoards without payment and also the punishment of hoarders. For the fourth time in the present year the Food Minister has ordered a general requisition of foodstuffs from consumers and producers alike.

Except for a sufficient home supply to last until the first part of August, the following principal foods will be seized: wheat, oats, maize, potatoes, millet and fat.

Switzerland Adopts Compulsory Production.

A recent Swiss decree for Compulsory crop production by all land owners up to the 1914 acreage as a minimum. All grain growers who fail to deliver the required amount into the hands of the authorities must pay fourfold the maximum price as indemnity for their deficiency. The fact that Switzerland is a republic makes this decree of unusual interest.

FARM LIGHT PLANT

Andrew Moore.

Many changes have come to the modern farm home. Many of the luxuries and comforts that were known only to the city homes, years ago, are now possible on every farm. No matter where you are located it is possible to have electricity in your home. You can light your house with the modern electric lamp, run a fan, a washing machine, can use a electric iron, vacum cleaner and a score of other labor saving devices that make comfort and help in the farm home. These electric plants have been so thoroughly tested out that they are now recommended as being practical and so simple in methods of operation that anyone can run them.

Electric lights are so much better than the old coal-oil lamps and so much easier to keep clean. The risk of fire is not near so great especially is this true if proper care is given when the house is wired.

A wire run to the barn in such a help and so much safer than carrying around a lantern.

Think of the help it would be to have an electric washer and electric iron to do your work. Then there is the sweeping if it is done with a vaccum cleaner it is so much more sanitary, the dust and dirt is gather together and burned rather than stirred up and sacttered to another place.

The sewing machine can be run with electrical power and will take much of the worry and a great deal of the hard work out of sewing. It becomes a pleasure for the girls to learn this necessary part of the work of successful home making. With electricity on the farm a water system is possible and will do wonders to help in the house work. Think of hot and cold water just by the turning of a tap rather than the old way of carrying water for several rods.

Boys and girls are not so apt to leave the farm if some of these modern helps and comforts are theirs to enjoy.

The modern sentiment is to help the wife with labor saving devices just as much as the men on the farm. They should share and share alike.

Don't Waste Your Strength

and time washing clothes by hand. Do it better with one of our Electric Washing machines.

We have them from $35.00 up. Send for our catalog.

We carry electrical appliances of all kinds.

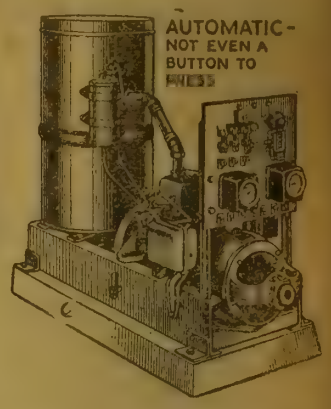
Eardley Bros. Co.

37 East 1st South
Salt Lake City, Utah.

ELECTRIC LIGHT AND POWER

for the rural home—is cheap, safe, convenient and reliable. It saves time, energy and money.

Matthews Automatic Electric Light and Power Plants



are more dependable than human control, not even a button to press.

Absolute battery protection and low battery cost. Never out of power at a critical time. Battery troubles are eliminated.

Plant starts itself when load becomes unsafe for battery. Plant stops itself when demand ceases and battery is fully recharged.

Not one size for all purposes, but a selection for each need and honestly rated.

MATTHEWS PLANTS

Are Completely Equipped, Honestly Represented, Cheapest in Operation and Upkeep, a Permanent Improvement,

Good for Years of Constant Service.

Guarantee—The Plant must make good or we do.

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19-23 West First South Street, Salt Lake City, Utah.

OUR SERVICE

And What It Means to You

WE HAVE A JOINT INTEREST IN THIS COMMUNITY

And We Wish to Join With You in Every Way to Promote the Community's Interests

In a sense, this community is like a farm—it pays according to the way in which it is treated.

The successful farmer co-operates with his farm.

Knowing that certain soil elements are necessary to healthy crop growth, he sees to it that these elements are maintained.

The same principle holds good in community development.

Our community is composed of two closely-related elements—town and country.

They are both essential to healthy community growth. Neglect or mistreatment of either of them by the other affects both—it injuries the whole community. Both elements must be maintained.

Accomplishing this is simply a matter of sincere co-operation among all of us in this community.

Our idea of our own part to play for community good in a business way is—

To sell only such implements as have the quality to give high-grade results in the field.

To consider good performance by our implements as a part of our obligation.

To sell every implement at a fair price.

To practice the square deal towards each and every customer.

On this basis we invite the co-operation of every farmer in this community.

Consolidated Wagon & Machine Co.

UTAH IDAHO NEVADA WYOMING

Send in your subscription to the Utah Farmer today.

Farmers Should Fight Weeds

Every farmer should fight the weeds, not one should be allowed to grow and retard production. The need for food production this year is greater than ever, and we must fight these enemies to our crops.

Some of our communities are working hard to destroy them and it is up to the Farm Bureaus to co-operate together with county officials to fight the weeds.

We are giving the control methods for a few of the more common weeds. Also a copy of the State law governing the distruction of noxious weeds.

Weeds and Methods of Control.

Canada Thistle (Cirsium Arvense) Unlawful Weed.

This weed is a perennial with prickly leaves and with a strong, far-reaching root-stock, the smallest part of which is capable of growing and originating a new plant.

Method of Control—Clean cultivation. Do not allow a shoot to appear above the surface. Plow shallow, then drag as many roots to the surface as possible. Follow this by regular cultivation, either by hand or with some implement. At the beginning the fields must be gone over every four or five days. Cultivation can be decreased as the plant loses its vitality. After the second year a cultivated crop may be planted. All weeds with a running root-stock can be eradicated by the same method.

Wild Morning Glory or Wind Weed (Convolvulus Arvensis).

This weed is a perennial with strong far-reaching roots, the smallest of which is capable of growing and originating a new plant. Ordinary cultivation has no apparent effect, except to make it grow more vigorously. However, special and extra cultivation throughout the growing season will prohibit it from doing any great harm to the crops.

Method of Control—Same as for Canada thistle.

Whitetop (Lepidium Draha).

"This weed gets its name from the conspicious white flowers borne in a cluster at the top. It is a perennial spreading by both seeds and creeping root-stocks. It is aggressive and spreads rapidly, gradually increasing the size of infested areas until whole fields are taken. It is normally from 8 to 20 inches tall; it has finely toothed, narrow ovalshaped leaves, rounded at the end; the leaves do not have distinct petioles. The flowers have four white petals arranged in such a way as to form a crude cross. It belongs to the mustard family and has slightly nippy (mustard) taste."

Method of Control—Same as Canada thistle.

Bull Thistle (Cirsium Lanceolatium) Unlawful Weed.

The weed looks like the Canada thistle, but different in having a largerhead, broader leaves, a tap root in place of a running root-stock and is a biennial.

Mehod of Control—Cutting below the crown before they go to seed.

Burdock (Arctium Lappa) Unlawful Weed.

It is a biennial, bears fruit the second season. Found in all parts of the county.

Method of Control—Cut out the crown during the early summer. Second or third cutting is sometimes necessary. Do not allow them to go to seed.

Cocklebur (Xanthium Canadense) Unlawful Weed.

The weed is an annual, growing from the seed each year. All the seeds do not germinate the first season. Found in nearly all parts of the county.

Method of Control—Cut all plants before they go to seed. Work must continue for a number of years, due to the delayed germination of the seed. Practice clean cultivation and rotation of crops.

Destruction of Noxious Weeds.

"An act providing for the destruction of noxious weeds and imposing a penalty for the violation of the provisions of the same; authorizing county commissioners to appoint county road commissioner ex-officio weed inspector and prescribe his duties and fix the time for destroying noxious weeds and provide that notice of time fixed shall be posted or published and designate other weeds to be destroyed not enumerated in this act.

"Be It Enacted by the Legislature of the State of Utah:

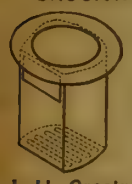
Section 1. Noxious Weeds to Be Destroyed by Property owners.—Every person, company or corporation owning, controlling or occupying lands in this State, once in each year and oftener if required as hereinafter provided, shall cut or destroy all weeds known as thistles, burdock, cockle-burs, Canada and Russian thistle, and all other weeds that may be designated as hereinafter provided, and at such time and in such manner as shall effectually prevent them from bearing seed; provided that this section shall not apply to uncultivated desert or mountain lands.

"Section 2. Id. On Right of Way.—Every person, company or corporation owning the right of way for a reservoir, dam, canal, ditch or any kind of an open artificial water course, located or running through either private or public property, for the conveyance or conservation of water for general irrigation purposes or for public use of any kind in this State, once in each year and oftener if required as hereinafter provided, shall cut down or destroy before they mature their seed, all thistles, burdocks, cockleburs, sandburs, prickly lettuce and other noxious weeds that may be capable of dissemination through the agency of said water courses, or that may be found growing along the right of way of such reservoir, canals, dams, ditches or other water courses.

"Section 3. Id. On Railroads.—Every railroad company operating in this State shall once in each year and oftener if required as hereinafter provided, clear its right of way of this-

(Continued on page 14)

CROCKWELL'S ECONOMY STOVE



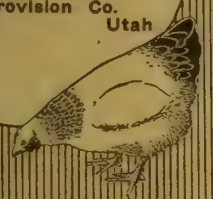
A simple portable stove. Take off one lid sit in your stove or range (see cuts) giving you two holes to cook on. A great time, heat and fuel saver. Price $5.00 prepaid. Pays for itself in a short time. Write for folder. Agents wanted. Hooverise. Save coal for the War.

J. H. Crockwell, Box 667, Salt Lake City

MOREGG
IT MAKES HENS LAY
POULTRY FOOD

To have thriving, productive poultry, it is necessary that they receive plenty of nourishing food. "Moregg" is the proper food for poultry. It is scientifically prepared so that it helps build larger and better poultry and puts life into the productive organs of sluggish hens.

Ogden Packing & Provision Co.
Ogden Utah



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The Ford car is a standardized and highly perfected mechanism. With careful operation and intelligent care, it will pay big returns in service and satisfaction. If you use

Simplex Ford Motor Oil

you'll save on your oil, gasoline and repair bills. This is a special oil for Ford cars; it reaches every moving part and stands up in hot weather. Every drop counts.

Utah Oil Refining Co.

Salt Lake City, Utah.

This is the Mower that's Easy on the Team

Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

EMERSON STANDARD

READ OUR MOWER BOOK

and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.

EMERSON HAY TOOLS

Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

Miller-Cahoon Company

MURRAY, UTAH IDAHO FALLS, IDAHO

Every Fourth Motor Truck In the United States Is a Republic

The superiority of the REPUBLIC MOTOR TRUCK is indicated by the fact that one out of every four trucks in the United States is a Republic.

Bringing it nearer home—in the inter-mountain region alone there are over 600 Republic Trucks in operation. For hauling of every description—mining—sheep raising—freighting—farming—the Republic has met the severest tests.

By reason of its strength, power, low price and variety of models, the Republic is just the truck for the farmer. Send for our attractive booklet, describing the eight different Republic models, You will be sure to find one exactly suited to your needs.

INTER-MOUNTAIN OLDSMOBILE CO.

43 W. 4th South St. Salt Lake City

LIVE STOCK

FIELD ROOTS STOCK FOOD

Thomas Shaw.

The value of field roots as food for livestock is not understood as it ought to be in the United States, especially in those areas that will not mature corn of the reasonably large varieties. It is in such areas that the best crops of field roots can be grown. Where they may thus be grown they may be made to take the place of corn in providing succulence for livestock, and also nutrients. The one objection to growing them in this day of high wages is the cost entailed, but where corn cannot be depended on to mature, those who keep much livestock under arable farm conditions should certainly try to grow field roots.

Among the conditions that influence the feeding of field roots to livestock are the following: (1) The class of animals to which they are fed, whether horses, cattle, sheep, swine or fowls; (2) the objects sought from feeding them; (3) the preparation required; (4) the character of the temperature and (5) the other foods that are being fed in connection with them. There is a right and a wrong way of feeding roots to any kind of livestock. While all kinds of roots will give good results when fed to horses they must not be fed too freely to horses that are doing work more or less severe. For such feeding they are somewhat over-bulky, and when large they require some preparation before being thus fed. That is not true of carrots which furnish for them a most excellent food. Cattle may be fattened on them so as to produce a most excellent quality of meat, and with but little grain added. The fodder in such instances may be hay or even good straw. The influence on the milk flow when fed to cows is very marked, equal if not superior to corn; but when turnips are fed, care must be taken both with reference to the quantity fed and to the time of feeding. They should be given after rather than before each milking. For fattening sheep and feeding ewes for the production of milk they are equally good as for feeding to cattle, but some caution is necessary when feeding them to breeding ewes during the period of gestion. Excessive feeding of roots at such a time tends to produce lambs large but flabby and weak. For feeding swine the best use of field roots comes from feeding them to brood sows in the winter season, and they furnish a very suitable vegetable food for fowls also in the winter.

Among the many objects for which roots may be fed, three stand out preminently. One is to produce milk, a second to promote growth in young animals, and a third to promote digestion. The objects that are considered by some as not so important, are the reduction of the gain ration when grain is expensive and dear, and the fattening of livestock, but as a fattener of livestock they may and do render great service. In northeastern Scotland, they sometimes form the principal factor in such feeding. But this can only be done where the conditions are exceedingly favorable to the growing of roots and where labor is not dear. The value of roots in milk production have already been mentioned. For promoting growth in young animals, especially young cattle and sheep, roots are unsurpassed. The aim should be to have a supply for calves when not on succulent pastures. They not only aid in promoting thrift, but they also aid in building a large framework. The extent to which roots are thus used in Britain furnishes one explanation of the large size and the excellence of the cattle generally over there. The same may be said of the cattle in those parts of Ontario where cattle are most grown. This fact encourages the view, that in those portions of the United States where field roots grow most readily, the stock grown should be possessed of much excellence. It may be aked, will not corn serve the same purpose? The answer is that though corn will aid in growing excellent cattle it will not give them as much framework in the process of development, and for the reason that it is a carbonaceous food.

When other succulent food is absent, field roots when fed in limited quantities produce results away beyond those that come from the actual nutrients that they contain. Some speakers and writers have spoken disparingly about field roots because of the large amount of water which they contain. They have even gone the length of saying that when they want water for their stock they would rather go to the well for it than to a turnip cellar. But the fact should not be overlooked that when those cattle and sheep and even horses are being kept on dry fodders for prolonged periods, a small ration of field roots fed daily will have a most beneficial influence on the digestive tract, and on digestion. A small addition of field roots along with straw will bring animals through the winter in a fairly thrifty condition.

When feeding roots in some forms no preparation is called for. It is seldom that carrots need any preparation when they are fed. early all classes of animals can consume them readily. When roots grown thickly are fed as soiling food, the tops and the roots being fed together, no preparation is necessary; but when large roots are fed to cattle or sheep in winter it is usually thought necessary to pulp or to slice them. The plan followed in Ontario is an excellent one where large quantities of roots are to be fed. It is in outline as follows: Enough of hay or straw is chaffed to furnish a layer to spread over the floor of the feed room. Then a thin layer of pulped turnips is spread over the fodder. Thus the fodder and the turnips form alternate layers. Enough of food is thus prepared to last for several days. The meal is added, should any be fed, when the mixed food has been put into the mangers. For brood sows roots do not require to be cut.

The amount to feed will depend in a marked degree on the other foods fed, and on the bulkiness of these. Roots in themselves are bulky and, therefore, are not adapted for very extensive feeding to horses and swine. But to cattle and sheep that are being fattened, when the supply is ample the limit of the feeding may correspond with the limit of capacity in the animals to consume them. After ewes have produced lambs they may be given about all they will eat as soon as the lambs can take all the milk. Half a bushel each end of the day is considered a very fair feed for a cow in milk.

SWINE MORTALITY FROM DISEASE AT LOWEST MARK

The death rate in swine from all diseases for the year ending March, 1918, announced by the United States Department of Agriculture as 42.1 per 1,000, is the lowest in thirty-five years, according to the records kept during that period.

This unprecedentedly low rate of morality presents a great contrast with those of earlier periods, particularly with the losses of 133.8 per 1,000 in 1887, 144 per 1,000 in 1897, and 118.9 per 1,000 in 1914, years

SOUTH OMAHA

SECOND LIVE STOCK MARKET OF THE WORLD

This market has stock yards facilities of the best that modern construction affords, with splendid accommodations for 5,000 horses, 40,000 cattle, 40,000 hogs, 100,000 sheep, with the mammoth Packing Plants of the Armours, Swifts, Morris and Cudahys, which are among the largest in the world, also numerous smaller packing concerns, creating a demand for more than eight million head of cattle, hogs and sheep, annually; with an outlet for feeder cattle and sheep, and grades which do not come up to the requirements of the packers' buyers, which has no equal in the entire country.

Ship Your Live Stock to South Omaha, thereby Saving

Time, Shrink and Freight

Union Stock Yards Company of Omaha

(LIMITED)

marked by severe outbreaks of hog cholera. This is even a remarkable reduction from the normal low rate of losses which has remained slightly above 50 per 1,000 when the disease was least prevalent.

The approximate number of hogs on hand January 1, 1918, was 71,574,000. The loss of 42.1 per 1,000 for the year ending March , 1918, therefore represented approximately 3,000,000 of these animals, equivalent to the consumption of pork and pork products by the entire population of the United States for 1917 for 25 days.

These recent losses should be compared with that of 7,000,000 hogs in 1914, which curtailed production to the extent of the national consumption for that year for 37 days.

The marked reduction in the losses of swine in 1918 over preceding periods, in view of the fact that 90 per cent of these losses are due to hog cholera, indicates clearly the benefit from the combined efforts of State and Federal agencies in protecting the farmers against the ravages of this exceedingly fatal disease.

INCREASE OF HORSES

More Animals on Farms Notwithstanding Large Use of Motor Vehicles and Demands of Army.

Substitutions for the horse have so far failed to diminish his number on farms, where he is mostly bred. Since he was first separately counted in the census of 1850, his numebr has grown from 4,336,719 on farms in that year to 10,357,488 in 1880, to 18,267,020 in 1900, and to 19,833,113 in 1910, and the recent estimate of the United States Department of Agriculture for 1918 makes the number 21,563,000.

The railroad did not verify the common prophecy of the horse's gloomy future nearly a century ago, and many years elapsed before the heyday of the bicycle arrived with its expected menace to the horse. That machine of pleasure and toil diverted attention from the first real antagonist of the horse, the electric street railway, and this was a formidable one. Street-car service could not have been developed by horses to the extent that it has been carried by electricity, yet there was an enormous displacement of horses when they no longer pulled street cars. It is roughly estimated that 2,000,000 horses would be required to move the street cars in city service and that farmers would need to keep a stock of perhaps 3,000,000 horses to produce this supply. Yet, horses kept on increasing.

Replacement of Horses by Motor Cars Exaggerated.

Apparently the most effective foe of the horse has appeared in the last 10 years in the motor vehicle, although its importance in this respect is popularly exaggerated. According to statistics collected by the United States Department of Agriculture, the total State registrations of motor cars were 48,000 in 1906, about 500,000 in 1910, over 1,000,000 in 1912, over 2,400,000 in 1915, and 3,512,996 in 1916.

Automobiles do not mostly displace horses but many are used by men in occupations dependent on either horses or automobiles for personal movement, such as real estate agents, builders, and some merchants and manufacturers, and there is also the large public automobile passenger service in cities and, again, the large number of automobiles owned by farmers in place of driving horses. The bulk of the automobile owners, off farms, however, would not be owning horses as the alternative.

Motor Truck Displaces Three Horses.

With motor trucks and commercial vehicles the case is different. Here is clearly a complete substitution of fuel power for horse power. It is the opinion that every motor truck on the average displaces three horses. The State records often merge the registration of motor truck and commercial vehicles with that of automobiles, but, to the extent that the separation is made, it is known that 118,682 of the former were registered in 1916. Probably the displacement of horses by motor trucks and commercial vehicles represents a stock on farms of a few million horses, and to these must be added the stock eliminated by the automobile.

Last of all, the farm tractor has appeared, with conjectional possibilities, but as yet with no perceptible displacement of horses in the country at large.

War Increases Demand for Horses.

Unusual and large demands for horses for war purposes have been made since the autumn of 1914. During the 10 years preceding, from 19,000 to 40,000 horses were exported annually, while the imports were from 5,000 to 33,000, so that the net exports were no appreciable draft on domestic production. In the first year of the war 289,340 horses were exported, in the second 357,553, and in the third 278,674 horses, and within less than a year the needs of the Army of this country have called for a large number of horses.

Notwithstanding the various forces that have been working against increase of horses on their breeding places, or rather, in common expectation, to reduce their numbers at a strong rate, the fact is that horses on farms increased at the average yearly rate of 183,000 since 1900 and more than that since 1910, or 216,000 per year. Per capita of the population, farm horses tended to increase from 0.19 of 1 horse in 1850 to 0.24 in 1890 and 1900, after which the decline has been to 0.20½ in 1918, or still above 1850. At the same time, however, by means of machinery the farm horse has constantly gained as a producer.

Farm Price Decreases.

Strange though it may seem, the average price of a horse at the farm, all ages and conditions included, is less than it was four years ago, and even eight years ago. Since 1897 horse prices at the farm for January 1 had risen from $31.51 to $111.46 by 1911, the highest average in the Department of Agriculture's record for 58 years, but a decline followed to $101.60 in 1916 and then a gain to $104.28 in 1918, apparently caused by the war. The explanation of the arrested advance in price and subsequent decline is said to be "gasoline," although this motor fuel has not yet caused a decline in the number of horses.

RATIONS FOR ENGLISH LIVESTOCK

Extreme scarcity of concentrated animal feed in England has resulted in the establishment of livestock rations which are now in effect on the following basis:

Horses for farm work and transportation may have ten pounds per head daily.

Milch cows not on grass may have a daily ration of four pounds of feed per head, which is to be reduced to two pounds after August 1.

No concentrated feed may be used for feeding sheep, pigs or cattle other than milch cows. This class of stock is expected to live on roots, grass, hay and similar products.

DON'T WASTE FEED

Corn Put Into the Silo Saves $32 an Acre on a 50-bushel Crop.

At least 37 per cent of the digestible material of the corn plant is left in the stover when the ears only are used. When corn is ensiled this 37 per cent goes into the silo with the 63 per cent in the ears. The importance of this saving will be more apparent when given a money value. With a yield of 50 bushels an acre, the value of grain is $65, at $1.50 a bushel. Since the stover contains more than one-third of the food nutrients it is worth at least one-half as much as the grain, or $32.50. How many farmers will willingly leave in the field $32.50 an acre? Yet this is done in many sections of the country where the corn is husked and the stover left in the field.

But suppose the dry stover is fed as roughage. Even then it is not well saved as completely as in silage. When, under ordinary farm conditions, corn is cured in the shock the loss of dry matter is approximately 25 per cent and may be as high as 45 per cent. These losses are due to the breaking off of leaves by the wind and in handling, and to destructive fermentations. The loss of dry matter in the silo is very slight when the silo is tight and the silage well packed at the time of filling. As silage the cornstalks is all consumed, but as stover only the leaves are eaten unless it is shredded, and even then a great part of the stalk is discarded. Some feeding experiments show that even in shredded stover the portion discarded is as high as 31 per cent. This is in addition to the loss of dry matter during the curing process.

Too fequently an unfavorable season like that of last year results in the loss of the whole corn plant or in immature soft corn that is of little value. By far the best method to utilize corn which is immature at harvesting time is to put it into the silo. Even frosted corn will make satisfactory silage if harvested at once. If it becomes dry, it may be saved by adding water during the filling process.

The making of as much silage as can be used will do much to conserve the feed supply. Have you planned to fill that silo?

INCREASING EFFICIENCY BY ALTERNATING TEAMS

The following interesting illustration of the amount of work it is possible to do by using heavy teams and alternating teams during the rush season. This information was contained in recent letters to the Percheron Society of America.

"I may say that we have just finished seeding 170 acres of oats in three and one half days time, with one drill and eight registered Percheron mares. One set of four mares started at day break and worked until noon, being replaced by the other four, which stuck to the job until dark. As we always seed down our small grain land to timothy and clover, you will see that we have two year's crops from the one operation, off from 170 acres. We are through with that piece of land until harvest time this year and haying next season. Before the hay is put up next year we hope to have sixteen colts out of those eight mares, if they live up to past standards, the same operation will be repeated about this time next season.

We have a 10½ ft. drill, which four good mares will handle nicely at a good stiff walk. We found we were doing an average of approximately three acres an hour, or between 45 and 50 acres in a sixteen hour day. Where the field was half a mile long, we would make the round trip in 20 minutes, seeding about 1¼ acres each round.

The first set of mares would go on at daylight, the second set relieving them at noon and going until dark. Will say three of the mares weighed better than a ton, the other five between 1800 pounds and a ton. They were all good walkers and seemed to handle the big drill with ease. Three of the mares have just dropped good colts and the others are due shortly.

We started in to do a whirlwind job and to do it good, and we accomplished this in 3½ days, or, to be exact, in 58 hours. We think this is some record for others to shoot at.

Might add that I have a couple of tractors for sale, both are here on the farm and will be sold at the halter. Each one was claimed the "best on earth" at time of purchase, but even at that, they seem a little hard to turn as they show a little age, one of them being slightly better than six months old.

LOOK OUT FOR FIRES IN HAY STACKS—SEE THAT HAY IS PROPERLY CURED

A well-filled mow or a big stack of hay, symbol ordinarily of happy prosperity, may contain within it the lurking spirit of a fire that will sweep a farmstead.

Cutter's
Refined
Germ-Free
Anti-Hog Cholera Serum

Produced in the Most Up-to-date and Best Equipped Anti-Hog Cholera Serum Plant in the World.

Does away with the risks that necessarily attend the use of a serum that is not germ-free.

It is 20% more efficient, measure for measure, than the old type, "bloody" serum, is much more quickly absorbed, does not discolor the flesh at point of injection, and carries no liability of producing abscesses.

80 c.c. of Cutter's Refined Germ Free Serum is just as efficient as 100 c.c. of the best old type "bloody" serum.

But we make the old type serum, and do the job so well that though **we have sold several million c.c.** since we started production in 1917, there has been **not even one complaint of failure** to protect, or of bad effects following its use.

So, whether you use the old or the new kind, insist on "Cutter's," for in either case you will be getting the best that can possibly be produced.

Remember, a serum may be "clarified," or "clear," and still not be germ free. Such a serum is almost as dangerous as a "bloody" serum. **Cutter's Refined Serum is not only clear but it is Germ Free.**

Write for our two new booklets, "Hog Cholera Prevention," and "Special and Detailed Information Concerning Hog Cholera Immunization." **From the latter you will learn** what constitutes good work and why a competent veterinarian should be employed.

Prices.

Cutter's Refined, Germ-Free, Anti-Hog Cholera Serum is 2½ cents per c.c.

Cutter's Regular, or "old type" Serum, is 1½ cents per c.c.

Cutter's Hog Cholera Virus, for use with either type of serum, is supplied at 1½ cents per c.c. **It is dependable.**

We prepay shipping charges.

Let your veterinarian order for you and **encourage him to be liberal in estimating the amount of serum to use;** safety lies in giving more than may be needed rather than trying to figure too fine.

Should he be prejudiced in favor of some other serum, there is a reason that concerns him but not you, except insofar as it should make you more insistent that Cutter's Serum be used. **In such case do your own ordering direct from us.** You will get "Cutter's" promptly, prepaid.

The Cutter Laboratory, Berkeley, Calif.
(U. S. LICENSED)
"The Laboratory That Knows How"

Many destructive blazes have been caused by a spontaneous ignition of hay, especially clover and alfalfa. The first cuting of the latter seems to be most dangerous. If hay of this kind has rain or dew on it or if the stacks are not cured thoroughly, the moisture will cause fermentation which may produce sufficient heat to start a fire. The combustion, however, can not continue long without oxygen and may cease without coming to the surface. Its presence can be detected by a peculiar sooty odor or by smoke irritating to the eyes. It may take place from a few days to several weeks after the hay is put up.

FARMERS SHOULD FIGHT THE WEEDS

(Continued from page 11)

tles, burdocks, cockleburs, Canada and Russian thisle and other noxious weeds before they mtaure their seeds; provided, that this section shall apply only to right of way that abut, lie contiguous or adjacent to cultivated lands or pasture lands inclosed by a fence.

"Secion 4. Penalty of Non-compliance.—Any person or persons, company or corporation or railroad company in this State failing to comply with any of the provisions of Sections 1, 2 and 3 of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten dollars nor more than three hundred dollars, said fines to be recovered with costs in any action to be brought in the name of the State by the county in which said lands, ditches or other water courses are situated.

"Section 5. Duty of County Commissioners.—The county commissioners of the several counties of the State shall at least once in each year and oftener if deemed necessary, require the county road commissioners of their respective counties to clear the public roads in the county of noxious weeds and the costs of the same shall be paid out of the county fund. And said county commissioners shall, whenever petitioned by twenty-five land owners of the county, appoint the county road commissioner ex-officio weed inspector and authorize him to inspect the lands and rights of way of the county, and they shall prescribe all other duties of said weed inspector that may be deemed necessary for the enforcement of the provisions of this act. The actual and necessary expenses of aid weed inspector shall also be paid out of the county fund.

Section 6. Id. Fixing Time by Ordinance.—The county commissioners may, by ordinance, fix the time for the destroying or cutting of noxious weeds as in this act provided, and provide for the posting or publishing of notices announcing the time allowed for such purpose, and may require that said noxious weeds be destroyed oftener than once in each year and may designate and order the destruction of other weeds not enumerated in the act.

"Approved March 20, 1911."

BOOK ON SUGAR BEET CULTURE

Dr. F. S. Harris, Director of the Experiment Station of the Utah Agricultural College, has just returned to the publishers the final proofs for his new book, "The Sugar Beet Industry." This book, a volume of Rural Science Series, edited by L. H. Bailey of Cornell, will be issued early this fall. It was pushed to an early completion by Dr. Harris, on the earnest request of the publishers, because the present sugar shortage demanded at the earliest possible moment, an authoritative work on the production of sugar beets and the extraction of beet sugar.

The new volume treats the sugar beet industry from all angles following an introduction chapter giving the early history of the beet sugar industry. Dr. Harris treats in successive chapters the sugar beet plant, conditions for growing sugar beets, soils adapted to their growth, manuring and rotations of crops, contracts for raising beets, preparation of the seed bed for planting, cultural methods, irrigation and drainage of beet fields, harvesting beets, pests and diseases affecting the beet, factors affecting the quality of beets, and cost of producing beets.

Due to the extensive work done by the Utah Experiment Station in the production of sugar beet seed, the chapter covering this subject will be received with espeical interest by the agricultural world. The sociological side of beet culture is treated in a chapter on beet raising and community welfare. The closing chapters of the book cover sugar making, sugar cane culture, and the world's use and supply of sugar.

GARDEN CUTWORMS: HOW TO DESTROY THEM

Mr. H. J. Ryan, of the Bureau of Entomology, Department of Agriculture, gives the following pertinent information regarding these pests of the farmer:

Cutworms are usually the first of our insect pests to attack the truck and vegetable garden after the plants appear above ground and are chiefly conspicuous by the results of their work. They are mostly concerned with young succulent plants, and the grower finds in the morning that the stem of a plant has been eaten into near the ground, or the entire plant has been lopped off and only a stub a half inch or so in length remains protruding from the soil. Tomatoes are often destroyed in this manner. Cabbages and lettuce are also favorite food plants of these pests; indeed, practically all early vegetables and truck plants are subject to injury.

If the interested gardener will dig an inch or so into the loose soil about the base of the injured plant, he will probably find a curled-up, dark-colored, fat, sleek "worm" from half an inch to an inch in length.

Summary treatment is obligatory if one would circumvent activities so unquestionably hostile. A thief who works only at night, the cutworm's life history dates from an egg laid by a small gray or brown moth about an inch across the expanded wings and who also shuns the sunlight.

How to Fight Cutworms.

Cutworms find protection during the day under trash and garden refuse as well as in the soil. We may take advantage of this habit by placing pieces of boards between the rows. Many of the worms will crawl under these in the morning and can be found there during the day.

Some good may be accomplished, on a small scale, by digging the worm out and crushing them. It is also possible to find some at night by the aid of a lantern, but such methods are not practicable and merely makeshifts at control.

Poison Bait Remedy

The best remedy and one which can be used successfully on either a large or small scale is poison bran bait. For use in small garden 2 quarts of bran should be thoroughly mixed with 2 teaspoonfuls of white arsenic. To this is added a pint of cheap molasses stirred into one-half gallon of water. The mixure should be made up to the consistency of a stiff dough and allowed to stand for several hours to enable the poison to soak into all the bran particles.

The bait should be scattered over the garden, especially at the edges, and about the base of the plants in lumps about the size of a marble. If distributed late in the day, it will remain fresh and tempting to the worms when they commence their activities.

For large areas the following formula is efficient: Twenty pounds of bran, one-half pound of white arsenic, one-half gallon of molasses, and enough water to make the dough. This should be sufficient for 4 to 5 acres. It is sometimes necessary to repeat the application. The addition of fruit is unnecessary.

PUT A SEAT ON YOUR HARROW

It is a waste of energy to plod along behind a harrow in the soft ground. It is hard work, and requires a sturdy constitution. A much better way is to provide a seat on the harrow and ride. In recent years riding attachments, similar to the ones commonly used on disk harrows, have been employed on spike-tooth and spring-tooth harrows. They add little to the draft and make available for this sort of work labor which otherwise could not be used.

The proper maintenance of farm machines not only saves money but avoids danger to those who operate them. Keeping the harness and vehicles in repair may prevent a dangerous runaway.

HAVE YOU ANY PURE-BRED LIVESTOCK?

There is a good demand for pure-bred hogs, cattle, dairy cows, and poultry. If you have any to sell advertise them in the Utah Farmer. Address the Lehi Office.

"This is for you, girls!

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed *to a trace* when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed *faster* when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight *tube* with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

Sharples Separator Co. - West Chester, Pa.

Ask for Catalog "Velvet for Dairymen."—addressing Dept. 104

Branches: Chicago San Francisco Toronto S29

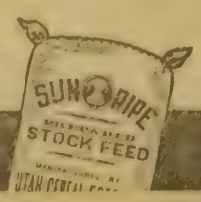
Summer Feeding

When grazing is at its best, stock still demand an occasional feeding of

SUNRIPE
Stock Feed

Keeps stock in the "pink" of condition. It's real economy to feed Sunripe Stock Feed the year 'round. Order a supply today from your dealer.

Utah Cereal Food Co.
Ogden, Utah.



POULTRY

VHEN EGGS ARE CHEAP PRESERVE THEM

Byron Alder, Utah Agricultural College.

Preserving eggs for the home is not new practice. The quality of eggs, roperly preserved for six to eight onths, is practically as good as fresh ggs. Eggs lose in flavor and quality decomposition, by the development d by the loss of moisture through aporation. Preserving eggs is simy preventing this loss by proper ethods of production and storage. the various methods of preserving ggs the water glass-sodium silicate—ethod usually gives best results.

Method for Using Water Glass.

"Water glass can usually be obined at any drug store and should ot cost more than $1.00 to $1.25 a llon. A gallon of water glass proerly diluted and mixed should be ough to store about 60 to 70 dozen ggs.

Boil 10 quarts of water for a few inutes and allow to cool. When old add 1 quart of good quality water ass and stir thoroughly. Let the ixture stand a short time, and give nother brisk stirring. The water lass is heavier than water and will to the bottom unless thoroughly ixed. This should give enough of e mixture to cover 15 to 20 dozen ggs, depending on the snape of the torage vessel and the way in which e eggs are packed. If the eggs are refully placed in the vessel on end nd close together more eggs can be ut in and less mixture required to over them. This is not necessary, owever, and it is sometimes more convenient to mix the solution, pour it into the preserving vessel and add the eggs, a few at a time, as they are gathered each day fresh from the nests.

Any clean vessel can be used, but it is better to use one of crockery, glass, or wood than one of metal. A sweet, clean barrel is good, where 50 or more dozen are preserved. A clean, cool, sweet cellar is the best place in which to put the containing vessel.

All eggs must be completely covered by the water glass as long as they are in storage. If some of the liquid evaporates, more water should be added. A good lid or cover will prevent evaporation. Waxed paper makes a good cover.

"Do not use the solution a second time; make a fresh solution each year.

When water-glass eggs are to be boiled, stick a needle through the shell at the large end of the egg to prevent the shells from breaking.

Fertile eggs can be preserved as well as infertile if they are perfectly fresh and are stored in a cool place. Temperatures between 65 degrees F. and 45 degrees F. are best for either.

All eggs for preservation should be clean, fresh, of good quality with good smooth sound shells, gathered often from clean nests, and treated as soon as posible after they are laid.

"Dirty egg or eggs that have been washed always spoil more readily than clean fresh eggs and should not, therefore, be preserved by any method. Cracked eggs will always spoil."

his registered Jersey calf will make the ery best kind of sire for a herd where roduction and quality is aimed at.

The udder on his two-year-old mother peaks for her quality.

She is from the famous Torono bull, hose sire is the Hood's Farm Torono, ho has more register of merritt daughers than any living sire.

The calf's father is out of the Pogis ull, whose father is the sire of two orld's champion cows.

On the mother's side the calf's grandother is a heavy producer with a test 6.1 per cent butter fat.

The gread-grandmother is high in butter-fat and has a record of 40 pounds of ilk per day for 30 days, and has many aughters of similar high production.

On both sides then the ancestry is so ood that one can be positively sure of ood results in the offspring of this calf. He is worth $75.00 now and will inrease in value each month.

DR. WALTER T. HASLER
Provo Utah

PRODUCE INFERTILE EGGS

Poultry experts emphasize the need of disposing of roosters in order to prevent loss during the summer through fertile eggs. The fertile egg will germinate at a temperature above 68 degrees, thus spoiling the egg for market purposes, especially when the temperature gets around 90 degrees and 100 degrees. The infertile eggs will stand a temperature of 103 degrees without deterioration, for five days. After taking the male birds away the eggs will be fertile for at least ten days or two weeks. Do not be misled by the idea that it is necessary to keep the male birds with the flock to increase egg production. Collect your eggs twice a day. Keep them in a cool place away from contaminating odors. Keep your nests clean and the litter on your floor clean and your eggs will be clean. Provide one nest for every four hens. Market your eggs at least twice a week. By producing infertile eggs you are doing your bit toward increasing the supply of food stuffs.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending June 25th—Cattle—Receipts, 5,131; market, steady; choice steers, $9.50@11.50; good, $7.00@9.00; feeders, $5.00@7.00; choice cows and heifers, $7.50@9.00; fair to good, $4.00@5.50; canners, $3.50@4.50; feeder cows, $3.00@4.50; veal calves, $8.50@9.50; choice bulls, $6.00@7.00.

Hogs—Receipts, 1,367; market, slightly lower; tops, $15.75; bulk of sales, $15.75.

Sheep—Receipts, 3,882; market, steady; lambs, $16.00@16.50; ewes, $10.00@10.50.

North Salt Lake, June 25.—Cattle—Receipts, none; market steady. Choice heavy grain-fed steers, $12.00@13.00; good steers, $10.00@12.00; feeder steers, $7.75@9.50; choice cows and heavy heifers, $8.50@10.00; fair to good cows and heifers, $7.25@8.50; cutters, $6.00@6.50; canners, $4.50@5.50; fat bulls, $7.00@8.00; bologna bulls, $5.50@6.50; veal calves, $10.00@12.00.

Hogs—Receipts 98; market 25c lower. Choice fat hogs, $15.75.

Sheep—Receipts, none; market steady. Choice spring lambs, $16.25@17.00; choice shorn lambs, $13.00@13.50; wethers, $10.50@11.50; fat ewes, $9.00@10.50.

Omaha, June 25.—Hogs—Receipts, 16,500; 5 to 15c higher. Heavy, $15.95@16.20; mixed, $16.05@16.15; light, $16.10@16.25; pigs, $11.00@15.50; bulk, $16.05@16.20.

Cattle—Receipts, 4300; strong, 10 to 15c higher. Native steers, $12.00@18.00; cows and heifers, $8.00@14.00; western steers, $9.50@14.90; Texas steers, $9.00@10.00; cows and heifers, $7.50@11.50; canners, $7.00@8.00; stockers and feeders, $8.50@13.00; calves, $9.00@13.25; bulls, stags, etc., $8.50@12.50.

Sheep—Receipts, 11,300; lower. Wethers, $12.00@13.00; ewes, $10.50@12.50; lambs, $16.50@18.50.

The Farmers Market Place

FOR SALE—REAL ESTATE

Farms and Acreage

RELIABLE FARM BARGAINS

We are offering this week at Woods Cross, six acres of excellent garden land, with a 6-room house and barn and other improvements. The land is planted to raspberries, strawberries and garden truck. This property can be had for $5000, or will exchange for a ranch in southern Idaho or northern Utah. This property is located within 10 minutes of the car line.

We are offering the following farms this week, with full water right, all under a high grade of cultivation, on easy terms, with a small payment down:

120	acres	at	$150.00 per acre.
60	acres	at	150.00 per acre.
80	acres	at	130.00 per acre
60	acres	at	200.00 per acre.
40	acres	at	60.00 per acre.
40	acres	at	75.00 per acre.
40	acres	at	50.00 per acre.
80	acres	at	65.00 per acre.
58	acres	at	200.00 per acre.
40	acres	at	125.00 per acre.
60	acres	at	50.00 per acre.

The above are just a few of the many farms that we have for sale. If you are looking for a good farm, we feel certain we can suit you on price, location and terms. For further information, call or write—

KIMBALL & RICHARDS,
"Land Merchants."
54 So. Main St.,
Farm and Ranch Department.
Wasatch 963.
Salt Lake City.

RANCH BARGAIN

200 acres irrigated, all fenced, good ranch house, stables, corrals, and cattle sheds, puts up 150 tons of hay, 50 acres of wheat and oats, team, and machinery. Located on creek near the mountains with an abundance of range. Price $10,000.

FEDERAL LAND COMPANY
Ogden Utah

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah

Over 150 Spring Pigs

Sired by our Grand Champion Richards Defender, Richards Pathfinder and Cherry King Orion, Jr., and out of our big type prize winning sows.

In the last three years at the Utah and Idaho State Fairs our hogs won 76 Champion and First Prizes.

Can furnish unrelated pairs. Satisfaction guaranteed or money refunded. Prices very reasonable.

Richards Live Stock Co.
Virginia Idaho
Home of the Champion Duroc.

Registered Duroc Jersey Hogs.
Some good spring litters. Richard Defender and Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.
ERIK W. OLSEN
Virginia Idaho

WE WANT FARM LANDS
IN EXCHANGE FOR
SALT LAKE CITY PROPERTY
BRUNEAU-HILL INVESTMENT CO.
343 Main Street Salt Lake City

LUMBER, lath millwork. Get our direct-to-consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

Orders placed for spring pigs from big type Utah Prize Winning Sows and such Boars as 'Path Finder," "Defender," and a Grandson of "Burks Good E. Nuff." Prices right and guaranteed to please—papers furnished. V. R. FISHER, Oxford, Idaho.

HAVE BUYERS FOR GOOD FARMS
AT RIGHT PRICES
List your farm with us.
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All Cars Stop In Front of Our House
A home like place for local people where you will meet friends.
Good Rooms 75c, $1 and up.
The Windsor Hotel Co.
M. A. Scott.

ONIONS AND HOW TO GROW THEM

(C ntinued from page 1)

nigh impossible without tne aid of humus.

Cultivation should begin as soon as the rows can be seen. Careful attention to the crop in the beginning necessitates less attention later in the season and saves labor. The onions should be cultivated after until about August, when the tops become heavy. Hand weeding should be done as soon as tne hoeing is commenced.

Onions should be carefully weeded two or more times early in the seasons, as the weeds, if permitted to become large, will interfer and disturb the onion roots when taken out. Weeds will often reduce the tonnage from 25 to 50 per cent. Usually the thinning of onions is done at the second hoeing.

Harvesting of the crop usually commences about the last of August. If onions are left in the ground too long they will start a second growth and this injuries their keeping qualities. Onions should not be left on the ground too long after being pulled, but should be topped and placed under cover as soon as possible to prevent being sunburned and colorless. Onions should be stored away so they can be marketed when they will bring the best price. Onions kept in a dry cellar that is not too warm will always keep well.

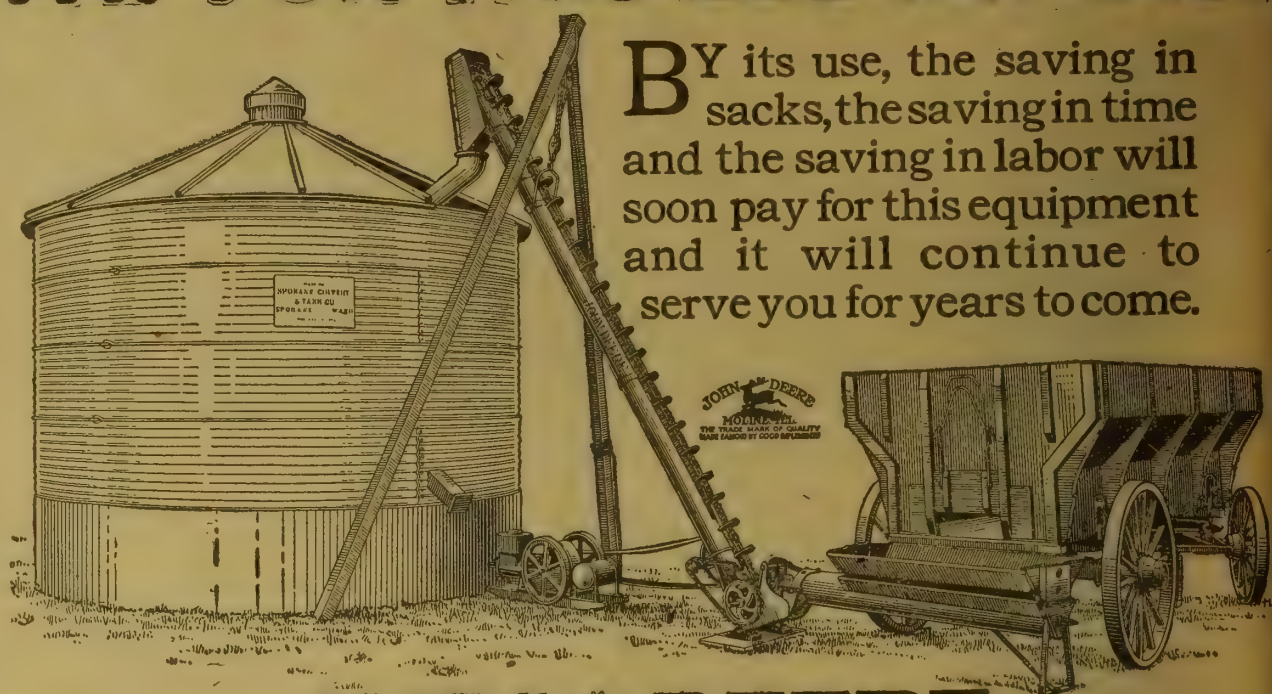
As to the value of onions as a part of our diet I am going to quote from a prominent medical authority who says:

"Kill the onion and you leave a gap in the universe, kill anything else and there is a substitute for it. The potato is akin to the cereal; cabbage, turnips and cauliflower are of the same family; beans are elongrated peas; the lemon is a pessimistic orange, watermelon the survivor of the cucumber, and so on.

"But the onion is alone suigeneris, alone, unique, triumphant. It is a special creation to tempt the palate of a weary world. Man in his wisdom might have guessed everything else under the sun, but he never would have guessed an onion. Science may deduce a new star before it becomes visible, or radium before its discovery, but the onion would have gone on uninvented forever had not its own insinuating yet not bashful quality forced itself into tear-filled eyes and upon liquescent anticipatory lips.

"With what mixture of gratitude and awe should we view the spectacle of nature turning her energy to the transmuting of mere clay into a vegetable with an artistic temperament.."

LET THE MONEY IT SAVES PAY FOR THIS ELEVATOR.



BY its use, the saving in sacks, the saving in time and the saving in labor will soon pay for this equipment and it will continue to serve you for years to come.

JOHN DEERE

TUBULAR STEEL ELEVATOR

It handles all small grains—wheat, oats, rye, barley, shelled corn, flax, rice. It has big capacity—it elevates 15 to 20 bushels per minute—handles the biggest load in six to eight minutes time. This big capacity is secured at comparatively low elevator speed.

It serves you when marketing your grain, as well as when harvesting it—elevates from the wagon into tanks, granaries or cars—elevates from tanks or storage bins into wagons. Operated by either engine or horses, its purchase ordinarily does not result in extra expense for power. A team of horses or a 2½ H. P. engine or larger will operate it.

The hopper, of big capacity, can be folded up out of the way when the load is driven up. Lower the hopper and the elevator is ready for duty. Backing the wagon is unnecessary. Hopper is provided with an adjustable feed by which the volume of grain being elevated is accurately controlled—you can quickly adapt the elevator to the power you apply.

Built of steel almost entirely, it will not warp or decay. The elevator proper is made of 3/16 in. steel well-casing, 6½ in. in diameter. It will never wear out. Round steel flights run smoothly inside of casing. The heavy elevating chain is fastened to center of flight. Grain cannot get under chain or into sprockets—no grinding, cracking or spilling of grain.

Shafts which operate in self-aligning bearing cannot get out of line and cause heavy draft and breakage.

Portable outfit furnished for big ranches where quick transportation is required.

Because of the many years it will serve you and its extremely low maintenance cost, the John Deere is decidely the most economical elevator to purchase. It is a real solution of your grain handling problem.

Don't wait until too late to get a John Deere Elevator—see your John Deere dealer at once—get extra value by getting the best—the John Deere.

John Deere elevators are carried in stock by John Deere Houses at Portland, Spokane Seattle, Boise and San Francisco.

Write for Free Package TE 330 and get literature fully illustrating and describing the John Deere Tubular Elevators and also catalog *"Better Farm Implements and How to Use Them,"* a big 156 page book chock-ful of valuable information on farming subjects. Write today. Don't delay.

JOHN DEERE, MOLINE, ILLINOIS

JOHN DEERE PLOWS — JOHN DEERE MOLINE ILL. — Make Every Stroke Tell

GETTING MORE WEAR OUT OF IMPLEMENTS

Victor Lauriston.

Farmers, implement dealers and implement manufacturers alike benefit when an expensive implement gives the longest and most satisfactory service possible. No one benefits when the life of a costly piece of machinery is cut short through careless exposure to the weather, or neglect of adequate precautions to keep it in good condition.

This carelessness in regard to farm machinery is, in many districts, an old story. The objection that it takes time to look after the implements, and that sheds, painting and similar items cost money, is urged, and with justice. Nevertheless, available figures indicate quite clearly that the saving of money is merely temporary, and in the long run financial loss is entailed; while perhaps the item of time and labor, a more important item with most farmers, does not in actual practice bulk as large as it does in the imagination. Systematic arrangements will, in any case, reduce the expenditure of time and labor to a minimum.

Enquiry shows that, as a rule, in mixed farming communities, where more barn-room is available, the implements are better cared for, and usually housed during the winter. Implement painting, though more generally practiced than heretofore, is still rare.

In some grain growing districts the larger part of the machiney is usually left out of doors during the winter. Investigation some time ago showed that in these districts the average life of a binder was only seven years. In that in these districts the average life the older settled portions where machinery is housed during the winter months, the average life of the binder was between sixteen and seventeen years; practically two and a half times as long. Many binders were reported still in good running order after twenty year's work.

What the farmer buys from the implement dealer is, not so much wood and metal and paint but so much service. Service is what ought to interest him. Yet service depends, not merely upon the excellence of the machinery in the first instance, but to a large extent upon the care given the machinery after it is purchased. In a great many instances the machinery is blamed for the results of neglect; in other instances it gets credits for the results of care. To a large extent the success of the implement dealer, and the reputation of the lines he handles, must depend on the satisfaction his implements give. Accordingly, it is to his advantage to urge the proper care of implements. Good results are a good advertisement. True, the implement which depreciates too rapidly must be replaced earlier than the implement which endures and gives service. It is, however, the implement which gives service which draws repeat orders; the implement which depreciates rapidly is pretty sure to be replaced by one of a different make.

For the farmer who ultimately sells out, the problem has its direct financial aspect. One instance is interesting. A western farmer made a practice of keeping his machinery under cover. After twelve years he retired, and held a sale. His binder, in service the entire time, after cutting twelve crops, sold for approximately eighty dollars, which was practically half the initial cost. His other machinery brought proportionately high prices. Machinery of any sort is often reckoned to depreciate fifty per cent, in the first year of use; once used it must be rated secondhand. But, after twelve years of service, this man's implements were worth as much as they were a year after he bought them. Yet on the farm next to his a binder was scrapped after cutting three years' crops, and a new one had to be purchased. The trouble was not in the implement but in the care given it.

It is important on the farm that implements should be always ready for instant use. In a wet harvest season, when it is absolutely necessary to take advantage of every dry day, the farmer who has to stop and tinker with his binder during many precious moments of sunshine will appreciate the value of preliminary care and inspection of implements.

Fortunately, winter, when there is comparatively little outdoor work, affords opportunity to prepare the implements for the busy times ahead. During the winter, every implement should have a thorough overhauling. Then, worn or weakened parts can be attended to and replaced. Dust and grease should be eliminated by a thorough cleaning; such a cleaning will disclose any defects; and such defects had better be disclosed when there is ample time to remedy them, instead of waiting for accident to disclose them when the implement is in actual use. Finally, needful precautions should be taken against rust before the machinery is placed in the implement shed.

To control or eradicate a weed it is first necessary to determine the kind, the character, and habits of growth and reproduction, and sufficient about its life history to fix the time when it is most susceptible to treatment.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 49 JULY 6, 1918

Government Appeal to Beet Growers

Need of Increased Sugar Production---Use of Sugar Restricted

About the first of the year there was an urgent appeal to the sugar beet farmers to plant more beets this year, now comes another appeal to make the acreage planted produce as many sugar beets as possible. By better care, cultivation and irrigation it will be possible to produce more and better beets and if every farmer will take hold of this in a patriotic way there will be an increase of many tons. A few hundred pounds increase on each acre means thousands of tons is the great total at harvest time.

The thinning is about over now and cultivation and irrigation are the important things to look after. Do the hoeing just a little better than usual. When you cultivate be careful to destroy no beets. Let your help the boys and girls, or who ever may be assisting you, know the urgent need of more sugar and tell them that every beet counts every one must be taken care of.

When the hoeing is done see that no beets are cut out. See to it, however, that every weed is destroyed that nothing will interfer with the growth of sugar beets. If an extra hoeing will help. do not hesitate to do it. it will pay you. An extra cultivation may help increase the tonnage and pay you big wages for the time and effort spent in doing it.

The government is not asking you to do something without good returns, every beet that is saved, every extra pound produced. all means more money for you.

At ten dollars a ton beets are worth one half a cent a pound and it does not take long to make money with this price for beets. Make the beets grow, most every farmer knows how to do this.

There are only a few states where sugar beets are produced and the appeal is to those farmers who have planted beets to see that the largest tonnage possible is produced. For patriotism and profit you are asked to give just a little better care of your beets this year.

Sugar is one of the needs of the government and they are restricting the use of it so that our boys "over there" can have their share and we can help supply our allies with at least a small part of their usual needs.

On the 1st of July the use of sugar by manufacturers will be reduced by the Food Administration in this way they expect to avoid any serious scarcity for home consumption. Ice cream manufacturers are cut to 75 per cent of the amount used last year. Soda fountains can only have 50% of the amount used last year.

In reducing the amount allowed manufactors, the Food Administration expect the Nation as a whole to go on a 3 pound per capatia monthly rations. When used for canning and preserving the house wife can secure enough sugar for her own use.

We may think the price is high for sugar, lets compare our price with others.

During the first year of the war, the United States consumed more than four million tons of sugar. The wholesale price of refined sugar in this country at the present time is $7.30 per hundred pounds, as compared with $9.15 last August. The regulated wholesale price of sugar in various foreign countries makes an interesting comparison:

United Kingdom, $12.59 per hundred pounds, France, $12.28 per hundred pounds; Italy, $26.30 per hundred pounds; Canada, $8.07, United States, $7.30.

All of this information about sugar is given to show what the government is doing and the need of helping, by producing just as many tons of sugar beets as possible. A little extra work better care, more and better cultivation and the best of irrigation. As to amount of water and time it should be done, all of this will help to produce more beets. Help the government by doing your share and produce the best crop of beets possible.

SUGAR BEETS

BEET TOP ENSILAGE

Wendall, Idaho, June 2 , 1918.

Utah Farmer:

In a recent number of the Utah Farmer was an article on first page concerning the value of beet tops for feeding. We have lost this number. Will you send us another copy? We wish also to ask what your method of placing the beet tops in pit silos is? We have been told that a manure spreader could be used to spread the tops in long ricks, in unloading them. If you could give us information along this line from a reliable source, we would thank you very much. We have 100 acres of beets and wish to use the tops to best advantage.

Very trulp,

A. P. S.

The copy of Utah Farmer asked for has been mailed, as per your request. The use of the manure spreader in spreading the tops in a pit silo, as suggested in your letter is new to us. With 100 acres of beet tops to silo, you would need an excavation more than 100 feet long, even though the pit be made as much as 30 feet wide and four feet deep. The pit is made with a sloping incline at both ends and, therefore, it would be possible to drive through the pit and the spreader would probably give a more uniform distribution of the tops than unloading by hand. It would require turning and driving through a few times to unload but the weight of the spreader and team going through the pit would help to pack the tops, which is essential. It would labor the team to pull a spreader load, in gear, over the tops but horse energy is less expensive than man power. The gear should be set for a rapid discharge of the tops, in unloading. The beaters would chop the tops to a greater or less extent, in any event. The chopping or tearing of the tops would do no particular good as it is not necessary to chop the tops and crowns. However, the chopping by the beaters would do no harm. The idea that you advance is good and well worthy of a trial. The Utah Farmer will be glad to hear from you and also from others regarding your experiences.

We are informed that the Idaho Experiment Station will conduct some feeding experiments in your vicinity using beet top ensilage and other sugar beet residues along with alfalfa hay and other common feeds, the coming winter. We shall gather some very helpful suggestions and information from these experiments. Your 100 acres of beets should yield you approximately 600 tons of feed. Fed in the usual way, these tops would be worth about $1.00 per ton. It will cost not far from $1.00 per ton for labor to gather the tops and silo them. When converted into ensilage, the tops have a value of $8.00 or more per ton, on the present value of other feeds. It is not definitely known just what the shrinkage in the silo amounts to but probably between 10 per cent and 20 per cent—depending upon the manner of handling the crop. Sugar is a much needed war time food and so is also mutton, beef and dairy products. Beet top ensilage is a cheap and economical feed that deserves the attention of every beet grower.

You can arrange for a checking account and other financial conveniences overseas through our foreign banking service.

Send for explanatory booklet.

Walker Brothers Bankers
SALT LAKE CITY

CONSERVING IRRIGATION WATER

Some streams that supply irrigation water for the farming areas where sugar beets are grown are already running low. It will be necessary to make the very best and most economical use of all of the water available. The grain crops will soon be out of the way but alfalfa, beets, potatoes, pastures and other crops will continue to require irrigation.

Where the beets are large enough so the tops shade the soil, there is less evaporation of soil moisture. A shallow cultivation occasionally will help to conserve the moisture.

With late beets, the soil is yet exposed to the hot sun and in these fields, a shortage of irrigation water will be most keenly felt. Let the waterings be light but frequent. Be sure to follow with the cultivator just as soon as soil conditions will allow, after watering, and thus prevent the heavy soils from crusting and cracking and dissipating the moisture. Weeds steal lots of moisture and fertility. Don't tolerate them. It is expensive negligence.

SOIL SELECTION FOR BEETS

By J. A. Brook—Facts About Sugar.

Sugar beets will grow successfully in a variety of soils, yet there are a few essential characteristics of a good sugar beet soil which should not be overlooked by beet growers in selecting land to be devoted to the production of this crop.

Texture.

As is the case with many other crops, the texture of the soil has an important bearing on its adaptibility for sugar beet culture. The relative power of the soil to retain moisture is determined to a large extent by its texture. In addition to this the aeration of the soil, the supplying of oxygen to the roots of the beet, the escape of noxious gases, the oxidation of toxic substances; the movement of water and the general sanitary conditions of the soil are all dependent, to a greater or less degree, on the soil's texture.

The texture of soil is determined by the proportion of the different sized mineral particles it contains. Coarse-grained soils, under equal conditions of depth and exposure hold much less moisture and more air than fine-grained soils. Coarse-grained soils contain less solutions and consequently a smaller quantity of plant food in solution. Such soils also have a lower absorptive capacity and presumably permit a more rapid and, at times, possibly an excessive oxidation.

On the other hand very fine-grained soils have their weak points which render them undesirable for beet culture. These soils are "cold" and very difficult and heavy to work. In addition to this they have a tendency to become too compact and hard, a condition tending to retard the development of the beet root system.

Thus we observe that so far as texture is concerned the soil best suited for sugar beet culture is one which is made up of medium sized mineral particles.

Depth.

Sugar beets are deep rooters as is shown by the accompanying illustration, and develop an elaborate root that the soil should have sufficient depth in order that the root developmen will not be retarded. Sugar beet soil should not be less than three feet deep under any conditions. In arid or semi-arid sections it should be not less than four and one-half feet deep.

The Top Soil.

Soils usually have two natural divisions, viz.: the top soil and the subsoil. The top soil, which is composed of the surface soil and the sub-surface soil, is the portion which requires the most careful management, as it is the important part of the soil in the development of plant food, in seed germination, and in crop growth, since it is largely concerned in absorption and retention of moisture, aeration and temperature. The top soil should be at least twenty inches deep. It should be free from stones, weeds, stubble, and clods, all of which interfere with the growth of the beet. It should have the same general texture throughout, in order that the movement of the soil moisture should be fairly uniform.

The Subsoil

Sufficient moisture is an essential factor of sugar beet culture; therefore, the character and depth of the subsoil is of very great importance, for upon that, to a large degree, depends the moisture holding, drought - resisting power of the soil.

The subsoil of sugar beet land should under no conditions be composed of coarse sand or gravel, as these permit the water to leach through rapidly and it cannot be drawn back by capillarity. This condition brings about a shortage of available moisture and the crop consequently suffers.

Silty or clayey subsoils are preferred, due to the fact that they are sufficiently porous to permit the deep penetration of the beet roots and at the same time are retentive of moisture. The texture of these soils makes it possible for much of the water which passes to the lower depth to be brought up to within reach of the plant rots by capillarity.

Subsoils sometimes contain a layer of impervious material such as compact clay, carbonate of lime, or oxide of iron which is commonly termed "hardpan." In this connection it is well to note that hardpans and plowpans are not the same. The presence of hardpan is very objectionable if within four and one-half feet of the surface in arid or semi-arid sections of the country or within three feet in sections where there is ample spring and early summer rainfall, since it prevents the upward and downward movement of water and the deep penetration of the beet roots.

Water Table.

In no case should the water table stand nearer the surface of sugar beet land than four feet. Should it stand any nearer there is a possibility that a rotting of the tap root of the beet will result.

Humus

Sugar beet soil must contain plenty of humus. Humus is the most valuabel single constituent of the soil and one which every good farmer strives to save and arugment. The presence of humus in sufficient quantities helps to keep the soil loose and friable it improves its drainage makes it warmer than it would be otherwise aids in the retention of moisture adds nitrogen, phosphorus and potassium to the soil, lessens the danger of the oil baking, crusting, and packing, and renders the store of plant food which every soil contains, more available.

Chemical Nature.

It would be impossible to prepare an accurate table of chemical analysis which would apply to all sugar beet soils. We know that there are ten elements essential to all plant growth, viz: oxygen, carbon, hydrogen, magnesium, iron, sulphur, calcium, nitrogen, phosphorus and pottassium. The first five of these need not give the grower any concern, as they are always available in sufficient quantities to meet the needs of the plant. Calcium is usually present in the soil as one of the ingredients of lime. As a plant food, lime is not often deficient but it is often necessary to be augmented in order to correct and acid condition.

The principal elements which need concern the grower are nitogen, phosphorus and potassium. A ten ton yield per acre of sugar beets will remove approximately 29.9 pounds of nitrogen, 14.2 pounds of phosphorus and 71-2 pounds of potassium. It is obvious, therefore, that the soil selected for sugar beet culture should be well supplied with these elements either as a result of crop rotation or through the application of a fertilizer.

Soils Not Adapted.

In spite of the fact that sugar beets, of fair yield and quality, have been harvested from strongly alkaline soils, these are not recommended for sugar beet culture.

Virgin prairie and virgin timber soils, as a rule, should not be devoted to sugar beet culture. Such soils are very rich and they have a tendency to produce beets low in sugar, due to the great amount of soluble substances present in the soil which the beet will absorb in feeding. These soils should be planted to corn, potatoes or other crops for two or three years before being devoted to sugar beet culture.

Owing to the difficulty in working, together with their tendency to dry cut quickly, stiff adobe or gumbo and very stiff clays should be avoided by the beet grower. These soils crust and pack very easily and are very favorable for the development of root rot on the seedlings. There have been cases where soils approaching adobes have been used successfully in sugar beet culture and large crops have been harvested from strict adobes. These cases are the exceptions rather than the rule, however, and the grower is advised to leave such soil alone insofar as sugar beet culture is concerned.

Summary.

In general, the soil selected for sugar beets should be deep, fertile, rich in humus, nitrogen, phosphorus and potassium, free from hardpan, gravel or coarse sand, moisture-retaining yet properly drained, or even texture and in a good sanitary condition. Experience has shown that any fertile soil which has produced good crops of corn, wheat, barley, beans or potatoes will produce good sugar beets if it has sufficient depth and proper care is taken in the seed bed preparation. In all events the best land available should be devoted to the culture of sugar beets.

LITTLE CUBES OF SUGAR

Little Cubes of Sugar
  Little grains of wheat,
Save them with the bacon
  And other kinds of meat.
Ill fed fighters weaken
  Ill fed nations yield
Its up to us to keep our allies
  Strong to take the field.
Every dinner table
  Wherever people eat,
Will help decide the verdict
  Victory or defeat.

(Oregon Food Administration Bulletin)

GIVING THE PIGS A GOOD START

W. H. Tomhave.

Sunlight and exercise are fully as essential as feed for young growing pigs. Too many litters are stunted for want of getting out of a closely confined place. As soon as the pigs are a week or ten days old they can be transferred to a colony house with the brood sow. This gives them free range and they usually take all the exercise necessary to keep in a thrifty and healthy condition.

As soon as they are about a month old provide a place in the lot where they can be fed a little grain of some kind. A mixture of corn meal, four parts; middlings, three parts; and tankage one part makes a very desirabel combination to begin with. If a little skim milk can be had it may be substituted for the tankage. It can also be fed in addition to the grain mixture. The trough should be protected so that the sow can not get at the feed.

By handling the litter in this way, it aids the sow in developing them in better shape than is possible by not feeding them until they are weaned. It is further essential to get the early growth in as short a period as possible. A young pig well started is more than half grown. A combination of plenty of good feed, free range, for exercise, plenty of sunlight with clean and comfortable sleeping quarters gives every assurance of getting pigs properly started in pork production.

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The Farm Flock of Sheep

C. E. Wood.

Sheep husbandry should receive more attention from the farmers of this country than it does at the present time. Unquestionably it could profitably be fitted into the general management of thousands of farms where there are no sheep at the present time. On many other farms the size of the flock could be increased and more attention given to this branch of farming, with resulting profit to the owner.

In the breeding of pure-bred stock the beginner has a number of valuable breeds from which he can make a selection. It is not so much the breed selected that will lead to success, but rather the care and management. It must be noted, however, that certain breeds have a wider range of adaptability and are more popular. The number of pure-bred flocks is increasing every year and the demand for good breeding stock is more than keeping pace with the increase.

With a commercial flock there are several phases that are worthy of consideration. Early spring lambs is one of the most important, while late spring or early fall lambs should receive due consideration. The production of winter or so-called "hothouse" lambs is well worth undertaking by those who are favorably situated. This early lamb is a high-priced product and should prove profitable under favorable conditions.

Many farmers have disposed of their flocks and many others have refrained from entering the business because of some of the difficulties that are peculiar to this industry. Among the most important of these are cur dogs, parasites and diseases. A certain amount of trouble is enevitable where these abound, but ordinarily this should not be sufficient to discourage the flockmaster. Good management and proper care will control, if not eliminate, these difficulties. The flock that must rustle for itself is the one that suffers most from these sources. Sheep are good scavengers, but should not be made to subsist upon weeds alone, with little or no attention on the part of the farmer. The sooner the owner realizes that his sheep cannot return satisfactory profits under such conditions the better it will be for him. Any extra care and feed given to the flock generally yields great returns.

Sheep have ever been in the vanguard of civilization. This country has been no exception in that respect. The magnetism of cheap lands has constantly drawn the industry westward, creating a quite general impression that sheep are unprofitable on high-priced land. This may have been true in the past, but the industry is undergoing an evolution. The range is almost completely occupied and is constantly decreasing in extent. The cost of producing sheep in the range country has gradually increased, and today many western people are returning to the East for the purpose of raising sheep.

The period of exploitation is passing and a new era of constructive live stock farming is at hand, which means that a more intensive system of sheep farming upon high-priced land must follow. This is already in evidence in certain localities, and with better care than is now generally given the sheep should prove more extensive. In England the question is not whether you can afford to keep sheep on high-priced land, but whether you can afford to keep high-priced land without sheep.

Sheep will increase the fertility of the soil if they are handled properly. To do this they should not be permitted to crop off the grass so closely which they will do if the pasture is overstocked or if they are permitted to remain in one field too long. Sheep manure, with one exception, is the most valuable of all farm manures. It is thinly and evenly scattered over the ground and does not produce a rank growth in spots of the pasture as do other manures. The manure is also worked into the soil by the sharp hoofs of the sheep, so that it is not washed away, but becomes available as plant food. This quality has well earned for sheep the title of "golden hoof." In England land which during Queen Elizabeth's reign produced only six bushels of wheat per acre has been made to yield thirty bushels at the present time by the use of sheep. Many farms that have been cropped for twenty or twenty-five years are rapidly decreasing in their productiveness, and there is no class of live stock so well adapted to the building up of an old run-down, worn-out farm as are sheep. Their droppings are rich and are scattered over the fields in a better manner than can be done with the most improved manure spreader.

Again, as weed exterminators sheep have no equal. A few over 600 varieties of weeds are classed as growing in the region of the Mississippi valley. Sheep will eat 576 of them,

(Continued on page 10)

Keep The Nuts Tight

Harmon Jackson.

These are the days of steel machinery on the farm. Your father bought wood-frame machinery; his reaper, for instance, was wood; even we can remember the old woodframe hay rake, hand dumped, and the wooden corn planter our neighbor had.

Carriage bolts are used in these wooden beams and these, when drawn tight, remained so because of the natural elasticity of the wood. But in modern farm machinery where wood is used but little, the nuts on the bolts are drawn up against solid metal cast iron or steel against steel.

Spring lock washers are used but do not entirly fill the bill. When the nut is really down tight they neither "spring" much nor "lock" the nut appreciably against coming off since they are pressed flat and act very much like a common solid washer.

So, the cry of the agricultural machinery manufacturer is "Keep the nuts tight." The other day we watched the inspector go over a newly erected tractor. He had a pound and a quarter machinists' hammer and a brawny arm. Bolts were hit a heavy blow on the head, then were struck sideways on the nut end. If the bolt showed any tendency to move when so struck, the erector was told to tighten it up. And in pulling up some of them the heads popped off.

Nevertheless, the inspector insisted on "make the nuts tight." the idea being to produce so much friction between the two parts held together by the clamping action of the bolt, that the shear or side strain is taken up by this friction rather than by the bolts itself.

Then, too, a part which is a little loose in the erecting shop may be a little more loose after the test—and may come entirely loose after the farmer gets the machine.

Because it is an important matter, the cry has been extended—the farmer himself is being urged to "keep the nuts tight." It is reiterated—repeated, and explained to him that the life and the efficiency of his machine depends largely on keeping it in good condition.

As previously stated, a bolt which is really tight—which a manufacturer calls tight will not move when struck sideways with a hammer. Temper your blow, however, with judgment. Make the nuts that tight, but remember that between that point and the breaking point of the bolt, there is very little leeway. A bolt once really tight can go no tighter because all the elasticity of the joint is absorbed. Be careful, therefore, that the bolt is not broken by too much tightening. Where one end—either the bolt head or the nut sits on an unlevel surface such as the inner surface of a channel or I beam of structural steel, note that the bolt must bend. It is common practice to hammer the head on one side until it fits down on the surface. A half inch bolt is easily broken in this way, but a five eights, or three-quarters bolt may be struck violently if necessary to tighten it up. The tightening should be done with an extension on the wrench and the hammering should be done after the nut is fairly well pulled down—and again when nearly tight.

As we watched the inspector and heard his demand for "tight nuts," we thought what an excellent maxim, what a splendid motto for one to follow in all his affairs. "Keep the nuts tight." Keep all the little connecting links in the large system of your daily life and business, tight—keyed-up—in tip-top shape—and ready to meet any emergency. Keep your little debts paid—debts of gratitude, money, or duty. See that the hired man is contented—keep your boys on the farm (and the girls too)—build a shed for your machinery—fix the leak in the barn roof—know how much you are making in profit from each and every acre of your farm. In short—know you're making the best of your opportunities—are "keeping the nuts tight." Occasionally a head will "pop off" a bolt because you did not correctly judge the breaking point. But that is a trivial matter. Simply put in a new bolt and try it again—or, if necessary, make a place for a larger and stronger bolt.

In the everyday routine of living there are many and complex relations—joints or tinctures in the great system of civilization. There are many of these. And each, in your life and business is held together by a bolt, a bolt with a nut and a spring lock washer. You have the wrench in your ability to control your actions and direct your efforts. "Keep the nuts tight." Make your life or business efficient by binding together the different elements and units securely—almost inseparably.

Coming back to the concrete example, let us parody—as it were—on the old saying about the kingdom being lost because of a horseshoe-nail. For want of some energy and foresight a hired man did not tighten the

(Continued on page 7)

DAIRYING

A GRINDING MACHINE IS PROFITABLE

R. M. Jones.

When the writer worked on a farm it was customary to feed the milk cows whole ears of corn. One particular farmer had a standard ration of eight ears for each cow, no matter how much or how little milk the cow produced, nor whether it was rich milk or poor milk. They all received their regulation eight ears twice each day. This was a poor way of feeding cows, but it was the best that this particular farmer knew.

A few years later the writer visited this particular man's farm and he had changed his method of feeding. Instead of feeding whole corn ears he was feeding soaked shelled corn. Every night so much corn was put to soak in a barrel of water and the next day the cows were fed their ration from this corn. This probably was a step ahead of the old way of feeding, but still it was not considered a very successful method. The water soon got sour, some corn was over-soaked, and some was undersoaked. In cold weather the water in the barrel would often freeze. This ice water made the corn very cold. As a whole it was not satisfactory.

This same farmer has now purchased a gasoline engine and a grinder and every kernel of grain fed to his cows is ground. He learned that it did not pay to feed cows whole grain and have it pass through the digestive tract of the cow without being digested.

Formerly it was thought that even if the corn did pass through the cows in an undigestive form, most of the nutriments had been absorbed. Several experiment stations have now proven by chemical analysis that the corn and the grain that passes through the cow whole, is practically as nurtitious as is the corn before it passed through the cow. Several experiments show that when cows are fed the grain whole, as much as 22% of the grain passes through the cow in an unmasticated and undigestive condition. This is a serious loss, especially when grain is so high priced as it is now.

Pays to Grind Feed

Every dairyman should plan to have a feed grinder. These can be purchased now for the relatively small sum.

Grinding the grain saves the energy and work of the cow. What is the use of feeding a cow a lot of grain and then have her spend a large portion of it in grinding it herself. Take this load off from the cow and let the cow reserve her energy for putting this feed into the milk pail.

Grinding the grain saves the life of the cow. In nearly every instance it is the stomach and the teeth that give our first in a dairy cow. A good dairy cow we want to have last just as long as possible, so save her teeth and her stomach by grinding her feed.

The cow that will digest the greatest percentage of the food that she eats and put it into the milk pail, is the best and most profitable cow. Unless the feed is put into a condition so that it can be digested, little can be expected from a cow in the way of changing feed into dairy products.

WEED OUT SLACKER COWS

Income from dairy cows advances at a remarkable rate as milk production increases. This is why poor producers should be weeded from the dairy herd, particularly at this time when more milk is needed, when feed is in demand, and when labor is scarce. Tabulations of 5,587 cow testing association records gathered by the United States department of agriculture from various parts of the country, covering a period of four years, show that as the average butter fat production increased from 150 to 200 pounds the income over cost of feed advanced from $21 to $34; that is, a gain of 50 pounds, or 33 1-3 per cent, in production gave an increased income of 62 per cent over cost of feed. The net gain of 50 pounds raised the income over cost of feed to $50, the next to $63, the next to $74, the next to $87, the next to $100, and the last to $118.

As the butterfat production increased from 150 pounds to 300 pounds, the income over cost of feed advanced from $20 to $63; in other words, as production doubled income over feed cost advanced three times. When the butterfat production increased from 150 pounds to 450 pounds —that is, trebled—the income over cost of feed advanced from $21 to $100, or almost five times as much.

At this rate of increase, when only cost of feed is considered, one cow that produced 450 pounds of butterfat a year would show as much income over cost of feed as 20 cows whose average production was 100 pounds.

A study of the records, says the department of agriculture, showed that the cost of roughage was about the same for all the cows, regardless of production. The cost of grain was considerably higher for the more productive cows than for the low producers, but it was much lower per pound of butterfat. The increased income, however, though it should be credited in part to better feeding, was evidently due more largely to better cows.

ALL FARMS NEED COWS

The farmer knows that the dairy cow must pay her way and furnish a profit or she cannot be maintained on the farm. No one who understands farmers will advise us to keep our cows when they do not pay a profit. However, assuming that the cows are profitable it pays to consider the many unusual advantages of the dairy business. First, the soil needs fertility in order to produce crop and there is no way in which a large amount of fertility can be produced more cheaply than by the keeping of cows. This fertility would cost money if bought in the form of commercial fertilizer and in addition it would require the team work of hauling from the railroad. The additional fertility added to the soil by dairy cows is often neglected in figuring up the actual profit made from the cows.

The regularity of the income from milk is a factor in favor of dairying on at least a small scale. The farmer who sells his milk and has it hauled to the condensery or creamery disposes of his product with a minimum of labor and the checks form a regular income at frequent intervals, and this is of great convenience to the farmer, who has some expenses to meet every few days, even though some city people do think that it costs nothing to live on a farm.

The income from veal assists to increase the profits from the dairy. Some farmers formerly considered veal a nuisance but now a good veal calf is worth around $20 or more. One farmer in our section tells me that the money received from his veal calves is now the easiest money that he makes on his farm. The last three years we have found that a veal calf or a good heifer calf sold as a breeder can be disposed of at a profit, and that profit is as much due to the credit of the cows as the milk they produce.

The use of dairy products in the home is another point in favor of the cows. Fresh butter, cottage cheese, plenty of milk and cream and buttermilk are products which can be produced for home use to reduce the cost of living, and the cows should be given credit for them when the profits from the dairy business are considered. The city man who has to buy all his dairy products is paying a good price for them and, although that high price is not the fault of the farmer, the farmer should appreciate the value of the dairy products in his own home.

Dairying works in very well with other types of farming. One dairyman in the fruit belt recently told me that he started to keep cows several years ago in order to obtain manure for his orchards. He produced several thousand bushels of peaches in favorable years and the peach trees needed fertility. He said that if the manure was the only profit he received from his cows he would be satisfied. Since that time he has not only obtained plenty of manure for the orchards but he has made a profit from milk and from selling pure-bred stock. He likes the dairy business and although it is a sideline to his orchards he has found the cow profitable, and would sooner think of cutting down the fruit trees than selling off the herd of pure-bred cows.

A poultryman who is producing eggs at the present time finds that the cost of production is a serious problem. If he has room for cows he can cut down the cost of producing eggs by selling butter and cream and reserving all of the skim milk for the poultry. Sour milk is one of the best feeds for forcing broilers and this enables the poultryman to grow his flocks at a reduced expense. After a few years of experience the average poultryman who has sufficient acreage will never think of disposing of his dairy cattle. He will find that a few cows fit in perfectly with his type of farming.

The farmer owning dairy cows soon finds that they are valuable for cleaning up many crops which can seldom be sold profitably until they are turned into butter and milk. If corn is produced, the stalks are a valuable roughage for the cows. If a silo can be purchased, it furnishes insurance against soft corn crops. The dairy cow by consuming the silage produces butter and milk and enables the farmer to make some money from a corn crop that might have been almost without value, if used in any other way.

Most farms have some land more suited for pasture than for the intensive cultivation of crops. A few dairy cows will help to use that land to the best advantage. They increase the fertility of the land where they feed and a small herd can be managed without taking too much time from the remaining work of the farm.

In this day of uncertainty it hardly seems advisable to tell any farmer to go into the dairy business heavily without knowing everything concerning his individual problems. However it does pay to keep a few dairy cows on almost every farm large enough for such a venture. They work in well with all other kinds of farming and produce human food about as cheaply as any food can be produced. Some farmers are not using their milk to the best advantage when they only have a few cows. They can make more profit by selling cream and butter and using the skim milk for pigs and poultry. The writer believes that the large dairyman does not need an article of this kind but throughout the country there are many farmers raising poultry, garden truck and orchard crops, who could improve their income and their satisfaction in the farming business through the ownership of two, three

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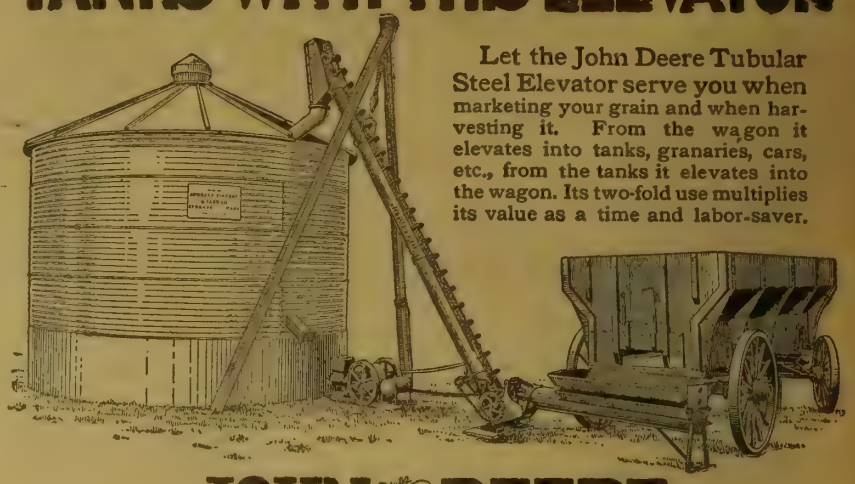

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or four well-bred dairy cows. For the reasons indicated in the preceding paragraph I believe that the dairy cow is the farmer's best friend and she fits in perfectly with most every type of agriculture.—R. G. K.

SILO AS INDISPENSABLE AS ANY OTHER PART OF FARM EQUIPMENT

Means More Livestock and Better Use of Feed.

In these times of high-priced feeds the silo is as indispensable to the farmer as any other piece of farm equipment. Many farmers would be better off if they had less other form equipment and a silo or two. Silos mean livestock, and livestock means more pasture, hay, corn, other grains, and farm manure.

Livestock means enriched soil, larger crops, more money for the farmer, and plenty of prosperity for everybody.

Livestock means more meat, milk, butter, cheese, and clothing for our soldiers. No nation can exist without an ample supply of animals.

More livestock brings up the question of producing and conserving feed. The passing of the range and the decrease in the fertility of our land have put us face to face with a serious problem, production can be increased only by the growing of legume plants and by feeding crops to animals and applying the manure to the soil. As fertility is increased, more food stuffs will be produced.

Silage should be considered by the farmer in the same light that the house-wife consider her canned fruit, a provision for future needs. The advantages of the silo are many, and if these were known to the farmer, more silos would be built. More of the corn crop can be saved by the use of the silo than is saved in the ordinary way. With the best methods, ordinarily about 33 per cent of the crop is lost, and under certain conditions, it may far exceed this amount, but with the silo, there is no loss except what is caused by fermentation. This is very small. Any method that will enable the farmer to get more out of his crops will increase the returns from his land. With the silo, our land will return one-third more than without it.—R. W. Clark.

AN ANCIENT PRODUCT

Butter Among the Oldest of Our Articles of Diet.

Butter is one of the oldest of all the articles of present diet. We learn from the Vedas written 2000 to 1400 B. C., that the Hindoos were interested in cattle raising, that they valued their cows according to their yield of butter, and that they used butter as food. The quailty of the article as then made is very uncertain. From the Greek derivation of the word, which means cow cheese, it may be inferred that it contained nearly as much casein as fat, and was perhaps, hardly entitled to the name of butter, as the article is now known.

The word butter (butyrum) comes, according to Charles Toubin, from the Sanscrit "but" (to beat) and "ura" (milk). This precious substance consists of an agglomeration of the fatty globules extracted from the milk where they are in the state of emulsion through the churning operations. Cow butter is the only really good one. It is oily and rich, of a delicate and special odor, and of a pure, sweet, pleasant taste, which reminds one of the nut tree. Butter is an article of food, the use of which goes back to the remotest antiquity. It is true that the Romans only used it as an external remedy (unguentum), but the Hindoos and Jews were surfeited with it, and the savages of the North seem from all times to have made it the basis of their foods. The oldest Iceland poem relates how the bard Skidi dreamt one night that he asked in marriage Friggia, the goddess of Love, and that the god Odieu gave him as a wedding present a case full of butter —Chicago Dairy Produce.

THE FELLOW WHO DOES NOT READ

Carlos Bolles.

I know a farmer who would not read a farm paper if he had it and probably wouldn't listen if anyone were to read one to him. But still he is one of the best farmers in the county and one of the best stockmen; furthermore, he can come as near getting a dollar without spending 101 cents for it as anyone you have ever seen. How does it happen? Well, he is a born stockman, a keen business man, and one who is called away from home a good deal. While he is on the road he doesn't go to sleep but has both his eyes and ears open. Away back in the recesses of his brain are stored the successes and failures of his neighbors and those he meets in the journeys to Denver or Kanas City.

Now this is a case where a farm paper is not really necessary for he gets a certain amount of information at first hand so to speak, but with others it is different. About all the contact we get with our fellow farmers is on Saturday afternoon and possibly on Sunday and then it is with the same old bunch and the same old experiences. To take a farm paper along the live order is to associate with ranchers all over the country and learn the why and how of their failures and successes. Incidentally also one yets the drift of the work being done for agriculure the country over —and this is no small item.

I believe it will pay and pay in big returns too to take more than one farm paper, provided they are dealing with problems similar to our own. I have never been able to figure out how a dry land farmer, for example, could take a corn belt paper to the exclusion of one dealing with local ideas and conditions. Yet a few are doing this very thing. True, we can do without a farm journal altogether; numberless farmers have tried the plan but too often they learn their lessons in the sad school of experience. That of course is one's privilege; but it's a long road to glory just the same and think of all the good things such a fellow is missing every week.

There is another side to this paper question. When one subscribes for a paper that act gives him the privilege of asking the editor all kinds of questions as come uppermost on the ranch. This in itself is worth a great deal— if taken advantage of. The editors have a vast fund of unpublished information on every conceivable subject—information that the average farmer can never acquire unless he asks for it. And one other thought: Many times just a single item in a farm paper will be worth the price of a year's subscription; and idea that can easily change for the better the plans for the whole year or even a lifetime and we an have so much to learn in this new country.

Then farmers should consider another phase of the question—that of reading for enjoyment and the enlightment of his children. With me the best part of the day is just before bedtime when I sit down for half an hour of leisure with my old friend, the farm paper and goodness knows I get a lot of comfort out of it. Of course, like many other things one can do without this necessity but it is well worth the price.

"Mike."

"Whwat?"

"I was just thinken. After we get out of the trenches an' back home again how nice an' peaceful that old boiler-factory will sound to us."

—Detroit Free Press.

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We guarantee every subscriber against loss through dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.
Advertising Rates. The advertising rates will be sent upon application.

Make hay while the sun shines, make good hay, take good care of it. Hay will bring a good price again this fall and winter.

As the number of hot dry days come, the danger from fires increase. Avoid any loss by being careful.

If you have some land from which you have taken the crop or some that you have not cropped this year, it is not to late to plant winter turnips.

A more careful and economic use of our irrigation water is being followed this year than ever before. We are learning the value of water and the proper time and amount to apply to our crops. Do a little studying for yourself and learn the results on your farm.

In passing a farm the other day on a train, a passenger remarked—"what has that man planted in his field." It was a grain field, but had so much mustard seed growing in it, that it looked like a yellow flower bed more than a field of grain. Did he clean his seed when he planted in the spring?

Care should be exercised during the harvest season that no accidents occur. Children and for that matter grown ups, like to play or loaf around the threshing machines and often get hurt by being in the way of the working men. Warn your help against such dangers as occur at harvest times.

Much is being said about waste and it is well to emphasize it, because there is a great amount of waste. There are however, some homes where little or no waste occurs. They have been saving and careful for years. It is a good thing to avoid the waste. We must all help this year so that we can win for freedom and democracy.

The next time you are out for a ride, driving through the fields, just notice how much land there is wasted, in the corners, along the fences. Land that is producing nothing but weeds, only a narrow strip but it will amount to a great deal, when you consider that it goes all around the farm. Several suggestions might be made about what to plant. You know your own conditions best, but do not allow so much waste land on your farm.

THE PROGRESSIVE FARMER

Farming is a business and to succeed we must follow modern methods.

The farmer who fails to take advantage of new and improved methods and insists that his father's methods are good enough for him must eventually give way to the farmer who takes advantage of such new ideas and new methods and new machinery as can be used to advantage in raising a better crop or getting a better price or in making his family more happy and contented on the farm.

HERE IS A HOT WEATHER HINT:

"Keep cool. You can't keep any cooler than the weather permits, but you can get a whole lot hotter than the day by doing a little additional fretting and fuming about how hot it is."

Any one ought to have the privilege of ducking the first fellow who says "how hot it is." Can somebody suggest some method of doing away with these hot weather pests. Wear your clothes loose and keep yourself clean and you will be surprised how much easier you stand the heat.

SHEEP BECOMING POPULAR

The high wool price of wool and lambs has done a great deal to make the sheep more popular. There is quite a change of sentiment in favor of keeping a few sheep on the farm. Better returns can be made for keeping them and this will greatly help to make sheep more popular. It is with the sheep business as with many or all others, success comes in knowing how. If you have not raised any sheep, start out in a small way and learn how as you grow into the business. Sheep can be fed for a lower cost on the farm than any other livestock, because they will live on the waste about the farm.

BETTER CARE OF OUR HAY

Judging from the way some of our farmers handle their hay they have not yet learned the value of it. Stacks are poorly put up and livestock allowed to tramp it under foot. Such poor methods might have been over looked when the price was $6 to $8, but, with hay selling for $15 to $25 dollars it seems like poor farming to allow so much hay to go to waste. When visiting a farm the other day where there was a good hay barn it was surprising how poorly the hay was stacked it it. Before the winter is over much of it will spoil because of the way it was put in the barn. The outlook now, is that hay will bring a good price this next winter so again we suggest that better care be taken of our hay crop.

DO NOT LET WEEDS GO TO SEED.

It is very important to keep the weeds down and not allow them to grow among a cultivated crop, it is just as important to see that weeds do not go to seed on the ditch banks in the fence corners and along the roads or allies. A few weeds will produce enough seed in these places to seed the farm again. The ordinary fence line and ledge row is a regular weed and insect-breeding harbor, and it takes a great deal of work to prevent weeds from growing there. Experience has shown that to cut the weeds on banks and roads just before they ripen or seed is not enough, they must be cut two or three times or they will produce enough to reseed the same ground and some besides. Sheep are a great help in keeping down these weeds, they will eat them down close and it is one way to turn weeds into a profit.

VALUE OF WEEDS.

It is said that we learned the value of cultivation by fighting weeds. When we first learned that weeds were injurious to crops, we pulled them out and dug them up and thus gave the crops a chance to grow. It was here that we "stumbled" on to the fact that loosing up the ground benefited the growing plants, and cultivation is the evolution. Be that as it may it takes weeds and an abundance of them to influence some farmers to cultivate their crops. You can not raise a good crop of weeds and expect to harvest a good crop of anything else from the same land. I believe you will agree with me that many a time the growing crops have received an extra cultivation because of the "good" growth of weeds. There is some value in weeds if they have learned us to cultivate our crops.

HARVESTING TIME

Already they have started to harvest our wheat crop. There never was a time when more care should be taken, to avoid waste in harvesting, than at the present time. All farm products are costing so much that we ought to be very careful and see none is wasted after spending time and money to produce them.

Are you ready for harvesting, is your harvesting machinery in the best of running order, have you secured all needed repairs, if not, do not delay a moment for you may not be able to get them as quickly as usual.

If you are planning to market your crops at once, look ahead a little and find out about the details necessary to do it.

Harvest time is here and most of us know what it means in the way of work and planning.

FARMERS EXCURSIONS

One of the best methods of learning how, is to see the way the other fellow does it. This is true with farming and the well planned excursion of farmers going from one farm to another is time well spent. Farmers this year are working harder and putting in longer hours than ever before and a few days of rest spent in this way will be profitable to ever one who can go.

Last year on one of the trips a farmer said he had learned one thing that would many times over pay for the expense and time spent.

It is not the best policy to have too many on an excursion unless they can be sub-divided during the day while visiting the places of interest. The first ones on the farm have been told the story, or seen the livestock and are ready to move on before the last of a long number of autos arrive.

A little more time should be spent at each place, go more into details and learn some one thing at a time and learn it well. The suggestion has been made that those interested in livestock go together, this might be alright, often the man who has done no feeding will see the value of it to his farm and the result of a visit of this kind, will convert him to it. This is why different kinds of farms should be visited. Now is the time to plan your farmer excursions.

OUR RESPONSE ON SUGAR PRODUCTION

Even before the beginning of the year the Utah Farmer had information from reliable sources indicating the urgent need for increased production of sugar. The Utah Farmer extended that information to the beet growers of the intermountain north west and persistently carried announcements in almost every issue regarding the importance of a generous response by the beet growers.

We want to express our appreciation to the beet growers for the whole hearted approval and response of the campaign which the government carried on using the Utah Farmer.

The need of such a vigorious campaign as was conducted for increased acreage is now apparent.

Again the government is asking that we make the acreage planted produce a maximum crop. In doing this the farmer is not only answering an appeal of the government but he is going to make a better profit. Better care means larger tonnage which at one half cent per pound soon yields a handsome total in dollars per acre return.

The season is now in the last half of the growing period, let us put forth every effort to finish well.

Sugar is one of the most needed war requirements.

Utah's Experimenters In Agriculture

MELVIN CLARENCE MERRILL.

Dr. M. C. Merrill's wide preparation makes him just the man needed to solve Utah's many horticultural problems. He is Professor of Horticulture in the Utah Agricultural College and Horticulturist for the Experiment Station.

Horticulture in Utah has had many ups and down of uncertainty and even today there is more or less depression in regard to certain of its aspects. Yet in all the world there are few places better adapted to the production of horticultural crops than are the fertile valleys of Utah. An urgent need of the hour is the stabilizing of our horticulture and the adjusting of our general farm crops and practices to the best and most profitable system of agriculture.

On every hand are the sad results of past mistakes. Everywhere are evidences of too much specialization on our farms. Fortunes were to be made in a day in this line or that line and in the excitement of the speculative impulse we failed to keep in view as fully as we should the proper perspective and the harmonious balance between our several phases of farming. In the last analysis the farmer is in the business for the profit and pleasure there is in it. If there is no profit, whence is to come the pleasure?

How can we get on a stable and profitable basis in our Utah horticulture! What factors and agencies can we bring to our assistance; What adjustments must be made between horticulture and general agriculture in order to derive the best results? How can Nature's wonderful horticultural resources at our very door be best used for our ultimate good? These problems are a man's job. Such is the task ahead of Dr. Merrill. That he is able to guide Utah to well developed horticulture, no one who knows doubts.

At Richmond, Utah, thirty-four years ago last April Melvin entered the world. He grew sturdy both in body and mind. His boyhood was spent on the Fountain Farm (now Ballamoor Farm) near Richmond. After completing the public school work at Richmond he determined to go to college. Yet the fall plowing must first be done and it was necessary for him to help do it. Animated by his love of school work and his burning ambition to go to college, Melvin desired to finish the fall work in the shortest possible time. To accomplish this, he put in long, hard days and many strenuous night shifts. Horses were abundant, and several times he plowed all night by the combined light of the moon and a lantern.

Finally the plowing and fall work were done and Melvin "hitched up the old gray mare" and came to Logan. Think you that the nightly plowing took the glint from his eye? Not so, for good metal rings clearest when struck hardest.

Young Merrill studied as he worked. His high-school work he took at the B. Y. C. This done, he at once entered college at the Utah Agricultural College in the fall of 1909. Four years of honest study (for which there is no substitute, there being none "just as good") put him through college with a B. S. degree in Horticulture. In 1905-06 he was natural science teacher and principal at the Springville High School. As the result of a Civil Service examination he was appointed to the position of Agricultural Inspector for the Bureau of Agriculture in the Phillippine Islands in 1906. After two years he was promoted to the superintendency of one of the Phillippine Agricultural Experiment Stations, which position he filled with credit. After two more years, he decided to study and returned to the United States even tho he was offered a considerable promotion to remain.

No one should get the idea that young Merrill simply went to and returned from the Philippines. He so managed his trip that he was able to visit and get first-hand agricultural information in Hawaii, Japan, China, the Phillippines, Straits Settlements, Ceylon, Arabia, Egypt, Palestine, Italy, France, Spain, Germany, Austria, Switzerland, Belgium, Holland, England, Scotland, Ireland, Wales, Nova Scotia, and Canada. Incidently, he had gone around the earth and satisfied a great desire to travel. Since then he has been in thirty-two states of the American Union, in the end to return to Utah and bring to her his widely gathered experience.

He studied at Cornell University in 1910-11. Here he saw what every other young man with his eyes open sees, namely, that it is a "consummation devoutly to be wished" to study in several of the great universities, because each has something to contribute which cannot be had at the others. That same spirit which made him plow all night, gave him the courage to do as he saw would be for the best and he therefore studied at several universities. Accordingly, he studied botany and chemistry at the University of Chicago from the spring of 1911 to the fall of 1912 when he took his M. S. degree in botany. In 1912-13 he studied chemistry and botany at Harvard taking an A. M. from there in Chemistry. His purpose in devoting himself to these subjects was that he might be the better grounded in the fundamental knowledge underlying agricultural and horticultural science. He then went to the Missouri Botanical Gardens to complete his work under B. M. Duggar who in the meantime had gone there from Cornell. After two years as research assistant and graduate student he received his doctor's degree from Washington University with which the Botanical Gardens are connected. This was in June, 1915. He then became Director of the Department of Agriculture at the Idaho Technical Institute at Pocatello. In July, 1917, he came to Utah as Station Horticulturist and Professor of Horticulture in the college. It is well that his training is wide and various, for Utah's problems are many and varied. These he has set out to solve with that same thoroughness and unstinted effort that was so characteristic of his other work.

Just now he is working on these problems:

(1) How best to utilize the fruit and vegetable products of the State.

(2) An extensive experiment in drying and evaporating fruit and vegetables is being carried on, aiding the growing canning industry of the State by attacking its many problems. Just last winter he ran a four-week course at the college for the canning companies' field men.

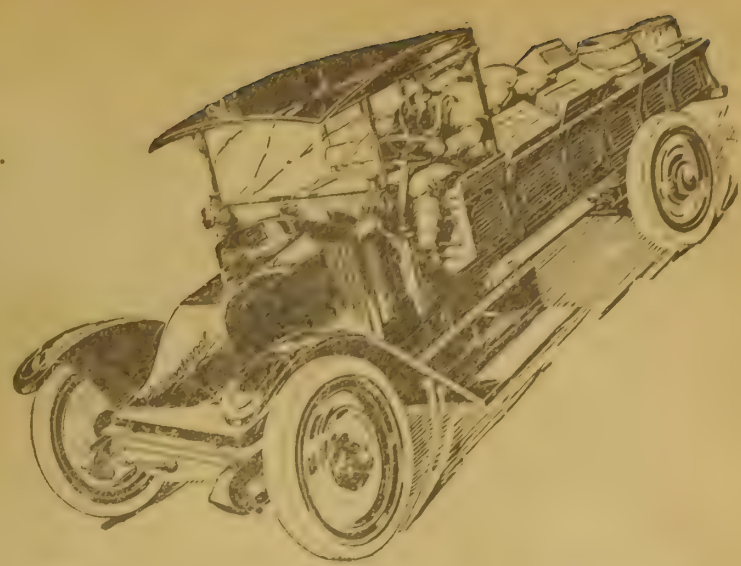
(3) He is also engaged in a horticultural survey of the State in order to find out just what the condition is. This is necessary to wise experimental work.

(4) An important piece of experimental work which he is now undertaking is the improvement of our tomato and pea crops for the canners by selection and breeding. On his experimental grounds he now has set out ninety-four varieties of tomatoes. These were grown under the proper conditions in the horticultural hotbeds and coldframes, and as a consequence the resulting plants were some of the thriftiest and most vigorous ever produced in the State. Tomato growers are losing money every year unless they grow their plants in the best possible way.

Once the solution of these groups of problems is well under way, it will mean the enrichment of the State by thousands of dollars. This will also open a vast field, hitherto unexplored in the mountain states. But the plant-breeding great possibilities, it is nevertheless slow and expensive.

Dr. Merrill writes freely on both popular and scientific subjects. He has published three papers in the Annals of the Missouri Botanical Gardens, besides having written widely in local journals on agricultural [illegible] and [illegible] subjects. He is not without honor, belonging as he does to the honor societies of Sigma Xi and Gamma Sigma Delta, whose membership is made up of men who have [illegible] distinction in scientific and agricultural work, to the American Phytopathological Society, the Botanical Society of America, the American Association for the Advancement of Science, and the Society for Horticultural Science.

In regard to Dr. Merrill there are two regrets: first, that he has come to us so recently; and second, that we can give him so little with which to work.



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KEEP THE NUTS TIGHT

(Continued from page 3)

nut he saw loose on the tractor he was operating. It was in harvest time, the rush season.

For want of a nut the bolt was lost.
For want of a bolt the tractor broke down.
For want of the tractor the crop was lost.
And for want of the crop, the mortgage was foreclosed and the farm was lost.

So "keep the nuts tight"—all of them, everywhere.

Send in your subscription TODAY.

HOME

HELPS IN RECIPE MAKING

From Utah Agricultural College Circular by Gretrude McCheyne and Hortense White.

Stock—Stock is the basis for all soups, except milk or cream soups, to which it is sometimes added. From a pint to a quart of cold salted water is used to each pound of meat and bone, both of which should be in small pieces. Let stand one hour or more, strain and cool quickly. Remove the hardened fat before using. About a cup of mixed vegetables—carrot, onion, parsley, celery, etc.,—may be added during the last hour. Mixed herbs and spices, as bayleaf, blade of mace, two or three cloves and pepper corns, may be tied in cheese cloth and removed from the liquor when sufficient flavor has been extracted.

....Bouillon—usually made from beef with little bone and no vegetables. Brown Stock—some of the meat and a part of the vegetables browned in hot fat or marrow. White Stock—made from chicken, veal, or fish; no flavor ing which gives color added. Macaroni, Vermicelli, Noodle, Rice Barley Soup and the like—cook about one-fourth cup of dry material until tender, and add a quart of stock.

Thickening.

Sauces—Methods of mixing: (1) Melt butter (or other fat) in saucepan, stir in dry flour, cook and stir until frothy all over, then add liquid slowly, hot or cold, while stirring; cook again until thick, stirring until smooth. (2) Rub butter and flour together and stir into the warm liquid in a double boiler, then cook and stir until thick and into the remainder, which should be hot, and cook in double boiler until smooth. Then add butter and seasoning.

Thin Sauce.....One level tablespoon fat, one tablespoon flour and one cup liquid, one-fourth teaspoon salt, few grains pepper (white).

Suitable for creamed potatoes, macaroni, toast, etc.

Medium Sauce: Two tablespoons fat, two tablespoons flour and one cup of liquid. Seasoning. For general use with fish and vegetables.

Thick Sauce:. Two to four tablespoons of fat, and three or four of flour for each cup of liquid, either milk or milk and stock. This is the basis of souffles and croquettes.

White Sauce may be varied by different flavors and garnishes, such as capers, celery, mushrooms, oysters, lobsters, etc., etc.

Tomato: for the liquid in sauce may be seasoned with onion, herbs, and spices, by cooking them with it for a short time before straining.

Spanish Sauce is tomato sauce with the addition of onion and peppers.

Dutch or Hollandaise Sauce: ..To one cup white or milk sauce add one of two beaten egg yolks and cook in double boiler like custard. Flavor with one tablespoon lemon juice.

Brown Sauce for Roast or Pan Broiled Meats: After placing the meat on the platters, drain out any fat in the pan and add some water to utilize the browned juice and flour.

For each cup of gravy put two tablespoons of the fat in a saucepan and brown two tablespoons of flour in it; then add one cup of the water from the pan. Cook like white sauce. Season as desired with salt and pepper. Or melt and brown two tablespoons of fat in a saucepan; add two or three tablespoons of flour and continue the browning. When coffee color, add one cup water or stock or milk.

Cream Soups.—Cook the vegetables till soft and rub through a strainer, using all or a part of the water in which the vegetables is cooked, except with potatoes. Combine with an equal quantity of white sauce or white stock or milk or cream. Season. If too thick add hot milk. Beaten egg may be added just before serving if too thin.

Asparagus, carrots, cauliflower, celery, corn, cucumbers, lettuce, mushrooms, onions, spinach, summer squash, turnips, water cress, may be used.

Cream of Tomato Soup: On account of the combination of milk and and acid, a different method is necessary for this soup. Heat tomato juice and add soda, (⅛ t. to pint juice) when ready to combine. Pour it slowly into twice the amount of thin hot white sauce, stirring continually. Add salt. Various other seasoning may be added as onion juice, bay leaf, etc. Do not allow to cook after mixing.

Cream of Peas, Bean, Lentil, Potato, and other thick soup have half quantity or less of of white sauce added to keep the material from settling.

Cream of chicken, fish, etc., made of stock from bone, skin and other inedible portions combined with about equal quantities of hot white sauce seasoned in various ways.

Original Recipes From Women's Farm Bureau of Marriott, Weber County.

Old Fashioned Molasses Ginger Cake.

1 cup lard warmed a little, 1 cup molasses and a half cup sugar, 3 eggs, cup and a half of butter milk, 1 level teaspoon soda and one of baking powder, 1 heaping teapoonful of ginger, a little salt and flour to make a stiff batter.

Spiced Loaf.

1 cup molasses, ½ cup sugar 1 teaspoonful soda, ¼ teaspoonful allspice, 2 eggs, ½ cup milk and butter size of an egg.

Thicken with whole wheat flour to a stiff batter. Bake in slow oven for 40 minutes.

Brown Beans Without Meat.

1 qt. of beans; boil half hour with half t. soda. Pour water off and rinse. Cover with cold water, add ½ t. salt and 3 small chili peppers. When done, let them stand over night. Put in a baking pan, then add:

3 T. molasses 1 T. brown sugar, 3 T. drippings or butter, ½ cup good catsup and bake until brown.

Prune Loaf.

2½ c. flour, ¾ c. brown sugar, 4 t. baking powder, ½ t. salt, ½ c. prune juice, ¾ c. sweet milk.

Soak prunes 12 hours, stone 12 prunes, put into dry flour. Tablespoonful cottolene or butter, mix altogether, let stand 20 minutes, bake one hour.

War Fruit Cake.

2 c. sugar, 2 c. water, 4 T. lard, 1 c.raisins, 1 t. salt, 1 t. ground cinnamon, 1 t. ground cloves.

Boil raisins and water one half hour. Remove from stove and add lard and spices. When cold add three cups of flour, and two tablespoons of soda, dissolve in one teaspoon of hot water. Bake slow 1¼ hours.

Dried Apple Pie.

(For 2 Pies)

½ t. soda, 3 c. flour, pinch salt, 1. c. buttermilk, filling of seasoned dried apples, ½ t. baking powder, 1 T. lard or cream, pinch nutmeg.

Raisin Oatmeal Cookies.

1 c. brown sugar, ¾ c. shortening, beat to a cream, add 2 well beaten eggs, ½ t. vanilla, ½ cup hot water, ½ t. salt, ½ t. soda, dissolved in hot water 2 c. sifted flour, 2 c. oatmeal, ½ pound seedless raisins (chopped). Drop on floured bottoms of inverted pans.

Cottage Cheese.

1 gallon skim milk. To this quantity add 1 cup of clabber milk and let stand at room temperature 12-15 hours, the milk will then be clabber. By doing this it will not be strong as it sometimes is. Pour into the upper part of a double boiler and set in water below the boiling point. Heat until the clabber is raised 100 degree, or until it is warm to the touch and has started to whey off. Set aside for a few minutes, then later drain through a cheese cloth. If drained thoroughly, will keep several days. By this method, the cottage cheese will not be kept too long and therefore will not be too hard. It may be seasoned in several ways, ordinarily salt, pepper and cream is added.

Making Syrup From Beets.

(Tested Recipe)

1 pint of syrup can be made from 4 large beets.

Clean beets thoroughly, using water and vegetable brush.

Take beets through food grinder

Place pulp in kettle, cover with boiling water and boil. (Avoid an excess of water as it will increase the necessary amount of evaporation). Draw water off. Strain through several thickness of cheese cloth. (No pressing necessary).

Pulp is fine for chickens, hogs other livestock.

Place juice in broad kettle and boil slowly for several hours, or until liquid is consistency of syrup.

Care not to burn syrup.

Remove scum as it rises, taking care in wasting as little as possible.

Bottle while hot and seal or cork tightly.

This syrup is excellent for use in bottling fruit. Fruit may be bottled wtih no sugar and syrup added as the fruit is used.

Syrup may be used in such foods as those in which molasses is used as buckwheat cakes, and in making dark colored cake, of making various homemade candies. If the evaporation is carried far enough and the syrup is allowed to stand, a dark sugar will settle out. The sugar will be found very satisfactory for home use in cases where refined sugar is not necessary, such as in making pies or dark colored cakes.

Tested Potato Starch Recipe.

1. Stretch clean white cloth tightly over top of clean tub, tie firmly with rope and strong cord.
2. Wash the potatoes thorough with vegetables brush.
3. Remove deep eye and blemishes of skin.
4. Take potatoes through food grinder using fine knife.
5. Place pulp on the cloth, and
6. Pour large quantity of clean fresh water through potato pulp until all starch is washed out. Let stand several hours; pour water off starch. Renew water and repeat several times until water appears quite clear. If any sediment still remains on starch lightly scrape.

THE AMERICAN LARDER

Wheat.

Every aspect of the wheat situation, both present and prospective, intensifies the need for the greatest possible limitation in American consumption. If the present restrictions should be in the slightest degree relaxed it would result in serious want for the people of Europe before the new crop can reach the market. Home consumption of wheat flour must be cut to one-third of normal, and those who can do so are urged to give up wheat entirely. This will be possible for most people because many substitutes are to be had.

Meat

The demand for beef for our army, the armies of the Allies and their civil population for this summer is beyond our present supply. On the other hand we have increased the supply of pork and an economical expansion in its use is advisable.

Perishables.

Every meal in rural communities

DRINK BECCO
BETTER THAN BEER

For entertaining friends---for the family---with meals or between meals---any time! There's no beverage that quite "hits the spot" as does BECCO---the true, pure food beverage.

If your dealer hasn't BECCO---order direct from

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ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

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might well be made a garden party. The use of home-grown garden and orchard products will liberate the more concentrated and staple foods for people living in industrial centers and for the Allies and soldiers.

It is not patriotic at this time to use canned goods when fresh products are available. Immense stocks of commercial canned goods must be reserved for the Army, Navy and the Allies. Every home can help build up this surplus by eating fresh foods and canning all they need for themselves.

Dairy Products.

Milk, cream and butter are now abundant and represent on many farms "perishables" not marketed. These products, with cheese, may well be used to make up for the shortage of beef and supply the necessary protein and fat to balance a diet of fresh vegetables.

800 FOOD LAW PUNISHMENTS

More than 800 penalties for violation of rules and regulations governing licensed dealers in foodstuffs have been imposed during the past ten months by the Food Administration. About 150 companies and individuals have been ordered to quit business in licensed commodities for a limited or unlimited period, and over 500 have voluntarily made a money payment, usually to the Red Cross, or have temporarily obstained from doing business, rather than risk calling down more drastic penalties upon their heads.

A vast number of other cases have been disposed of by Federal Food Administrators in the various states and territories under the authority of, but without specific appeal to, headquarters at Washington. In a large number of other cases the desired compliance has been secured without penalty. More than 2,500 cases arising out of the shipment of foods and feeds, many of them perishable, have been disposed of.

Penalties inflicted, from the passage of the Food Control Act, August 10, 1917, to June 1, 1918, may be summarized as follows:

Unlimited revocations of license, requiring the licensee to obstain from business in all, or in specified, licensed commodities until further notice, 65, of which 56 are outstanding.

Limited revocations, requiring licensee to abstain from business in all, or in specified, licensed commodities for a definite period, 62, of which 19 are outstanding.

Unlimited unfair orders, directing licensees until further notice not to sell any, or specified, licensed commodities to unlicensed dealers who have engaged in unfair or wasteful practices, 8, of which 3 are outstanding.

Limited unfair orders, or the same effect as those last mentioned, excepting that the prohibition is for a limited period only, 12, of which 9 are outstanding.

Refunds and contributions, consisting of many payments voluntarily made in place of more drastic formal penalties of the above nature, 131.

Temporary suspensions and minor penalties, voluntarily accepted in place of more drastic formal penalties of the above nature, about 375.

Requisitions and forced sales, consisting of food commodities disposed of without resort to dratic formal penalties for hoarding, 24.

Stop orders against the issuance of licenses, either pending investigation of alleged violations or undue delay in applying for a license, or as a minor and temporary penalty for offenses committed before a license is issued, of which 103 are outstanding.

FRUIT ON EVERY FARM

Fruit is one of the products of the farm which is enjoyed by everyone, yet is not found on as many farm homes as it might be. Farming is rapidly coming to be a highly specialized or departmentalized business. Certain farmers confine themselves to the production of milk, others to grain crops, others to beef cattle, others to vegetables, fruit, flowers, etc., and the number who are specializing is not on the decline.

While specializing in certain crops has many advantages, yet it has its limitations, and frequently deprives the farm home of many of the little luxuries it might have, if the operations were carried on in a more diversified way. A generation ago every farm home had its orchard in which could be found three or more kinds of apples, a few kinds of peaches, some plums, pears and berries. But with the neglect which these old home orchards received, and the prevalence of insects and diseases, they have passed to cord wood and the production of fruit left to the specialist.

This is unfortunate. Every farm home today should have its orchard just as in the days of our grandparents, and have even better fruit. But there is one very serious obstacle in the way of every farmer producing his own fruit; it is as serious as dragging the roads, "the hardest part is getting at it." The hardest part of growing fruit, for the general farmer, is that of getting at it. The fruit must be sprayed. No intelligent person will deny that. But the fruit must be sprayed at a definite time, and sometimes that time is not convenient for any but the fruit specialist.

However, there is a way around the difficulty, and that is through co-operation. Every farm can have its orchard, and if each neighborhood of a half dozen farms or more would co-operate in the matter of spraying, so that the work will become a regular worth-while job, and the spraying delegated to one man or one crew of men, each orchard could be sprayed thoroughly and on time.

By so doing the farm home could be supplied with an abundance of fruit for every day in the year and the diet of the family be improved by the addition of the delicacies which fruit is capable of supplying. But in the small farm orchard, there is usually more fruit than the family can consume, so that there is a little surplus. Here again, co-operation comes to the rescue, and enables the producer to dispose of it easily and advantageously. Orchards are capable of producing a greater net income than almost any other farm crop, but they will do so only when they receive the care they need. Everyone likes fruit and every farm home should be better supplied with an abundance of it.

180 KINDS OF FOOD IN 210,000 MEALS ON ONE VOYAGE OF BIG U. S. TRANSPORT IS HOW UNCLE SAM FEEDS HIS MEN AT SEA.

Thousands upon thousands of soldiers, hungry as wolves (at times) expeditiously served and without the slightest confusion story told by the Ship's Reporter in the vessel's own daily paper. The committee on Public Information issues the following:

Two hundred and ten thousand meals were served on a United States transport on a recent voyage. One hundred and eighty varieties of food were used in making up the menus, and this ship carried 750,000 pounds —3,750 tons—of food.

An account of how the soldiers are fed is given in the ship's daily newspaper. The vessel has its own journal, printed abroad, containing the news of the day received by wireless through the "Navy Press," which keeps the men on the seas in touch with the events of the outside world. The ship's reporter, describing how "the almost unending lines of khaki file by for their meals," says:

Thousands Fed in Short Time

"In spaces no larger than a private dining room at Sherry's they come by, thousands upon thousands, and yet in such perfect order that in less than 80 minutes the last man has been served.

"The khaki line seems limitless. It must seem longer than that to those in the rear. But the coffee in the big pots remains hot, the stew continues to steam, and in less than seven seconds each man has an equipment replete with food. It only takes two details to accomplish this miracle—perfect system and vast quantities of things that one can eat. That's about all it takes.

"Flour, potatoes, and beef are the Big Three that rule the realm below, yet there are 159,000 pounds of fresh vegetables waiting to be absorbed, providing the sea doesn't get too rough.

Arrange Their Own Menus.

"After receiving their food the men arrange their own menus. For example, one takes gravy on his rice and jam on his bread. The next takes gravy on his bread and jam on his rice, using the combination to produce a crimson-tinted mixture of startling effect. American ingenuity is hard to stop.

"Outside of providing 210,000 meals at sea the mess officer of the ship has very little to do. Very little.

"He is only called upon to provide, by the regulations, 180 different varieties of food. That's all. Ever try to order 180 different things to eat? Yet this is the authentic list.

Over 7,000 Loaves Baked in a Day.

"The food needed to feed several thousand men at sea ranges beyond the gluton's dream. You get the answer in the ship down below the water line where 7,290 loaves of bread have been baked in one day, and eaten,, and where you stumble over every variety from 60,000 pounds of beef to 132,000 eggs, or a compartment of brick ice cream in a 10 degree above zero vault.

"And if this doesn't suit you, you can bump along into 59,324 pounds of potatoes, 7,100 pounds of ham and bacon, 7,800 pounds of butter, 9,200 pounds of sugar, and 61,500 pounds of flour.

"If you can't get a meal out of this you can still fall back on 4,600 pounds of sausage, 3,400 pounds of sauerkraut, 26,000 pounds of apples, 19,800 pounds of oranges, and 4,200 pounds of onions.

"And this leaves out 1,600 pounds of jam and 9,400 pounds of lima and navy beans.

Immense Appetites—at Times.

"The sea brings on an appetite—at times. So does wearing khaki. The combination develops a cyclone. Yet this ship not only yields many thousands of meals a day, but will deposit 100,000 pounds of food at its next port. No wonder Mr. Hoover wanted all food conserved. He must have thought of these men in khaki waiting their turn, one thousand upon another thousand through a space 60 by 40 feet, each man armed with a mess equipment in either fist, ready to go over the top and break the bread line. Breaking the bread line is the proper phrase. On this trip alone they will consume 75,000 loaves and use up 2,000 loaves more for sandwiches when they leave the ship.

All Done Systematically.

"There is no vast space for all this—but perfect organization, four clean kitchens, and a mess force of 138 men turn the trick without a tangle. From potatoes to pies, from ice cream to sauerkraut, from grapefruit to onions, from jam to sardines, the allotment is drawn from its shadowed hiding place below where the removal of several pounds hardly leaves a dent. And handling 180 varieties of food in quantities that range from 800 pounds to 79 tons speaks almost for itself.

"Just how many calories 750,000 pounds of food contain you can figure for yourself on the next rainy afternoon."

Troy Trails

Every Farmer and every Ranchman should own a trailer. He will find it very serviceable practically during the entire year. If he does not own a truck, he can use a light trailer behind his automobile to do light hauling such as hauling fruit, vegetables, poultry, livestock and all farm products. The trailer is an essential piece of machinery and it will show wonderful economy in your hauling problems. Full particulars regarding trailers of all kinds can be had by writing to

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The Farm Flock of Sheep

(Continued from page 3)

horses but eight-two, and cattle but fifty-six and the farms in that state that do not need to be cleaned of weeds are very few. Sheep not only destroy these weeds, but at the same time convert them into sweet, delicious meat. There are few farms that have not some odd corners, old feed lots, or waste land that is growing to weeds and brush, that might by the use of sheep be returning a handsome profit.

An old feed lot sown to rape early in the season will prove a profitable investment; thin patches around the edges, sown to rape will furnish feed for many lambs during the fall; and after the binders and headers there are always more or less shattered heads that might be turned into mutton if sheep were given an opportunity to get this grain.

To the man of restricted means there is no class of live stock that offers greater opportunities for investment. It is estimated that ten head of sheep can be pastured upon the same amount of land and will require about the amount of feed the year round that one cow will consume, and ten sheep can be bought for about the same amount of money that a cow can. Pure-bred sheep are worth, when compared with grades, say about in the same proportion that a pure-bred cow is worth when compared with a grade. So it matters not whether the comparison is applied to pure-bred or grade stock. In the one case the owner has all his money tied up in one animal; in the other case he has it in ten, and there is no more danger of losing a sheep than there is of losing a cow, if proper care is given them.

And again, to the man of restricted means, money in a flock of sheep will give much quicker returns and returns much oftener than the same amount of money invested in cattle. Suppose one should invest in a flock of breeding sheep in the fall of the year. His first returns would be in March or April, when the wool would be ready for market. If the flock had been bred for early lambs, a little later the earliest and best of the lambs would be ready for market at a time when the market would be ready for them, and at very fancy prices. Should it be desirable to dispose of part of the flock soon after the lambs are weaned, if the ewes have been well cared for, they will be ready for market, while with a cow it would take at least two years to get much of a return on the face of the investment. It is a poor sheep that will not annually shear enough wool to pay for its keep for the entire year.

Expensive fencing is not necessary to keep sheep where they are wanted. A good woven-wire fence, of course, is best, but five good barbed wires properly placed will keep them at home.

Often the objection is made that sheep cannot be pastured with other livestock. This is not true so long as there is plenty of grass in the pature. Horses, cattle and hogs will thrive just as well if there is a flock of sheep among them as if the sheep were in separate fields. The only thing to be guarded against is not to have old sows with ewes during the lambing period.

There are many who believe that sheep require a great deal of care and much special attention. This, however, is not correct, as we have no domestic animals that are more easily handled or that require less care for the greater part of the year than the sheep. For the successful handling of a flock there will be a period during the lambing season when close attention will be required, but during the remainder of the year very little time need be spent with them. Salt should be kept in the sheep corral at all times. It should be placed where it will be free from dirt and off the ground so they will not be stepping on it. A little sulphur mixed with the salt is considered by many a good preventive of disease.

The ram has as much influence upon the flock as the entire ewe flock bred to him, which fact gives rise to the old saying, "The ram is half the flock." It will thus be seen that the selection of the ram is of prime importance. Improvement in breeding can be brought about in a flock at less expense by the use of a good ram than in any other way. A good ram is a valuable investment, and the few extra dollars in cost over the price of a mediocre one multiply themselves in returns on the lamb crop. The wise selection of a single ram has, in many cases, made a flock famous. I am sure it will doubly pay any farmer to invest in a small bunch of breeding ewes and enjoy the large returns yielded by them.

THRESHERMEN MUST REPORT ON WHEAT

Under the authority of the Food Control Act, the Bureau of Markets of the United States Department of Agriculture is to require from all threshermen in the country periodical reports on the number of bushels of wheat threshed by them and the acreage from which the grain was produced. A list of threshermen is being compiled from all available sources by the Bureau of Crop Estimates, which is co-operating in the undertaking, and the Bureau of Markets is having printed a supply of blank forms for threshing reports, together with a pocket memorandum book for daily records. Reports will begin with the opening in June of the winter-wheat harvesting season. The county agents will aid in distributing the schedules and memorandum books and will also assist in asembling the reults.

The results are to be made available for the use of the United States Food Administration, the Federal Trade Commission and other branches of the Government. They are expected to provide a complete and accurate check on the advance wheat figures of the Bureau of Crop Estimates in the same way that the cotton-ginning reports, compiled by the Bureau of the Census, check the cotton estimates.

REVIVING OLD TREES

J. S. Underwood.

It is only necessary to look around during the summer months in settled fruit sections, to ascertain what a vast quantity of gnarled and practically worthless fruit trees there are in existence. Whole orchards may frequently be seen in which many of the trees are badly infested by insects pests or fungus disease. These coupled with starved soil have succeeded in bringing what ought to be valuable trees to premature old age. Unfortunately, during the winter season, the best time for remedying this undesirable state of affairs, the trouble is not nearly so apparent. Too oftimes a careless owner remembers it only when it is brought vividly home to him during the busy days of summer.

Where trees are actually old and entirely worn out, it is, of course, impossible to improve them to any extent. In the majority of orchards which have been negelcted, however, the trees have only reached that age when they ought, with proper treatment, to be bearing crops of high-class fruit.

The winter is the best time of the year to undertake this work. Both roots and branches will need attention and the latter should be dealt with first. The removal of the dead wood must be the primary work. In cutting out dead branches cut down to live wood, otherwise the wound will not be able to heal properly. If this cannot be done, the branch should be cut as close to the limb or trunk as possible. After all dead wood has been removed, very badly cankered branches should next be attended to. Where the disease has nearly circled a branch, it is useless to try and save it, beyond the point where the disease is present. If possible, without unduly thinning the tree, any badly cankered branches should be cut right out at the base. Small canker wounds should be pared out clean, right down to the live tissue, with a sharp knife, the wound sterilized with a weak solution of carbolic acid—one part of the acid to 100 parts of water—and finally painted with coal tar. This same treatment should also be given to wounds caused by the removal of branches.

It frequently happens that very little if any more thinning is needed. Sometimes it is necessary to remove branches that may be badly crossed or interwoven one with another.

Having given the branches a thorough overhauling, supplement the good work with equally good work on the roots. In many orchards the grass has been allowed to grow over the roots and right up to the trunk of the trees. Although this is detrimental to them in all stages of their growth, its bad effects are perhaps not so manifest when the trees are well past their youth. Their starved appearance and small, badly shaped fruit are usually attributed to other causes rather than the ill effects of the grass growing immediately over the roots. The turf should be skimmed off several inches and the surface of the soil beneath very gently forked over to a depth of a few inches. Even where grass is not present this light working is beneficial.

After the surface has been broken up in this way as far from the trunk of the tree as the branches extend a dressing of partially decayed manure, several inches thick, should be spread over the whole. Anything of manurial value, if applied during the winter months in a moderately thin coating, is almost certain to do good. Clearings from ponds and ditches, particularly on rather light soils, have given excellent results.

Another method of manuring old trees which has answered very well, is to make a number of large holes with a crowbar at intervals of, roughly estimating, 18 inches all over the area occupied by the roots. These holes were kept well filled with strong liquid manure, principally drainings from the stables and farm yard, all the winter. This is a rather crude, but useful, method of disposing of such liquid, and well repays the trouble entailed. Trees, like every other living thing, must be properly fed and cared for if they are expected to remain in a healthy and profitable producing condition.

THE THRASHER CLASSIC

Whenever a motor classic is to be run, weeks are spent in grooming the cars. Experts go over them with extreme care, seeing that every nut and bolt is in shape, that the springs contain no hidden defects, that the motor runs swift and true. When the race starts everything within the range of human possibilities has been done to make every motor car a perfect piece of mechanism. And when the classic is over, the manufacturer who made the winning car spends large sums of money advertising to the world that his particular make was victorious. He shows what his car will do under severe strain. He is proud of the record made, and justly so. Something of the same idea might be carried into effect with relation to wheat thrashing this year. If a motor car race is important enough for experts to spend time and effort on the cars, surely wheat harvest is of sufficient importance for enough effort to see that every thrashing outfit is in perfect working order and ready for the wheat when it begins to come. There ought to be the same friendly rivalry between manufacturers of thrashing outfits as there is between the motor car makers. The man whose thrashing machine has made a perfect score has a good advertising story to tell the farmers. This is one particular reason why the manufacturers ought to organize their experts and have them available for getting the bad-order machines in shape. Every thrashing equipment should be 100 per cent efficient when the signal is given to start the engine.—The Indianapolis News.

"SMILE, SMILE, SMILE"

Do you give as good as you get? Does your soldier boy fill his letters with accounts of the disagreeable things he is meeting, or does he cheerfully ignore them and try to make you believe that he is having the best time ever? He knows that you can do nothing to change conditions as he finds them, so, in his fine philosophy, why pass the worrying on to you? Turn the picture around and look at the boy's side of it. You will never know the half of the things he endures; he won't tell you now, and when he comes back he will wave them aside as of no importance. As you can't help him, he can't help you. A grumbling letter, or one full of discouragement, will only make a soldier a little less efficient in his job; you will still have the home problems to tackle. The need is not so much for more letters, but more cheerful letters, is the word that comes from the camps. " The mud-soaked 'Old Bills' of the trenches, cheerfully ignoring vermin, rain, and shell-fire, continue to wind up their epistles with, 'Hoping this finds you in the pink, as it leaves me at present,'" says Lieutenant Dawson. "They are always in the pink for epistolary purposes, whatever the strafing or the weather." We at home should be "in the pink." We should do more than "keep the home fires burning;" we should let them shine on and in the letters that we send to camp.—Good Housekeeping.

GET-RICH-QUICK

There is not a state in the Union that offers better opportunity for investment than Utah. Agriculture, mining and manufacturing have made wonderful progress but the surface is still practically unscratched. We have thousands of idle ones of the finest kind of farming land awaiting the manpower and water development, that will put in the front ranks of production. These mountains of ours hold millions of dollars in mineral wealth yet to be developed. Our rivers are running free with power to move mountains and turn the wheels of commerce until Salt Lake City will be the big business center between Chicago and the coast. There is no speculation in this—all these things are going to happen just as sure as we are going to thresh the military power of Germany within an inch of its life. Big things are bound to happen in the intermountain country when the war is over and the wise man will be ready to get in on the ground floor.

Recently we have had an epidemic of wildcat development—unscrupulous high-binders who have no regard for truth or honesty have been going the limit in separating people from their money for worthless "oil stock." Now oil is a mighty good investment, the world demand for oil has never been so great or so urgent—but "oil stock" is a different proposition. Oil stock promotors have become so numerous and so flagrant in their methods that they have brought suspicion on oil investments that are really meritorious. Of course people who buy stock from strangers and concerns of no financial standing have only themselves to blame but nevertheless they are entitled to a fair measure of protection from these burglars who have so far been able to evade the law. If peopel would use a little more common sense in these matters the solution would be simple.

Any bank with which an investor is doing business will gladly give valuable advice on the merits and demerits of "oil stock." Would it not be a good plan to put such propositions up to your banker before you bite again? In this way you may have enough money left to get in on the ground floor when the real opportunity comes.—Goodwins Weekly.

The Pinto Bean
A War-Time Food

W. F. Wilcox.

The pinto bean is colored, which ac-ounts for the lateness in its adoption er a wider area at an earlier time. onsumers demand the pure white ntel, drawing the color line in beans in humans. Nevertheless, tests, onclusively prove that the colored ean is possessed of a high food value, s nutritive content being even higher an ordinary white beans.

The pinto has for generations been nown as the Mexican bean. Although exico boasts of some 60 or 70 bean arieties, the pinto bean specific is a n colored bean with brownish spots, eing shaped like the kidney variety, ough having a yellow circle around e eye of the germ. It is equal to e navy bean in nutritive value, ough more delectable.

The pinto is adapted to a wide area the Western states where more com-on varieties do not thrive. It is a ardy crop and may be successfully oduced in dry farming sections, here little soil moisture is found. umper pinto crops have been grown some regions in seasons when all her farm crops dried up for want of oisture. The crop is planted in ws, 28 to 38 inches apart, with a an planting machine. The yield is an average 600 to 700 pounds per re in dry sections; from 1,200 to 500 pounds in irrigation regions.

Planting season is usually the third eek in May, or as soon after the dan-r of frost as possible. The seed rives especially well on sod ground, d for this reason fits in well in the tation system of farming, which is coming more popular in Western ates. The cultivator is used twice ring the growing season and, when ature, the vines are harvested and reshed with a bean huller as other arieties.

Prof. Vaplon of Colorado State Agri-ltural College, who is hoping to pularize the pinto with American nsumers, and thus create the de-and which available tillage area erits, has this to say of the bean:

"About 400 years ago, when Cortez amed in Mexico, he found the Aztec ng and queen a-harvesting the pinto an. Not once in all their lives be-re, upon their distant shore, had ortez and his soldiers seen the freck-d, speckled pinto bean. The king sked Cortez to come up to visit him d with him sup; he promised a royal ast: the flesh of bird and of beast, sters and krout and dachshund lean, am soup, made from the pinto bean— d a place beside his own dear queen. ortez went up with all his crew to t a meal with Montezu. It sure was e; 2,000 kine were made into a mut-n stew. They ate as though they d been starved, of all that Mon-zumma carved; all declared, both t and lean, nothing could compare ith the pinto bean.

"I'm fond of tender Irish stew and odle soup, spaghetti too; roast beef n't bad; and so ain't shad, while lim-erger makes me mad. But if we're ing to win this war and wake the aiser with a jar, we've got to feed r soldier lads with something else an frills and fads; with something at is full of tar. The pinto bean will e them pep; the pinto bean will ke their step so long and strong, bold and swift, of Kaiser Bill they'll ake short shift. The pinto bean, ng may it bake and stew and stop e stomachache."

Well known as the pinto is in the uthwest it has never become known r the North and East Therefore, the ovement is under consideration to ake consumers familiar with this ean, for it is equal in every way to her varieties. The Colorado Experi-ent Station says: "In food value it parctically identical with the navy ean, but being more tender in flesh ooks more easily. Chemical nalysis shows that in the total calor-ies or fuel value per pound the pinto excels other beans having 1,695 units, compared with 1,625 for the lima and 1,605 for the navy bean."

The pinto being rich in protein is an excellent substitute for meat. A comparison of nutritive values of common foods shows that one pound of this variety at 12 cents to be equal to the following: 4.4 pounds of raw potatoes, at 3½ cents per pound, 15.44 cents; or, 1.63 pounds of sirloin steak, at 30 cents per pound, 45.64 cents; or 2.01 pounds round steak, at 23 cents per pound, 46.23 cents; 5.2 pounds, or 5 pints of milk, at 5 cents per pint, 25 cents.

CAKES FOR WAR TIMES

Recipes For Two Kinds Which Do Not Require Wheat, Butter, or Sugar.

During war times we should eliminate the rich, fancy cakes from our diet and substitute in their place plain loaf cakes, and cookies that are made largely from wheat, butter and sugar substitutes. Many women who "put up" dinner buckets for men, or lunch boxes for children feel the need of having on hand some type of cake or simple cookies. The following recipes have been tried out and found satisfactory.

Spice Cake—100% Barley.

½ cup fat, 2-3 cup sugar, 1 cup corn syrup, 3 eggs, ¾ cup skimmilk, 1 tsp. vanilla, 1 cup raisins, ½ tsp. ginger, 6 tsp. baking powder (level) 1 tsp. salt, 1 tsp. cinnamon, ½ tsp. cloves, 1 tsp. allspice, 3¾ cups barley flour.

Method: Cream the fat, sugar; add beaten egg yolk. Add the sirup and mix well. Add alternately the liquid and the dry ingredients sifted together. Add the flavoring and fold in the well-beaten egg whites. Bake for one hour in a moderate oven. Increase the temperature of the oven to that of a hot oven after twenty minutes.

Chocolate Cake.

½ cup fat, 2-3 cup sugar, 1 cup corn syrup, 3 eggs, ¾ cup milk, 1 tsp. salt, 2 cups corn flour, ½ cup ground rolled oats, 6 tsp. baking powder (level) 1 tsp. cinnamon, 2 squares chocolate, 1 tsp vanilla.

Follow same directions for making as for spice cake. Do not frost cakes. —U. S. Food Administration.

WEEKLY MARKET REVIEW

Union Stock Yards, Week Ending July 2nd — Cattle — Receipts, 4,812; market, steady; choice steers, $9.50@11.50; good, $7.00@9.00; feeders, $5.00@7.00; choice cows and heifers, $7.50@9.00; fair to good, $4.00@5.50; canners, $3.50@4.50; feeder cows, $3.00@4.50; veal calves, $8.50@9.50; choice bulls, $6.00@7.00.

Hogs—Receipts, 1,219; market, steady; tops, $15.75; bulk of sales, $15.75.

Sheep—Receipts, 4,559; market, steady; lambs, $16.00@16.50; ewes, $10.00@10.50.

Omaha, Neb., July 2.—Hogs receipts 17,500, steady to 5 higher; heavy $16.00@16.35; mixed $16.15@ $16.25; light $16.15@16.40; pigs $11.00 @15.00; bulk $16.15@16.25.

Cattle—Receipts 6800; steady, 10 to 15c lower; native steers $12.50@19.30; cows and heifers $8.00@13.50; western steers $9.50@15.00; Texas steers $9.00@12.00; cows and heifers $7.50 @11.50; canners $7.00@8.00; calves $10.00@13.25; bulls, stags, etc., $8.00@ 12.00.

Sheep—Receipts 12,750; steady yearlings $13.00@14.00; wethers $12.-00@13.00; ewes $10.50@12.00 lambs $16.25@18.25.

WEEDS—HUNS

If asked as to what I thought was the greatest future problem of the farmers, I would say, "weeds." June will be the time for their great drive, and, like the Huns, they will come in swarms. They will come in the open and from behind the trenches and over the trenches. They will seek the cover of everything possible, but will keep coming. And when you mow them down and cut off the first advance, another horde will follow up. New contingents will keep fiilling up the gaps. They will hide behind and grab at any old place for protection, such as fence rows and uncultivated tracts.

Weeds, if allowed to come on your farm, will steal your water. They will rob your plants of valuable plant food. They will take certain toll in the way of dockage.

The weed has but one friend on earth, and that is the Kaiser. Do you want to help him?

To kill weeds economically, rotate; grow tilled crops in your rotation, as sugar beets, potatoes, corn, etc.

There is not a thing too small for the weeds to do. They will sneak into the fields by night; no man's land is their delight.

To make our projects safe places in which to live, we must deal with weeds just as we would with the Huns. If possible, hold them at the first-line trenches. Get them with our long-range guns, and when closer use our machine guns (cultivators, hoes, etc.). Cut off their heads and cripple their feet. Mow them down in swathes. Smother them with gas. Take no proisoners and bury no dead. No Red Cross work is needed in this battle. Don't let them hold a single minute, as they are as treacherous as a submarine. They must be downed. So, while our boys are doing their duty at the front, let's get busy on the farm and do ours.

It seems hard to be so cruel, but these are war times, and no time for halfway measures.

Kill the weeds.—I. D. O'Donnell.

AFTER THE WAR

Dr. H. J. Waters.

This has been the case after every great war that has ever been fought. After a time spent in camp, men turn instinctively back to the land.

China is certain to develop her agriculture, as will also South America. Africa will be developed and transformed. There never was a more encouraging or inviting outlook for the trained man, so the one parting word of advice I would give you is, stay by your work in college as long as you can.

There is a great complaint of the shortage of labor in this country. Industries are paralyzed. Land is going untilled, and in some cases crops are unharvested because of this shortage. Yet there is no shortage of labor. Never before was there as much idleness and unemployment as there is in the country today. We must decide whether the service we are rendering is necessary or important and decide upon the service that it will be best for us to render.

The indications are that when the war is over this country will suddenly be forced to change her custom of selling raw material in which from 5 to 15 per cent of labor is involved to that of furnishing products in which the labor alone will be from 45 to 70 per cent.

We have before us one great task—to win the war. Everything else must be subordinated to that. But in your thinking and in your planning look ahead also and prepare to render the best possible service in the days when the war will be over and the world must be rebuilt.

You have a dollar.
I have a dollar.
We swap.
Now you have my dollar.
And I have yours.
We are not better off.
You have an idea.
I have an idea.
We swap.
Now you have two ideas.
And I have two ideas.
That's the difference.
—From the Modern Retailer.

BAYONET DRILL

Drill Sergeant (to recruit who is being instructed in bayonet practice): "Now, Murphy, how would you use your boyonet if your opponent feinted?"

Murphy: "Sure I'd just tickle him with the p'int of it to see if he was after fakin."

Prayer is the golden key which should open [illegible] the evening.—Bishop Hopkins.

This is the Mower that's Easy on the Team

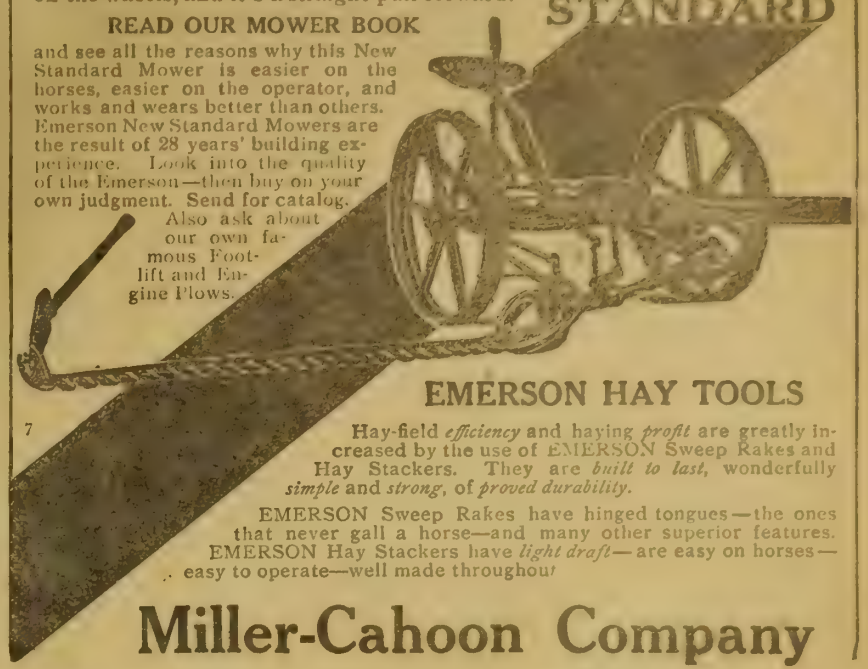
Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

EMERSON STANDARD

READ OUR MOWER BOOK

and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 28 years' building experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.



EMERSON HAY TOOLS

Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

Miller-Cahoon Company

MURRAY, UTAH IDAHO FALLS, IDAHO

LIVE STOCK

OAK POISONING RESULT OF PASTURING CATTLE TOO EARLY

Animals Eat Excessive Amounts Before Other Forage Comes On.

No Harm in Oak if Small Quantity of Hay is Fed—Use Ranges Only After Grasses Have had Fair Start.

It has been definitely proved that excessive feeding on oak leaves and buds causes stock poisoning. Reports of stock poisoning from Colorado, Utah, Texas, and New Mexico were investigated by specialists of the United States Department of Agriculture, and a study was conducted in certain districts where oak is the principal form of vegetation. It was found that the poisoning usually occurs in early spring before grasses and other suitable forage have developed sufficiently to furnish a supply of feed. The department specialists recommend, therefore, that cattle should not be turned on the summer range too early or that they be provided with some other feed until the grasses have a good start.

The losses from oak in America seem to be confined to cattle, although there have been unconfirmed reports of the poisoning of sheep. No cases are known among horses. The most noticeable symptom is extreme constipation; the affected animal becomes gaunt, its coat rough, its nose dry and cracked. The attitude is peculiar, the head being extended forward. Appetite is lost and weakness increases until the case is ended by death. These symptoms appear after rather long feeding upon the oak, not less than about a week, and the animals may die in two weeks or in some cases linger for an indefinite period.

Treatment of Oak Cases.

While affected animals may be relieved by treatment (Epsom salt in 1-pound doeses or given in small quantities in the drinking water(the sensible treatment is to prevent the trouble by proper feeding. It has been found experimentally that if a small quantity of hay is added to the daily ration no harm results from oak feeding. As small a quantity as three pounds of alfalfa hay daily with oak will provide a maintenance ration for a two-year-old steer. Oak may be considered a good forage when other feed is provided. In fact, cattle in Utah frequently come off the oak ranges in the fall in fine condition.

There is no doubt that in some localities cattle are admitted to the summer range too early. They frequently pass into the oak zone when there is pratcically nothing else on the range and in their greed for green material they are forced to eat the young leaves. It has been shown by observation that they do not eat them by preference, but will take grass more readily if any is to be found. It is, therefore, more profitable in the end to feed a little longer and use the range only after the grasses have had a fair start. The exact time when this should be done can not be determined in advance, but should be fixed each year after a careful examination of the range.

SHEEP RAISING STEADILY ADVANCING WITH MUTTON KINDS IN LEAD

Sheep raising primarily for mutton production and secondarily for wool is steadily advancing in this country. At the present time 45 per cent of the sheep belong to those of the mutton blood, 35 per cent to those of fine wool, and 20 per cent to the crossbreeds. Ten years ago the mutton sheep were 35 per cent of all sheep, fine-wool sheep 41 per cent, and crossbreeds 24 per cent, and consequently during this period one-tenth of the national flock has changed from wool to mutton as the chief purpose. While mutton sheep have thus increased their percentage of all sheep by 10 during as many years, fine-wool sheep have lost 6½ from this percentage and the crossbreeds 3½.

This information is supplied by a recent investigation by the United States Department of Agriculture and accords with the advice and propaganda of the department in recent years in favor of meat production. The tendency in this direction in the sheep industry is doubtless economic, and is not the result of a concerted purpose by sheep keeper to prefer mutton and lamb production to wool regardless of relative profit.

Revolution in Western States.

This revolution or recent years in the sheep industry, which is now presumably continuing, is largely characterized in the national average by the Western and Pacific States, in which more than one-half of the sheep are found mostly on ranges. The fine-wool sheep are 46 per cent of all sheep in that group of States, a loss of 7 in the percentage in 10 years; the crossbred sheep are 22 per cent, a loss of 2½; and those losses have gone to the mutton sheep, which are 32 per cent of all sheep, a gain of nearly 10 in the same number of years.

The greatest advance in this movement has been made in the North Atlantic States, in which farmers' markets are near and the people have an active taste for mutton and lamb. In these States 62 per cent of the sheep are of the mutton bloods, a gain of 20 in the percentage in 10 years; only 17 per cent are fine-wool sheep, a loss of 17; and 21 per cent are crossbreeds, a loss of 3.

The least change in percentages has occurred in the South Atlantic States, where the mutton sheep were formerly a high fraction and are now 68 per cent of all sheep in that region, a gain of 2½ in 10 years; the crossbreeds are 24 per cent, or about the same as 10 years ago, while in all

Have You Met This Kaiserite?

NAIL LIES LIKE THESE!

THAT Red Cross supplies are being sold to shopkeepers by dishonest Red Cross officials.

THAT the Masonic orders have protested against allowing the Knights of Columbus to build recreation huts for soldiers.

THAT interned German prisoners are being fed five meals a day.

THAT this is "a rich man's war" or "a business man's war."

THAT farmers are profiteering.

THAT nine American warships were sunk in a disastrous engagement in the North Sea.

YOU FIND HIM in hotel lobbies, smoking compartments, clubs, offices, and even in homes. He thinks it's clever to repeat "inside facts" about the war. He is a scandal-monger of the most dangerous type.

He repeats all the rumors, criticisms and lies he hears about our country's part in the war. He gives you names, places, dates. He is very plausible.

But if you pin him down, if you ask him what he really KNOWS at first-hand, he becomes vague, non-committal, slippery. He tries to make you think that the Government can fool you, if you are willing to let it—but it can't fool him. No, siree! He's too smart.

People like that are hurting your country every day. They are playing the Kaiser's game. They are fighting against this country. They are making it harder to win the war.

Through their vanity or curiosity or TREASON they are helping German propagandists to sow the seeds of discontent.

For every lie that has been traced originated with a German spy. Don't forget that.

There was the one about the President's Secretary. It was said, and said again, and spread broadcast, that Mr. Tumulty was convicted of treason and shot at Fort Leavenworth. That lie was easily scotched by a public statement from Mr. Tumulty himself.

But other lies are more insidious—harder to down. In another paragraph some of them are told. But they are only a few of many.

They are taken from a publication, issued by the Committee on Public Information, called:

"THE KAISERITE IN AMERICA"
101 GERMAN LIES

This little book describes the methods of Germans here and quotes 101 lies that have been nailed by a newspaper which took the trouble to run them down. It will be sent to you upon request.

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THIS SPACE CONTRIBUTED FOR THE WINNING OF THE WAR BY

THE UTAH FARMER PUBLISHING COMPANY

her groups of States they have re-tively diminished, and the fine-wool eep are only 7 per cent, a loss of arly 3 during the period.

Where Fine-Wool Sheep Are.

At the present time the South At-ntic States have the lowest fraction fine-wool sheep, 7 per cent, and the orth Atlantic States are next with per cent; the highest fraction, 46 r cent, is in the Western and Pacific oup, and next below are the South ntral States with 30 per cent.

Mutton sheep are as high as 68 per nt of the sheep in the South Atlantic d West North Central States, and low as 32 per cent in the Western d Pacific States and 44 per cent in e South Central.

Ohio is by far the leading sheep ate outside of the Western and cifis group and has 3,000,000 sheep, out one-half of which are now mut-n bloods, while 10 years ago the action was nearly two-fifths.

CREASE LIVESTOCK PRODUCTION

Conservative government estimates dicate that livestock losses in Eu-pe amount to not less than 100 mil-n head of cattle, hogs and sheep nce the war began. They also show at the allied nations have sustained eater relative losses than the central wers, particularly Germany. This is e to the fact that Germany has ac-ired large numbers of animals from nquered territory as Belgium, Ser-a and Rumania. Belgium has been actically depleted of livestock of all sses.

The exact losses of livestock, ac-rding to government figures, are as llows: The allied countries, 46 mil-n head; Germany, 18 million; neu-al nations, one million; Austria, rkey and Russia combined, 35 mil-n; total, 100 million head. Esti-ating cattle to average 500 pounds, dressed meat; sheep, 40 pounds, d hogs, 150 pounds, the above losses a percentage basis for each coun-y distribute themselves as follows: e allies as a group, 28.7 per cent; gland, 12.5 per cent; France, 21.4 r cent; Italy, 17.8 per cent; Bel-um, 82 per cent; Germany, 36.3 per nt, and European neutrals, .9 of 1 r cent.

These figures furnish one of the rongest reasons why the American rmer should redouble his efforts at eat production. This becomes even ore evident when we take into con-deration that the entire number of ttle, hogs and sheep in the United ates does not exceed 187 million ad, showing that Europe has lost nsiderably more than half the total mber of all the meat animals in the ited States.

We cannot, in this country, increase ther cattle, hogs or sheep, or all of em together for many years to me so rapidly as to overcome these tremely heavy losses, but it is our ty to do all we possibly can along at line.

It is almost impossible for us to re-lize what such heavy livestock sses really mean. Suppose we sud-nly swept from our farms and from e range sections of the country one-alf of our meat animals, what would at mean to our people and what fect would it have on meat prices? et the herds of Europe have lost ore animals than half of our total mber. The farmer who doubles his eeding herds, and who at the same me pays special attention to qual-y is the man who will reap the larg-t profits in the agricultural field ter the war is over and shipping fa-lities begin to assume normal pro-rtions.

Numerous feeding experiments ade by experiment stations and prac-cal farmers have amply demon-rated that by feeding silage and cot-nseed meal or linseed meal or al-lfa hay to beef cattle the amount of eef that can be produced per acre ill be just twice as large as when e corn is allowed to ripen and is fed the old way. The lesson, therefore, to build more silos. Feed less dry corn to beef cattle and feed as much as possible to the succulent form of silage and double the beef-producing or cattle-carrying capacity of your farm. The man who follows that advice will some day thank us for it. So long as the war lasts there is not going to be much demand for prime beef, such as can be produced only by heavy corn feeding; the call will be for a medium grade of beef that can be produced with silage and alfalfa or silage and oil meal together with a small amount of dry roughage.

Fresh Vegetables

Good To Eat and Good For Your Health.

Do you eat them every day, many kinds? Cook them so that they are refreshing and palatable, and your family will call for them over and over again.

Use all kinds of vegetables—whatever you grow in your own garden or what you can buy in the market. Vegetables should be plentiful this summer, for all over the country people have made war gardens. You can't afford to miss using vegetables; they mean vigor and health for you. Use what you can while they are fresh and at their best, and if you have more than you can use now, can, dry, or preserve them in other ways for winter use.

Use lettuce, onions, cabbage, cauliflower, chard, spinach, brussels sprouts and others like them. These will come along all through the summer and fall. They give you the iron and lime and other minerals that you need to build your body and keep it in repair and the special substances that help make children grow and keep adults healthy. Eat them yourselves, and give them to your children.

If you live in the country you can gather wild greens which are just as good as those that grow in your garden. In the city, too, you can often gather from vacant lots such good things as dandelion, wild mustard, lamb's quarter, and wild lettuce.

Don't throw away your tender beet tops, onion tops, turnip or radish tops. Cook them for greens.

Use potatoes, sweet potatoes, Lima beans, green corn, green peas, onions, beets, carrots, squash. Such vegetables give you fuel, besides the minerals, and some of them give you protein. They can help you save meat and wheat. When you serve enough vegetables you do not need as much bread.

Remember the many good things vegetables can do for your body. They help keep your blood as it ought to be, and your whole body in good condition. Vegetables are better than medicine to prevent the common evil of constipation.

And, besides all these, think how appetizing they are—crisp lettuce, sweet, juicy beets, tender peas, celery, beans, and corn—all sorts of flavors and texture to lend variety to your meals.

Points To Remember in Cooking Fresh Vegetables.

Vegetables just out of the garden taste best when simply cooked—steamed, boiled or baked— and served with a little salt, butter, milk or cream. Often a heavily-seasoned sauce covers up the more desirable vegetable flavor.

Overcooking of vegetables impairs their flavor. Very delicate flavors are destroyed, while vegetables with strong flavors, such as cabbage or onions, become disagreeably strong if cooked too long. Overcooking also destroys the attractive color of some vegetables.

Cook summer vegetables as soon after they are gathered as you can, in order to preserve the flavor. If they must be kept over, keep in the ice box or some other cool place.

Let wilted vegetables soak in cold water to freshen them. If vegetables must stand after paring, covering with cold water will prevent wilting and discoloration.

Before cooking, put head vegetables and green in cold water for an hour, with one tablespoon of vinegar, to remove insects, then wash very carefully.

Drain all boiled vegetables as soon as tender—they become soggy if they are allowed to stand undrained after cooking. The water drained off may be saved for soup stock.

Most vegetables should be cooked in a small amount of water, because a part of the mineral salts dissolves out into the water, and is lost if the water is thrown away. Cook whole when possible.

Tender spinach or lettuce leaves require no added water for cooking. If thoroughly washed, enough water will cling to the leaves to prevent their burning.

Delicately-flavored vegetables should be steamed or cooked slowly in a small amount of boiling water until tender and the water boils away.

Strong-flavored vegetables may be cooked uncovered in a large amount of rapidly-boiling water, and the water changed several times during cooking.

Starchy vegetables should be put on to cook in a sufficiently large amount of boiling water to cover them. Boil gently, and keep kettle covered.

The time required for cooking vegetables depends on the kind, size, and age of vegetable. You must use your judgment in deciding when they are done, but a time-table may help you.

Time-Table for Cooking Fresh Vegetables in Water.

Asparagus	15-20 minutes
Beans, Lima (green)	¾-1 hour.
Beans, string	1-3 hours
Beets, old	3-4 hours
Beets, young	¾ to 1 hour
Cabbage	20-30 minutes
Carrots	30-60 minutes
Cauliflower	20-30 minutes
Corn, green	10-15 minutes
Onions	20-30 minutes
Parsnips	30-45 minutes
Peas, green	20-30 minutes
Potatoes	30-40 minutes
Spinach	15-30 minutes.
Turnips	30-45 minutes.

Creamed Onions and Tops.

Select small onions no larger than your finger in size. Cut off the uneven ends of the tops, leaving about three inches of the green part above the onion. Boil until tender in salted water and serve with a simple white sauce on toast as asparagus is served.

The tops are very good served alone, cut into pieces, boiled until tender and served with white sauce.

Young beets may be cooked with their tops and stems and all served together also. Serve buttered or with vinegar as preferred.

Green corn is delicious boiled on the cob and served buttered, or for a different way, try this baked dish. None of the sweetness of the corn is wasted when cooked this way:

Green-Corn Pudding.

This is a delicious way to serve either sweet corn or the tender field corn. A little sugar may be added to the field corn, if desired.

Husk and silk 12 good-sized ears of corn. Slice off half the kernel with a sharp knife, and with the blunt edge of the knife scrape out the milky part that remains on the cob. Add a tablespoon of butter, salt, and pepper and three-fourths cup of milk. Bake for 45 minutes, allowing it to brown on top. This makes a creamy dish, which is best served in the pan or baking dish in which it bakes.

Butttered Carrots.

Wash and scrape small carrots and cut in narrow strips. Cook three cups of corrots in just enough water to cover. When carrots are tender and only a small amount of water remains, add a tablespoon of butter. Cook slowly until almost all of the remaining water has evaporated. The carrots will have a delicious flavor cooked this way and none of the minerals will be wasted. String beans cut in halves lengthwise or parsnips cut in strips are also good served this way.

Remember that vegetables have their own particular part to play in the diet, which neither meats nor cereals nor fruits nor sweets can play.

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POULTRY

FEEDING GROWING CHICKS

Some Timely Suggestions That Will Insure Thrifty-Broods.

After the chicks are 10 days old a good growing mash, composed of 2 parts by weight of bran, 2 parts middlings, 1 part corn meal, 1 part low-grade wheat flour or red-dog middlings, and 10 per cent sifted beef scrap, may be placed in a hopper and left before them all the time. The mash may be fed either wet or dry; if wet, only enough moisture, either milk or water, should be added to make the feed crumbly, but in no sense sloppy. When this growing mash or mixture is not used a hopper containing bran should be accessible to the chickens at all times.

After the chickens are two months old they may be fed four times daily with good results. After they are three months old three feedings a day are enough.

When one has only a few chickens it is less trouble to purchase the prepared chick feeds, but where a considerable number are reared it is sometimes cheaper to buy the finely cracked grains and mix them together. Some chick feeds contain a large quantity of grit and may contain grains of poor quality, so that they should be carefully examined, and a guaranty as to quality secured with the purchase.

Sour Milk Will Hasten Growth.

As soon as the chickens will eat the whole wheat—usually in about eight weeks—cracked corn, and other grains, the small-sized chick feed can be eliminated. In addition to the above feeds the chicken's growth can be hastened if they are given sour milk, skim milk, or buttermilk to drink. Growing chickens kept on a good range may be given all their feed in a hopper, mixing 2 parts by weight of cracked corn with 1 part of wheat, or equal parts of cracked corn, wheat, and oats in one hopper and the dry mash for chickens in another. The beef scrap may be left out of the dry mash and fed in a separate hopper, so that the chickens can eat all of this feed they desire. If the beef scrap is to be fed separately it is advisable to wait until the chicks are 10 days old, although some poultrymen put the beef scrap before the young chickens at the start without bad results.

Chickens confined to small yards should always be supplied with green feed, such as lettuce, sprouted oats, alfalfa, or clover, but the best place to raise chickens successfully is on a good range where no extra green feed is required. Where the chickens are kept in small bare yards, fine charcoal grit and oyster shell should be kept before the chickens all of the time, and cracked or ground bone may be fed. The bone is not necessary for chickens that have a good range.

LATE-HATCHED CHICKS

Chicks hatched late in the season when the weather is very hot may not be raised as easily as the earlier-hatched chicks, but they can be raised successfully, if care is taken to make them comfortable. It will not do to slight the chicks during excessively hot weather.

The late chicks require entirely different treatment from that accorded the early chicks. They should be kept away from the older fowls and fed separately. Trying to raise late chicks on the ground where the early chicks were reared will result disastrously. The ground will be insanitary from the droppings of the early chicks, and will be a breeding place for disease. I believe tainted soil to be one of the principal causes of loss of so many chicks each season.

The late chicks should be kept in the shade as much as possible. The brood coops should be well ventilated. I prefer to have the entire front either slatted or covered with wire netting. There should also be an open space under the roof at the rear of the coop. A coop without a bottom is preferred and it should be moved to a fresh spot once a week. If there is a floor in the coop do not allow the droppings to accumulate. Clean such a coop once a week and keep well whitewashed Get down in front of the coop on some sultry night, and you will then know the necessity of keeping the coop clean.

Chicks must not be allowed to crowd in hot weather. Crowding causes sweating and this makes weak chicks, as well as stunted ones. There are many factors that enter into the proper care of late chicks, such as fighting lice, mites, overcrowding, hot weather and poor sanitation of soil. These are some of the things we do not have to contend with in rearing the early chicks.

Care should also be taken not to overfeed. Keep the chicks a trifle hungry. The same rule of not feeding until the chick is 48 hours old, applies in the care of late chicks as well as with the early natches. For a few days they should have only dry bread crumbs and pin-head oats, after which the prepared chick feeds may be given. Later on a good mash is necessary to bring these late chicks to maturity. One I have found to be excellent is, 2 parts bran, 1 part middlings, 1 part corn meal (unbolted), 1 part finely ground beef scrap and a small amount of linseed meal. This is moistened and crumbled, but not fed very wet.

Water vessels must be kept very clean and the water pure.—E. C.

THE CARE OF AN AUTOMOBILE

By J. W. Davis.

In considering the car upkeep question, three things have to be considered, the driver, the car, and the road. A reckless driver may ruin a good car or bad roads may do the same in spite of careful running. While the writer realizes that it would be advantageous to have upkeep figures given, it would be of no practical value as the cost of upkeep is not identically the same, even with the same make of car, or even the same driver, as roads and weather cut a big figure in fuel.

It is well known that driving into the wind takes more gas than when there is none and the harder the wind the more gas required.

Different stretches of road also require different amounts of gas. However, more gasoline is wasted by faulty engine adjustment than any other way. Too rich or too poor mixture in the carburetor, missing cylinders, leaking or wrongly timed valves, and carbon in the cylinders all are wastes of power.

How to Test the Mixture.

One of the best ways to test the quality of the mixture is to turn the engine over a couple of times with the switch off and the trottle open remove one of the spark plugs and hold a lighted match to the hole. If the mixture is too poor it will burn weakly or not at all, or if too rich will burn with a yellow colored flame. A mixture which is about right will explode, not burn.

Care of Carburetor.

A carburetor adjusted for summer may not be just right for winter, but when once set should be let alone. If there is still trouble it may be dirt in the carburetor, faulty ignition or carbon in the cylinders. A carburetor should be flushed out often and if there is much trouble with dirt, the gasoline should be strained through a fine meshed smooth cloth.

How to Locate Cause of Trouble.

When an engine runs after the switch is turned off or knocks in the cylinder while running, it is a pretty sure sign of carbon. The spark lever too far advanced will also cause knocks in the cylinder.

The only satisfactory way of removing carbon is to take the engine apart and scrape the cylinders with the steel carbon remover, which can be bought for the purpose.

This will take some time but if done carefully and methodically will not be very difficult. Put everything aside in just such order that you can get it back in just the way it was before.

Poor oil or too much oil is the cause of carbon, and while it is necessary for the cylinders to have plenty of oil, too much is just as bad as not enough. Only the best grade of oil should be used. It pays in the end.

Valves.

Valves generally have to be ground every 30 or 40 days if the car is used steadily. On some cars the engine has to be taken apart to do this; on others there are plugs directly over the valve heads, which may be removed to get at them. The edge of the valve head should be coated with valve grinding paste, which can be bought in tubes, and turned back and forth with a short motion till the edge of the part and the valve show bright all the way around. While doing this, repeatedly shift the valve around so as to grind evenly. Be careful not to get any of the paste in the cylinders, is it will injure them. Valves seldom get out of time, but if they do, they had best be adjusted by an expert. It is too particular a job for one who is not used to the work.

Ignition Troubles.

Most ignition troubles are confined to dirty or improperly spaced spark plugs. Excessive oil or too rich a mixture causes fouling of the plugs and should be remedied. Engines with magnetos have less trouble than those depending on batteries. Batteries should not be allowed to fall below 20 ampheres, all wiring kept from getting oil soaked, or chafed, as this will soon cut through the insulation and cause a short circuit as will also oil if it penetrates the insulation. The space between the points of the spark plugs should be between 1-16 and 1-32 of an inch, so as to give a thick spark.

An Overheated Engine.

This may be caused by driving too long on low, too late a spark, or too rich a mixture. A clogged circulation may also be the trouble. Loss of power may be due to a slipping clutch if a leather faced cluth, and may be oil soaked or may need a new leather. Disc clutches have to be kept oiled.

All hubs, differential and gear case must be well packed with hard oil. A mixture of half cylinder oil and half hard oil is good for the gear case. The main thing required to get good service of a car is to keep the engine tuned up in good order, and use reasonable care in driving. Better go several miles around a very bad spot of road and save the wear and tear on the car.

Tires.

As to tire service, the important thing is to have good tires to start with. A thick-treaded casing and the thickest red inner tube you can buy are good insurance against trouble. A small vulcanizer is a good investment as all small cuts in the casing and all ordinary inner tube punctures can be repaired and is a great saving. Tires must be kept inflated till they stand up well rounded under the load, if you would prevent tire trouble.

TOO MUCH FOR HIM

A Georgian from up in the mountains came to town on his annual trip with a load of corn, sweet potatoes and other produce to exchange for groceries. As he neared the city he saw a sign: "Speed limit fifteen miles and hour." Prodding his oxen frantically with a stick, he muttered. "By Gosh, I don't believe we can make it."

HARD TO TELL

"Don't yo uknow I tol' you not t' go swimmin' wid no white trash chillun eh?" sternly asked Sambo Johnsing.

"But he wa'n' white befo' he went in," replied Sambo's small son.

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Forging and Tempering Steel

The steps in making and tempering a cold chisel are these: 1. Forge the piece of steel into shape. 2. Anneal it. 3. Temper the cutting end. I shall take these up in turn.

Tool steel is made by adding carbon to wrought iron of good quality; it differs from wrought iron in having a granular instead of a fiberous structure. Steel has the property of becoming hardened when suddently cooled from high temperatures. Great care must be exercised in heating steel. Over-heating will cause the structure to become coarse grained, and the ends of the finished tool will crumble easily. The piece should not be heated above a yellow heat. In case it does become heated above that it should be worked rapidly with quick blows.

While steel should not be heated to too high a temperature, it is equally true that it should not be forged after it becomes too cold. Forging after the steel has cooled to a dull red breaks the granular structure within the piece. The forging should always be done with hard, rapid blows, and the blows should be equally distributed on the different sides of the piece. Forged tools are better than those made by any other process, because forged steel has a finer, tougher grain.

Annealing Steel

To anneal a piece of steel is to put it through a process that will leave it in the softest condition possible, and add to its working strength. Steel may be annealed by heating it to a dull red and placing it in a pack of air-slaked lime until it is cold. The cooling by this method may require as long as ten hours. When it is desirable to finish the piece as soon as possible the water annealing process may be used. In this process the piece is heated to a dull red, cooled to the "annealing temperature" and then quickly plunged into cold water. The annealing temperature is determined by laying a piece of soft wood against the hot metal; when the metal has cooled to such an extent that it does not char the wood, the annealing temperature has been reached, and the piece should be quickly plunged into cold water. Another test for the annealing temperature is to file a bright spot on the heated piece and watch for a blue color. It is necessary repeatedly to brush the bright spot with a file in order to detect the color when it appears.

The experienced person gets better and quicker results with the water process of annealing, although results by that method are not quite so sure for the inexperienced. The part of the piece of steel that is annealed should be heated uniformly and cooled uniformly. After annealing ,test the piece with a file. If it files easily, it is well annealed. It is possible without annealing to make cold chisels and punches that will withstand a good deal of work, but it is always preferable to anneal.

Tempering Process

When the part of the piece to be tempered has been annealed it should be polished by grinding or filing; then comes the tempering. Tempering consists of two parts: First, the hardening of the steel, and second, the tempering of the hardness.

Suppose the piece to be a five-eighths-inch chisel about eight inches long. Heat up about three and one-half to four inches of the cutting end of the piece to a cherry red heat. As soon as it is heated, quickly take the piece from the fire and cool about one and one-half inches of the cutting end in a bath of pure water, leaving the part above that hot. The heat in the uncooled portion reheats the hardened part. If the water in the bath is soapy or dirty it will abscure the colors on the steel. While cooling the piece in the water hold it vertically and work it up and down very slightly, so there will be no definite cooling line.

When the one and one-half inches of the end has become cold, the tool should be taken from the water and the cooled portion quickly repolished, with a brick, stone or file. This polishing should be done immediately and rapidly, so the colors may be observed in time. After polishing hold the piece up to the light and watch the bright surface very closely.

Color Indicators.

Colors will be seen to creep slowly out from the hot part of the piece and extend over the hardened polished portion toward the end of the chisel. The leading color will be a pale yellow, which blends with a straw color just following; following the straw color is brown, following the brown a purple, and blue will bring up the rear. Each of these colors indicate the temperature of the steel just under that color. Thus these colors serve as a unique thermometer in the hands of the toolsmith. As they creep out over the cold, hardened end of the chisel they show that it is being reheated from the heat left above. The piece should be dipped in water when just the right color, or temperature, has reached the cutting edge.

The best tempering color varies for different steels and can be learned by experience, but in general practice it has been found that brown is the color to catch on the cutting edge. This is done by dipping the edge in water just as the brown color comes to the end. About one-half an inch of the end of the chisel should be held in the water until the whole piece has cooled. After tempering is completed the edge of the piece is sharpened by grinding. R. L. Moore.

CHEAPER GRASSHOPPER POISON INDUCES FARMERS TO COMBAT PEST ENERGETICALLY

A new formula for a poison in fighting grasshoppers has been tested out and found to be the equal, if not the superior, of the bran-mash formula, at least in the particular region where it has been used, according to a report to the United States Department of Agriculture from the entomolgist of Nebraska.

The regular bran mash formula composed of 25 pounds of bran, 1 pound of arsenic or Paris green, one-half gallon of molasses, and 6 lemons was found to cost about $1.75 at current prices in western Nebraska.

By using 15 pounds of alfalfa meal and 10 ounces of Paris green, at the same time increasing the molasses to 1 gallon and the water to 6 gallons, and reducing the number of lemons to 3, it was found that the same bulk of poison mixture was obtained for approximately $1 at current prices. The molasses used was cattle molasses, obtained at a beet-sugar factory for about 5 cents a gallon. Alfalfa meal has such swelling power when plenty of water is added that the 15 pounds makes approximately the same amount of poison mixture as 25 pounds of bran.

It has been found that in warm climates, such as that of California, the poisoned baits prepared with alfalfa meal must be used almost immediately, as they sour if kept until the following day. Another objectionable feature is that the meal is usually so finely ground that it can not be distributed without considerable waste by the use of an end-gate grain seeder, such as is employed in some portions of the country in distributing the bait.

The greatly lessened expense of fighting grasshoppers by the use of the alfalfa-meal mixture induced many Nebraska farmers to combat the pest much more energetically than they would have done if the more expensive bran-mash formula had been used.

ERADICATE RODENTS

In summarizing ways and means of eradicating rats and mice a specialist of the United States department of agriculture in a publication recently issued says.

By requiring that all new buildings, wharves and other structures be ratproof; that existing buildings of ratproof construction be further protected by having basement windows and drains covered with screens, gratings, etc.; and that exisiting buildings that are not rat proof be made so by remodelling.

By constructing sewers and drains that they will not provide entrance and retreat for rats.

By insisting on greater cleanliness about markets, stores, and generally throughout cities, villages, and the country districts.

By threshing and marketing grain early so that stacks will not furnish harboring places and food for rats.

By removing piles of straw, trash and lumber which harbor rats in fields and vacant lots.

By protecting the hawks, owls and other natural enemies of rats which are not so destructive to poultry as rats themselves.

By keeping well-trained rat dogs on farms and about city warehouses.

By keeping provisions which rats and mice will attack, in rat proof and mouse proof containers.

By destroying rats and mice systematically by poisoning, trapping, and by organized systematic hunts.

By arousing public opinion to the realization of the importance of exterminating rats and mice.

OPPORTUNITY

"Master of human destinies am I
Fame, love, and fortune on my footsteps wait.
Cities and fields I walk; I penertate
Deserts and seas remote, and passing by
Hovel and mart and palace—soon or late
I knock unbidden once at every gate!
If sleeping, wake—if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death; but those who doubt or hesitate,
Condemned to failure, penury and woe,
Seek me in vain and uselessly implore.
I answer not, and I return no more!"

—John James Ingalls

Good crops are brave promises to the Allies.

The Farmers Market Place

This registered Jersey calf will make the very best kind of sire for a herd where production and quality is aimed at.

The udder on his two-year-old mother speaks for her quality.

She is from the famous Torono bull, whose sire is the Hood's Farm Torono, who has more register of merritt daughters than any living sire.

The calf's father is out of the Pogis bull, whose father is the sire of two world's champion cows.

On the mother's side the calf's grandmother is a heavy producer with a test of 6.1 per cent butter fat.

The gread-grandmother is high in butter-fat and has a record of 40 pounds of milk per day for 30 days, and has many daughters of similar high production.

On both sides then the ancestry is so good that one can be positively sure of good results in the offspring of this calf.

He is worth $75.00 now and will increase in value each month.

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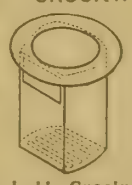
A simple portable stove. Take off one lid sit in your stove or range (see cuts) giving you two holes to cook on. A great time, heat and fuel saver. Price $5.00 prepaid. Pays for itself in a short time. Write for folder. Agents wanted. Hooverise. Save coal for the War.
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A home like place for local people where you will meet friends.
Good Rooms 75c, $1 and up.
The Windsor Hotel Co.
M. A. Scott.

HUMAN FOOD FROM AN ACRE

Nearly every one knows that a great deal more human food can be realized from a given area devoted to grain and other crops by consuming those products direct, instead of in the form of meats. This is the reason meat is very little in evidence in over-populated countries like China, Japan and India. Long before the population of the world ever increases to a point where food is really the limiting factor, meat will have practically disappeared, and the entire human race will have become vegetarians.

Most interesting figures on the comparative amounts of food which can be delivered to the dining table from the various products of an acre of average farm land under average conditions are contained in Farmers' Bulletin No. 877, recently issued by the Department of Agriculture.

This bulletin is designed to give an acre-for-acre comparison of the food value of different crops and animal products. It shows that corn, on a given area, will produce more human food than any other crop commonly grown on American farms. This crop heads the list in units of energy produced per acre, and is ahead of all other crops except navy beans and soy beans in tissue-building material. In the latter element soy beans for outclass all other crops, showing nearly twice a much protein per acre as navy beans, which rank second in this regard.

It shows that the dairy cow is the most efficient of farm animals in the production of human food (milk) and that the hog is the most efficient in the conversion of grain into meat, producing five times as much per acre of crops as does any other animal.

The bulletin is not designed as a guide for the planning of farm operations; that is a matter to be determined by local environment, equipment and general conditions.

The following figures show the acre-for-acre comparisons:

Products or animals	Yield in bushels	Total calories
Corn	35	3,124,240
Sweet pot	110	2,851,200
Irish pot	100	1,908,000
Rye	20	1,807,200
Wheat	20	1,788,000
Rice	40	1,684,840
Soy Beans	16	1,534,000
Peanuts	34	1,265,018
Oats	35	1,254,400
Beans	14	1,123,080
Cow Peas	10	852,600
Buckwheat	24	751,800
Milk, lbs.	2,190	711,750
Cheese, lbs.	219	427,050
Butter, lbs.	98.5	355,273
Pork, lbs.	273	672,945
Mutton, lbs.	113	137,295
Beef, lbs.	125	130,000
Poultry, lbs.	171	178,695
Eggs, lbs.	185.6	132,192

The calorie, or unit of heat energy, is the amount of heat required to raise the temperature of 1 kilogram (2.2 pounds) of water 1 centigrade degree (—1.8 Fahrenheit degrees). When food is assimilated it undergoes chemical changes in the body which render the energy it contains available for the production of heat and energy. The number of calories produced per acre is a measure of the relative value of the arce product for the production of heat and muscular energy.

CERTIFICATES FOR GRAIN-SAVING THRESHERMEN

In recognition of pledges by patriotic threshermen to assist in preventing waste of grain during harvest and threshing operations, the U. S. Food Administration is now issuing membership certificates to those enrolled in this important conservation measure. Under this plan every thresherman will have an opportunity to take his place alongside other patriotic men who have put their business on an efficient war basis and are thus supporting the efforts of the Government and the boys at the front to speedily win the war.

To secure one of these certificates, which is attractively printed in two colors and is suitable for posting on a threshing machine or for framing, a thresherman signs this pledge:

"In order to be of service to my country in this time of need, particularly in its effort to avoid unnecessary waste of grain during harvest operations, I hereby accept membership in the United States Food Administration, pledging myself and such of my help as can be influenced insofar as my circumstances permit, to operate my threshing machine, so as to reduce the wastage of grain, and will go to my County Grain Threshing Committee for assistance in the difficulties I may experience, before permitting unnecessary wasteage to occur."

Pledge Cards containing the foregoing text are now being sent to all threshermen whose names and addresses are known by the Food Administration. It is believed, however, that the list is far from complete. Consequently, any threshing machine operator who has not received a blank Grain Thresherman's Pledge Card is expected to apply for one immediately to the federal food administrator of his state either direct or through his county food administrator.

As soon as the signed pledge is received, the certificate of membership in the Food Administration is issued. A cordial invitation is extended all threshermen to enroll in this important work to help save the grain that farmers have so patriotically produced and which is now such a vital part in the world's food situation.

With the certificate goes the friendly desire of the Food Administration to aid in every possible way this work of conservation at its source. Such assistance has already taken the form of information on international food conditions, offers of mechanical aid by experts and arranging through other branches of the Government for fuel, labor and other essentials.

I WILL

I will start anew this morning with a higher, fairer creed,
I will cease to stand complaining of my ruthless neighbor's greed;
I will cease to sit ripining while my duty's call is clear;
I will waste no moment whining and my heart shall know no fear.
I will look sometimes about me for the things that merit praise;
I will search for hidden beauties that elude the grumbler's gaze;
I will try and find contentment in the paths that I must tread,
I will cease to have resentment when another moves ahead.
I will not be swayed by envy when my rival's strength is shown;
I will not deny his merit; I will strive to prove my own;
I will try to see the beauty spread before me, rain or shine—
I will cease to preach your duty and be more concerned with mine.

—S. E. Kiser.

Name your farm and adopt a trade mark for your goods.

Send in your orders for Butter Wrappers. $3.00 per thousand.

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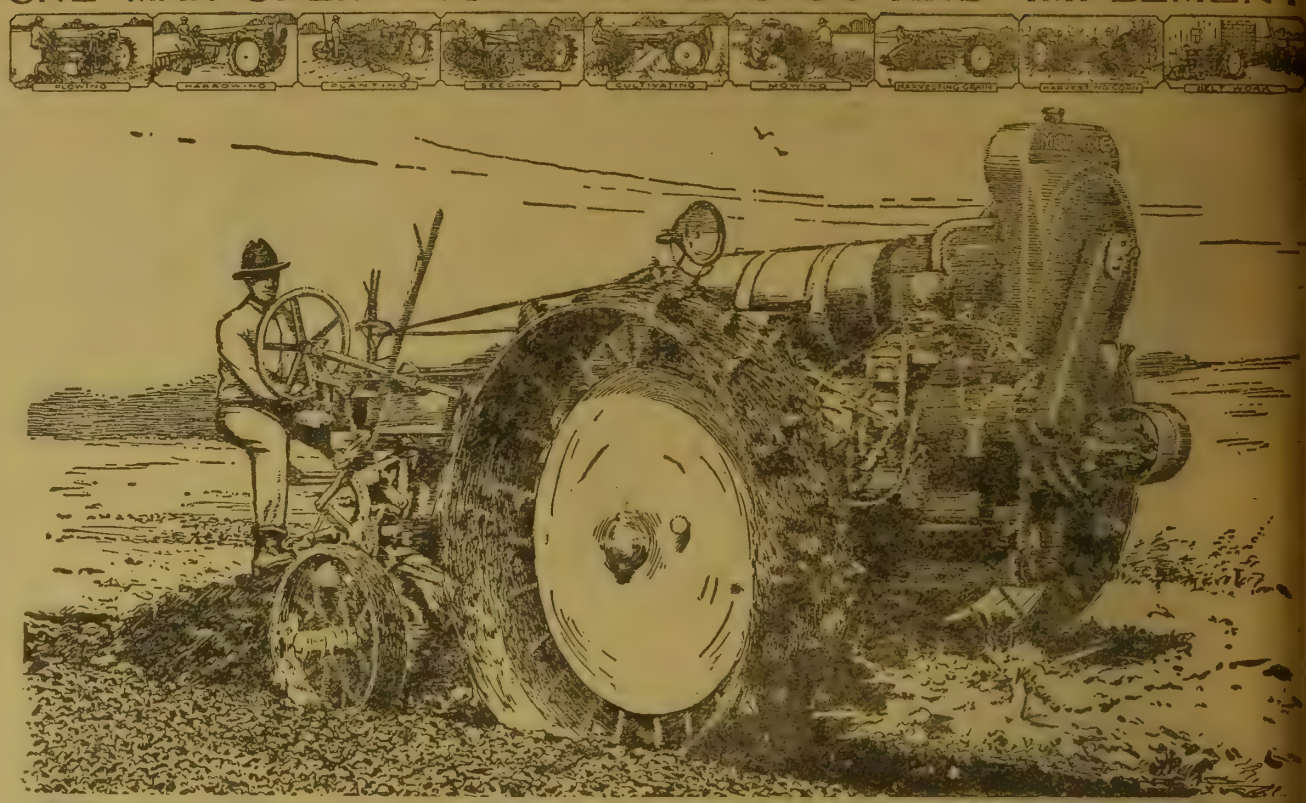

More Speed-More Power-More Work

EVERY farmer who sees the new Moline-Universal Model D plowing is astonished at its speed, the splendid quality of work and the ease at which it operates. After seeing the Moline-Universal work, you will realize that the number of plows pulled is less important than the amount of work accomplished.

Great Capacity for Work

Speed, power and light weight are combined in the new Moline-Universal tractor to a remarkable degree.. As a result, under any ordinary plowing conditions, the Moline-Universal pulling 2 plows at 3½ m.p.h. will plow 9 acres in a 10-hour day—equal to a 3-plow tractor traveling 2¼ m.p.h., the usual tractor speed. Thus the Moline-Universal gives you large capacity for heavy work, ample power for all belt work on the average farm, with these distinct advantages over other tractors—light weight; greater economy and ease of operation; ability to do all farm work, including cultivating, and ONE-MAN control of both tractor and implement from the seat of the implement, where he must sit in order to do good work.

Does Better Plowing

An advantage of speed plowing is the better quality of the work. With properly shaped moldboards and the Moline-Universal tractor plowing at 3½ m.p.h. the soil is more thoroughly pulverized and compacted than at slower speeds. It is left in such a level and fine condition that furrow marks are hard to distinguish.

Positive Reliability

And keep this in mind always—the Moline-Universal is built for positive reliability.. The powerful 4-cylinder, overhead-valve, vibrationless engine delivers full 9 h.p. at drawbar and 18 h.p. on belt; unusually large bearings lubricated under 35 lbs. pressure; Remy electric starting, lighting and ignition system with governor generator; all moving parts completely enclosed; 15 Hyatt roller bearings; 5 adjustable ball thrust bearings; 7 splined shafts; differential lock; heat treated and steel cut gears—these give "positive reliability" and make the new Moline-Universal the best tractor money can buy.

Self Starter and Electric Lights

Self starter relieves the back breaking strain of cranking, makes tractor operation easy for non-robust help. In fact many women and boys are successfully running Moline-Universal tractors. The self starter is a feature every operator will appreciate. Electric lights increase the working capacity of the Moline-Universal so that you can use the tractor night and day in the busy season. It gives you an emergency power always available to make up for any unavoidable delays.

Free Tractor Catalog

Your copy of our new tractor catalog which completely describes the Moline-Universal Model D is now ready. A postal will bring it to you, also the name of your nearest dealer. Address Dept. 33

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Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 50 JULY 13, 1912

Making and Stacking Alfalfa Hay

Written for Utah Farmer by R. E. Miller.

The making of good alfalfa hay is a task that requires much work and good judgement. The grower must cut it at the right time, must rake and pile, to get best results, so as to save the leaves and cure in a way that it will not spoil in stacking. Modern labor saving haying tools helps to reduce the amount of hand labor but even then the work is such that it must be done while the heat of summer is oppressive.

There is also a good deal of anxiety connected with it, for at best a considerable degree of skill and judgment is required to make and secure hay in good condition so as to give best results as feed in winter. Then the weather conditions may reduce the quality and consequent value for food or commercial purposes.

Just the drying of any grass or alfalfa does not mean the making of hay. It may dry up before it is cut and be very undesirable as feed with little nourishment in it.

As alfalfa is a food for stock which is nearly perfect in itself the hay made from alfalfa cut when it is at its best and dried, or more properly speaking cured, so as to retain all the essential constituents of it with only the loss of water during the process of making, is the hay that is not only most palatable but most profitable as feed.

One successful alfalfa grower was asked when to cut alfalfa and he answered in this way "are you going to sell your hay or are you going to feed it?" He afterwards explained that the tonnage might

(Continued on page 15)

SUGAR BEETS

SUGAR AFTER THE WAR

Our greatest problem just now, and, probably for many months yet to come, is the winning of the war. While we are developing on every resource that will contribute toward a speedy victory, it is fitting that some thought shall be given to the conditions that are likely to prevail following the war.

Those who have made analytical study have concluded that the large manufacturing centers, particularly those that have developed or expanded to take care of war requirements will be brought face to face with a readjustment of business that will be not easily met. Agricultural industries or those closely associated with food production in all lines, will suffer least. There are many reasons to believe that there will continue, probably for several years, good prices for most agricultural products. Production costs will continue to be high and much thought and skill must be devoted to crop production hereafter, in order that the producer will have a margin of profit, even though good prices do prevail.

The following article which is republished from one of the leading sugar journals is illuminating and is of interest to this region because this district is a large factor in our domestic sugar production. Economical production must have the attention of every beet grower. The mechanical harvester which has been developed during our stress of war must be brought into general use and thus aid in meeting the economics involved in profitably producing a crop which involves a considerable amount of hand labor. Mechanical equipment for all other crops has reduced production costs and it is entirely possible to adapt machinery with profit in producing a crop of sugar beets.

Another economic factor that must continue to have greater attention is the siloing of beet tops and thus make them more valuable. Many growers feel that is entirely possible to get a value out of the beet tops, when siloed and fed, equal to all hand labor costs and more.

The article referred to follows:

"At the present time the thoughts of sugar producers are largely concentrated on the conditions as regards sugar which will prevail after the war. The difficulty of prognosis is naturally enormous, and much will depend upon the fiscal conditions which will follow the declaration of peace. The question very largely hinges on the future of European beet. In every European beet-growing country there has been an industrial upheaval, with a reduction of sugar crops, due partly to want of labor, partly to the destruction of sugar factories, but mainly to the necessity for the cultivation of other provisions. The points to be considered are, Will the pre-war crops be again realized? Will they be extended?

"The chief European sugar-producing countries are Germany, Austria, Russia and France. In the first two of these the pre-war factories remain standing, in the latter it may be expected that a good many of those in Poland had been destroyed, while we know that French factories have been sacrificed.

"Germany, with its great powers of output, naturally occupies an important place in the consideration of the subject. Labor will inevitably be scarce, the utilization of women for labor purposes hardly making up for the scarcity of men. On the other hand Germany will strain all her industrial powers to produce sugar for her own purposes, and will endeavor to export sugar for the purpose of bringing grist to the mill in the shape of money into the country. This opens up a further question. With the world in arms against her, will she be able to export sugar at anything but a ruinous figure, except in the remote contingency that peace will enable her to make such terms as will place her produce on the Allies' markets on equal footing with the produce of the Allies. Without venturing to prophesy, it looks as if this will not be the case, in which event it may be taken that Germany will not export sugar from the Continent, as she did before the war, Austria will be in the same position as Germany, and her exports are not likely to extend beyond supplying comparatively small Eastern demands.

"The future position of the Russian sugar industry is very doubtful. If Germany acquires the commercial control of that country it is quite possible that she will discourage the production of sugar in Russia beyond a certain extent, with the view of providing a favorable market for her own surplus sugar. The Government cost of production is far below that of Russia, and duty-free German damper to the Russian industry. The other European beet-growing countries will probably return to their previous output, but in no case will their excess sugar be an important asset in the world's market. There may be a certain amount of beet sugar grown in the United Kingdom.

"The other large beet-producing country is the United States. Here the output will certainly be increased.

"It may be taken, therefore, that the post-war production of beet sugar available for the world's supply will be much less than before the war for many years at least, and if cane sugar production goes ahead permanently it is not likely to recover its lost position.

"Turning to cane producing countries, a prime factor in supply will be, as it now is, Cuba. It is not likely, however, that the output of that country will ever much exceed 3½ or 4 million tons. Transport and labor trouble will probably make this the economic limit. As the American beet sugar industry increases in volume, there will be a smaller market in the United States for Cuban sugar, the increasing excess being thrown on the world's market. It must be remembered that Cuba is in the circle of the Allies, and will receive preferential treatment in Great Britain, the great market for the world's sugar, if any preference is given at all in her customs tariff to the produce of the Allies.

"Louisiana, Hawaii and Porto Rico have reached their limit, but the Philippines may be looked upon as likely to increase their output, and the same may be said of Formosa.

"There is no indication of a change in amount of production in the Argentine and the Brazils. The Venezuelan industry may develop.

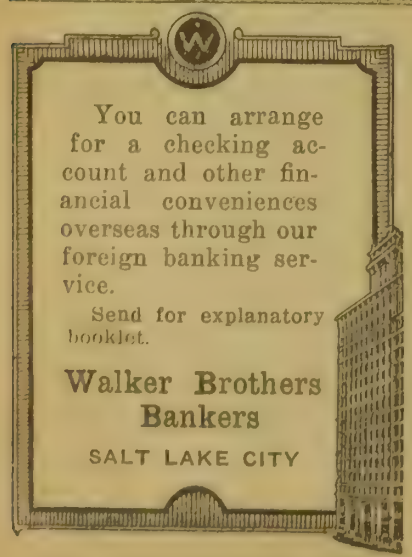
"Java, the great sugar-producing centre of the East, is fast approaching her maximum of output, and is not likely to produce more than 1¾ million tons at the most.

"India has large possibilities in the shape of sugar production, but is a large importer and does not seem, for some internal cause, to be able to extend her sugar output.

"The future of sugar in China has also to be reckoned in the calculation. There are signs that the Chinese are giving their serious attention to its production, and if they only increase their production to the extent of their imports, the extra amount will be an important item in the world's production.

"The supply from the British Empire will depend largely upon the treatment accorded sugar in the Customs tariff of the Empire. To supply its wants, basing consumption on the prewar figure, 5½ million tons are required. It now produces 3½ million, and is capable of turning out 7 or 8 millions.

"Taking all things into consideration, it is evident that there will be a scarcity of sugar for some time after the war. How long this will continue depends to a great extent on the fiscal policy of the British Empire. But no matter what this be the survival will be with those producers who can produce most cheaply. The industrial revival after the war will be stupendous, and those estates' proprietors who look to continus sugar production should at once place orders with our sugar engineers for machinery to bring their factories up-to-date, so that there may be no time lost when the sugar machinery makers are released from their war obligations. It will not be the slightest use depending upon a favorable tariff treatment to make up for inefficient agricultural or manufacturing methods. Preference or no preference, only the fittest will survive, and the fittest will be the producers who are best equipped for survival in the way of low cost of output."



BATTERY TROUBLES IN ENGINES.

The batteries are a very fruitful source of trouble for many engine operators. If the engine will not start or stops soon after starting or will not pick up speed the cause may be in the spark. A weak spark gives very slow combustion and often fails to ignite the charge. A weak spark may be due to a loose connection, worn out batteries, "frozen up" batteries or a short circuit. Loosen the wire from the stationary electrode and scratch the movable electrode with it. If a bright purple spark is increase buy our potassium and phosnot produced, look for the above troubles.

Examine all connections including those at the switch and at the ignitor. The switch itself should not be loose but work tight. While the wire may be touching, and thus give a spark, there is a loss if all connections are not tight.

Worn out batteries cause trouble by weakening the spark. Usually it is only one or two cells that are worn out. A worn out cell not only does not help but actually hinders by cutting down the average strength of the series. In order to get full use of each cell an Ammeter (battery tester) should be used. A good one may be purchased for one dollar and it will relieve all doubt as to the strength of cells and save its cost in a year or two. Cells testing less than 5 amperes are of very little value, tho they may be used in case of emergency. Such weak cells often show a tendency to become exhausted in a short time but recuperate after a rest, thus confusing the operator. The engine starts but will not continue to run. It is not necessary to test for voltage as this is not perceptibly lowered by use.

Cold retards the action within the cell, so that little or no current is given off. Hence the batteries are said to be "frozen up."

Batteries that are standing out in cold weather should be thoroughly warmed before starting the engine.

A short circuit may occur at any point where the two wires come in contact with each other or the frame of the engine, provided the insulation is not perfect. In the battery box a short circuit often occurs by the cells rattling around until two zincs come into contact. It may also occur thru careless connecting of cells. Such a short circuit will not only reduce the strength of the spark but if allowed to continue, will soon wear out the cells affected. Cells should be packed into box with paper, rags, straw or cotton waste to keep them firmly in place.—E. R. Gross.

WHERE HE BELONGED

At the close of a revival service held by the colored brethren at their Methodist church, the pastor called on all those who belonged to the army of the Lord to stand.

A stranger near the front promptly sprang to his feet.

The paster moved around to the stranger's side and said: "You say you b'longs to de Army o' de Lord, Brudder?"

"Yas—sir," replied the stranger. "I b'longs to de Baptist division of de Army o' de Lord."

"Pshaw, nigger," came from the pastor's lips, "you don't b'long to de army; you b'longs to de navy."

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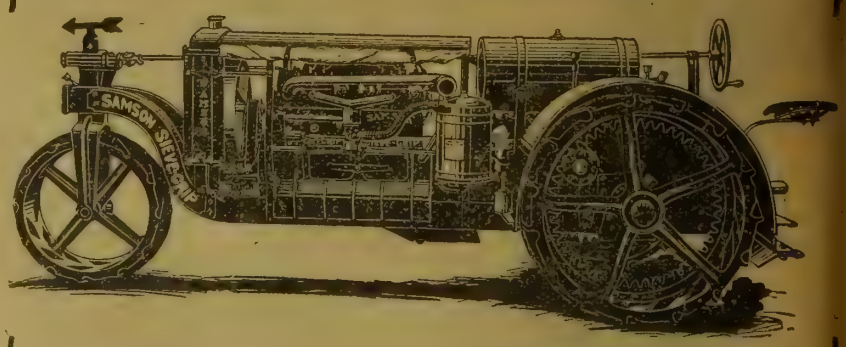

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Utah Implement-Vehicle Co.
SALT LAKE CITY, UTAH.

ESTABLISHED 1904 — PUBLISHED EVERY SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

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ONE DOLLAR A YEAR — FOREIGN SUBSCRIPTION $1.50

VOLUME XIV. LEHI, UTAH, SATURDAY, JULY 13, 1918 No. 50

Livestock and The Orchard

Prof. L. J. Iddings, University of Idaho.

There has been in Western agricultural practice a strong tendency for several years toward specialization. In so far as this has meant for more intensive methods and for greater intelligence and skill devoted to the production of special crops or special farm products, the movement has been worthy of high commendation. Weaknesses have been found in the system, however, and the trend of today is away from extreme specialization and toward diversification in the handling of the Western agricultural farm holdings.

A fundamental difficulty for the man of limited means in any plan of high specialization is that he does not, and probably cannot afford to prepare himself for a season of loss. It is not always entirely well with a specialty. Whether it is with the cereals or the forage crops of the field or the crops of the orchard, there comes a season when conditions are unfavorable and the income is small. With the fruit grower, furthermore, there may be the problem of the orchard not yet in bearing and diversification offers at least part solution for the problem of maintaining the family until the orchard is of bearing age. Diversification, therefore, does not run counter to the best interests of the fruit grower, but on the other hand, assists in increasing his income and in staving over certain periods when the orchard is young or when, for some reason, it does not yield in abundance. A modern slogan that is now quite popular in the agricultural field is the warning not to put all the eggs in one basket.

There are four direct reasons why the orchardists should be able to find a use for livestock in connection with his main business, which is that of fruit production. In the first place the livestock furnishes an additional source of income and often contributes directly to the support of the family by furnishing animal products for home consumption. Second, livestock may be made to furnish a market for many of the crops grown by the orchardist between the rows of trees. Some of the crops, such as legumes, corn, grains of various kinds, can, as a rule, be most profitably marketed through livestock. Third, the orchardist needs livestock for the purpose of maintaining soil fertility. We find that more and more fruit men are giving consideration to the question of fertilization and we all recognize that one of the cheapest and most efficient means of maintaining the soil is the best possible physical condition for maximum production is thorugh the use of farm manures secured through livestock keeping. There is a fourth reason why the orchardist should at this particular time think seriously of livestock production. This is because the leaders of the American government today are calling for more animals and more animal products. The larger share by far of the needs of the nation in this direction will, of course, be taken care of on the ranges and on the farms. The fruit grower, however, can aid materially in this direction, and if a few head of livestock were kept on the average fruit farm of the West the sum total would be of real assistance in meeting the present-day needs of America.

Granted that livestock keeping is feasible, we may immediately consider the kinds of livestock that are best adapted to the fruit farm. A few horses will always be kept, but many orchardists question the advisability of trying to breed horses in connection with an orchard plant. Beef cattle are produced most successfully and profitably where there is ample room and cheap grass. In a similar way sheep have, in past years, been regarded as bettter adapted to cheaper lands that are devoted largely to grazing purposes. In the past two or three years, however, hundreds of small flocks of sheep have been bought by the farmer and it will only be a short time, if the present tendency pervails, when sheep on the Western farms will be as common as they have for years been on the farms of Ohio and Indiana. There is a possibility of using a small band of sheep in connection with the orchard. For the average man engaged in fruit growing, however, the dairy cow and the brood sow lend themselves better to his needs. These two classes of animals fit well together on the farm and make a splendid combination for use in connection with the orchard.

Those who are keeping in touch with dairy conditions of today feel that the time is not far distant when dairymen are to be paid well for their work in producing milk and butter fat. Prices have not been adequate and the dairyman has been losing money for many months. The result has been the selling of a large number of dairy cattle and we will unquestionably soon be face to face with a condition in regard to milk and butter-fat production that will mean one of two things—the dairyman will be well paid or the consumer will do without dairy products. I am familiar with one of the well-known irrigated districts of the West where many of the farmers have made a specialty of dairying. Two of the very best herds of that tract that have been tested and have a wide reputation for high production are now offered for sale. When the best of dairymen are thinking of quitting the business it is well for us to think seriously of the future. It is my opinion, confirmed by many experienced men with whom I have talked, that now is a mighty good time to get into the dairy business. Good cattle are being sold in many sections at quite reasonable prices and, as before indicated, there can be no other outcome than such prices for dairy products of all kinds as will enable the dairyman to meet all costs of keeping the herd and have a reasonable profit for his efforts.

In the orchard may be produced corn, peas and oats, and other crops for silage. The production of legume hays such as clover and alfalfa fit in well with the fertilization of the orchard and give the orchard dairymen the very best roughages for milk production. If the silo is not advisable, root crops can be grown between the tree rows to wonderful advantage.

(Continued on page 10)

DAIRYING

WHAT IS A GOOD DAIRY COW?

A. C. Palmer.

Never before was the question of "What is a Good Dairy Cow" so vitally important. Never before did so much depend upon the owner knowing to a certainty whether his cows were paying him a profit, or if he is paying for the privilege of having them around him. The main items in figurnig the cost of keeping a dairy cow, in the reverse order of their importance, are: Bedding, breeding service, taxes on cow, medicine, disinfectants, veterinary service, interest on investment, depreciation, feed, labor. When we get these items figured we can have a fairly good idea of what it costs to keep the ordinary cow.

The Purdue Experiment Station at Lafayette, Ind., and the Storrs Agricultural Experiment Station at Storrs, Conn., in conducting tests of dairy cows covering periods of years, have compiled a series of fixed charges for each of the items listed. In some cases they are doubtless higher than the cost to the average farmer, but they do furnish a good basis for arriving at each dairyman's cost.

Cost of Bedding, Breeding, and Taxes

As an example, the Storrs Station places the cost of bedding at $5.00 a year. This is surely higher than the average cost to the ordinary farmer, who uses waste litter, leaves, etc., and who allows his cows to stay outside six months in the year. So its seems to me $2.00 a year should fully cover the bedding charge.

The cost of breeding we can fix pretty definitely for the ordinary farmer, unfortunately. On the general farm this fee is usually $1.00, sometimes $2.00, and seldom as high as $5.00. The figure of $2.00 would doubtless be near the average paid. It should be more, and it is a pity it isn't more—a pity the available service doesn't deserve a higher fee, but it doesn't.

Taxes on the cow alone, which is giving her a fair show, surely, figured at $2.50 on an assessed valuation of $60, would make this charge $1.50, which is the way cows are assessed in the writer's community.

The Storrs Station fixes the charge for medicine, veterinary service, etc., at $5.00 a year. Likely this is too high for the ordinary farmer. Still, if one considers the medicated stock foods, salts, liniments, and veterinary calls, it is doubtful if he gets by for less. However, let's be fair to old Bossy, and make it more reasonable, calling this $3.00.

Then there is interest on money invested in the cow and equipment. If a barn costs $2,000 to build, which is about the cost of the average farmer's barn, and 8 cows and 4 horses with other smaller stock are kept, approximately one-twentieth of this money invested is chargeable to each cow. One-twentieth, or $100, may therefore be fairly figured as representing the building investment for each cow, which added to $100 the price fair cows are selling at now, makes an investment of $200 in the cow and her shelter. At least 4 per cent net can be obtained—in Liberty Bonds—and the cow must pay this back, else the money is better invested here. Thus, here is $8.00 more against the cow.

To determine the depreciation of a dairy cow, we can approximate the length of her profitable service as not over ten years, and this on an investment of $100 makes the depreciation charge $10 a year.

Adding these items, we have a total of $26.50, which a common cow must return in milk before she even starts paying a thing for her feed and care, to say nothing of a profit.

Changing this into terms of milk and butterfat, we find that she must give 1,475 lbs. of 4 per cent milk with butterfat at 45 cents to pay for these fixed charges.

The Feed Charges.

Then we come to the matter of feed, and the way to tell the number of sets of figures for feed charges is to refer to the government census of cow owners. Every dairyman has his own ideas.

Of course the charge for feed is a varying one. It must increase with increased milk production and vice versa. From my experience, I should judge that the ordinary farm cow—outside of a dozen exceptional dairy counties in America—will not average over 16 pounds of 4 per cent milk a day. I really imagine this is very near the top production, instead of the average. I know that right now nine-tenths of the cows are producing far less than 16 pounds a day. But we will be liberal with the ordinary dairy cow and give her the benefit of the doubt here.

A cow producing an average of 16 lbs. of 4 per cent milk for 300 days will produce 4,800 pounds of milk, and 192 pounds of butterfat in a year. A few years ago Purdue University conducted some tests and a cow producing 193 pounds of butterfat cost $26.71 to feed for a year. That was figured when cottonseed meal was $28, clover hay $12, bran $24, brewers grain $30, and pasture at $1.50 a month. The prices of feed are at least $100 per cent higher now, so that the cost of feed for such a cow would be at least $53.00.

Add this to the fixed overhead charge of $26.50, and we have a total of $79.50 for the cost of feeding the average cow and paying her overhead expense for one year. With butterfat at 45c, she would then have to give 176 pounds of butterfat to pay her way this far.

Purdue figured that it was worth at least 10c a day to take care of a cow, and that was when labor could be obtained for $20 to $25 a month and board. Now surely 15c a day is not too much to figure one man's time for feeding, milking, bedding, breeding, cleaning stables, hauling manure, and doctoring a cow for one year. That is $54.75 for caring for a cow 365 days, which she must pay if the owner intends to get paid as much for his time as he could get by hiring out to his neighbor. Adding this to our previous total of $79.50, we have a total of $133.25, which covers the entire cost of feed and care for a 192-lb. milch cow for one year.

Credits of the Cow.

The things of value a cow contributes to offset this charge are: manure, skimmilk, butterfat.

Purdue figured that the manure of one cow is worth $10 when applied to the ground. In the light of present fertilizer prices, this could fairly be valued at $15.00 now.

Butterfat will not average over 45c for the year, and 192 pounds will therefore bring $86.40.

Skimmilk is worth 50c per hundred pounds when fed to stock that needs protein feed. A cow giving 192 lbs. of fat in 4 per cent milk will give 4,800 pounds of milk in a year. In selling the cream, the farmer will include approximately 500 pounds of milk, leaving 4,300 pounds to feed. At $1 per hundred, this $43 to place to Bossy's credit.

This credit for skimmilk, however, may easily be illusionary. The dairyman must be able to use every pound to advantage, otherwise he will not be able to get full value of 1 cent a pound for it. Also, this amount of skimmilk will be considerably reduced if the 192-pound cow gives 5 per cent milk instead of 4 per cent In this instance, he would have but 3,850 pounds, which, after deducting the milk sold, would leave but $33.50, and consequently $9.50 less than the 4 per cent cow.

You Need a Magnifying Glass

to see the seams and pores of an axle. They're too small to see but they're big enough to cause friction trouble. Use

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These credits: Manure, $15; butterfat, $86.40; and skimmilk, $43; make a total credit of $144.40. Comparing this with the charge for feed and care, $135.25, we find a theoretical profit of $9.15, which the average cow has brought in one year. This is so much theory, however, and so much depends upon each individual cow, her milk test, the individual overhead, etc., that it would doubtless be best to assume that no cow begins to pay a profit that produces less than 190 to 200 pounds of butterfat in the year. Up to this point the cow barely breaks even.

Here we have not valued a calf as a credit for the cow. Some consider a price when the calf is three days old, say $3 or $4, as being fair to place on the credit side. But any price obtainable at this age is so problematical, and if kept longer the calf becomes an expense, that it seems best to simply leave the calf out of the question.

A cow giving 4,800 pounds of milk must average approximately two gallons a day. If she gives less towards the end of her lactation period, as of course she will, she must give more at its start. She must average the full amount to pay her way. That should be the dead line, figuratively and literally speaking. Any cow giving less is living off the sweat of her owner.

Bear in mind, too, that the farmer who keeps a herd of cows simply averaging 180 to 200 pounds of butterfat is taking care of them at a hired man's wages—nothing more. All his worry and risk and business ability go for absolutely nothing, if that is all he gets. If he would insist upon a sure profit, he should move his dead line forward steadily until he has reached the 250- to 300-pound mark.

How to build up his herd to that mark is another problem—a whole bunch of them. But the worst mistake any dairyman could make would be to sell off every one of his cows and attempt to maintain the 250-pound average with what he considers better cows. The improvement must come as much with the dairyman as with his cows. As much lies in the ability of the dairyman, the quantity and quality of the feed, and the nature of the care given, as in quality of breed. In other words, the dairyman would be foolish to brand every cow producing less than 200 pounds a boarder cow until he knew she had had a fair deal in feed and care. Many could do little better with Eminent's Bess or Pontiac Clothilde DeKol than they are doing right now with Old Red and Old Spec, if they would give them a breakfast of fodder and bran washed down with ice cold water from a creek a quarter of a mile away through snow and winter winds.

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MAKING SWEET CREAM BUTTER

W. H. Underwood.

The production of sweet cream butter possesses several advantages not found in making ordinary ripened cream butter. In the first place the quality and flavor of the product are practcally uniform from day to day There is none of the danger of producing variable flavors by not ripening all the cream to the same degree of acidity before churning. Uniformity of quality is one of the most desirable points of any dairy product.

Second, the cream is churned while it is sweet and fresh, and thus all foreign and bad odors which might otherwise be developed are avoided. The butter also posses better keeping qualities than ripened cream butter and there is less development of undesirable especially rancid flavors while the butter is being held for future use. The saving in time in making sweet cream butter is considerable, for there is no waiting for the cream to develop the required amount of acidity, and if the proper control and attention to details are given to the process the amount of butterfat lost in the buttermilk need not be greater than that loss in the buttermilk by the usual methods of making ripened cream butter.

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HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N.Y.

For making sweet cream butter cream should be skimmed that contains from 30 to 40 per cent of butterfat. Such cream will churn without difficulty at the required temperature. It also will be less likely to sour or to develop undesirable flavors if for any reason it cannot be churned at the expected time and has to be held over a time. That the cream must be from clean sweet milk is obvious. It is important to carefully guard against taints of all kinds.

The cream is cooled as soon as possible after separation. The temperature to which to cool will depend upon how soon the churning is to take place. For immediate churning 40 to 45 degrees will give the best results, but if three or four hours must elapse before the churning can be commenced 48 to 50 degrees will be all right provided that the cream is held at this temperature until churned. If held at too low a temperature for several hours the butterfat will become so hard that churning will be difficult or long delayed.

In order to give a more distinctive flavor and aroma to the butter a "starter" or sour skimmilk is added to the cream just before beginning to churn. The use of a starter is not necessary, but it will give a finer and more pleasing flavor to the butter, especially if the quality of the cream is not as good as it ought to be. The cold cream is placed in the churn, which has been well rinsed out with cold water and the starter added. As a rule 20 per cent of starter will be sufficient for summer use and 25 to 30 per cent for winter use. If desired a small amount of butter color may be added at this time.

The churning is then begun and continued until the butter granules are about half the size of grains of wheat or rice or a little larger. The will require about 45 minutes churning according to the richness of the cream, the season of the year and the temperature. Care must be exercised not to overchurn the butter. If the granules are too large too much water and curd will be incorporated, thus lessening the keeping quality of the butter.

As soon as the churning is finished the buttermilk is drawn off through a

strainer and the butter allowed to drain. In most cases draining it for 10 minutes will be sufficient, after which water at 50 or 52 degrees equal in volume to the cream used is added. After revolving the churn a few times the water is drawn off and the butter again drained. Excessive washing must be avoided as it will remove the delicate flavor and aroma of the butter. The butter is salted to taste and worked in the same manner as ripened cream butter.

ARE YOU A BREEDER OR ONLY AN OWNER?

By Ben R. Eldredge.

I was looking today at a well-bred Jersey heifer that I have had under observation since last October. She is now about two years old and I have been asked to advise in regard to her purchase.

The dam of the heifer was a great producer, her sire one of the greatest bulls of the State. The heifer, though she had not had good care up to that time, was full of promise as a yearling. During last winter she ran with other neglected cattle to a straw stack. She received no attention whatever; all she got besides straw was a little refuse roughage thrown out from some cattle in an adjoining yard.

There was no shelter from storms, the buildings in the adjoining yards were some advantage as a wind break from the south and west winds. No protection of any kind against wind from the north.

Late in the fall it became apparent that the heifer had been bred in pasture when less than nine months old. A young bull had been carelessly left with the heifers.

Knowing of the fine breeding and prospective value of the heifer I made an opportunity in early winter of appealing to the owner in her behalf and urging him to give her better care. Carrying a calf and making her own growth demanded good feeding and some shelter, with at least ordinary care—but she never got it. When she was within a few days of calving she was put in a stanchion and was confined in the stanchion, when her calf came it died and was found dead when the owner got around to look after his cattle one morning.

In spite of this neglect she "came to her milk" and responded with a generous flow of milk at eighteen months of age and has now been milking several months. Recently she has had pasture.

Now, I was asked today to look at the heifer and advise a prospective purchaser as to a choice between her and another. The price asked is the same that could have been taken last November had the heifer not proven to be in calf so young, and on that account was then turned down by a cash buyer. Had she received the care she was entitled to she would today be salable at $350 and she is offered for a great deal less than that.

The man who owns this heifer and her dam may call himself a breeder but he isn't. He is just the fool owner of a few good cows that accident has placed in his possession.

Give him time and his neglect and indifference will knock all the quality and high value out of his herd—quality and value that the brains and energy of someone else has developed.

Some men are breeders, others are merly owners, and some are just owners by accident. What are you?

CARE OF UDDER AND TEATS

Simple Treatments of Common Ailments.

Whether it is a beef or dairy type of cow a healthy, well balanced udder is an important feature. Many men, overconfident of their ability to select good cows have passed poor judgement because they slighted this point of all points. Examine the udder carefully, milk the cow and satisfy yourself that the quarters of her udder are all healthy and working properly.

Comfortable stalls and standing platforms are an important factor in preventing injuries to the cow's udder and teats. Provide plenty of room for the cows to lie down and stand up without stepping on the teats or udder of the cow in the next stall. Build the platform long enough so that the cows can lie down without their udders hanging over the sharp edge of the planks or concrete. As a general rule the cork brick or creosoted paving block platforms afford good insurance to the cow's udders. At calving time put the cows in box stalls where they can step about, lie down and get up without bruising their udders.

One of the most frequent causes of caked and inflammed udders is too much feed of the wrong kind the few weeks before calving. If the feeder knows how to feed and care for dairy cows there is but little danger of udder troubles. When cows are fed heavy rations of grain right up to the time of parturition there often follows troublesome sieges of udder ailments. As a rule successful feeders prevent their cows from having caked and feverish udders at the time of calving by feeding and handling them in the right way. No harm will result from feeding liberal grain rations if the cows need it up to within two or three weeks of calving but after that time it is better to reduce the grain ration and feed more silage clover, hay and a little bran and linseed oilmeal. Even the rations of silage should be cut down one-half for a few days previous to calving, but hay should be fed liberally, all the cows will clean up. After calving, bran and small quantities of oilmeal may be fed in moderate quantities for a few days.

A warm bran mash with a few whole oats and a little oilmeal in it is one of the best feeds that can be given a cow shortly after calving, for these feeds tend to put her digestion in good condition. The bran is light and laxative, the oats are one of the best feeds to strengthen the reproductive system and the oilmeal is laxative. Such feeding gives better results than dosing and doping with epsom salts and linseed oil. Further, a pail of warm water, especially in cold weather, is very desirable for the cow's system is likely to be a little feverish at this time and demands water. In summer water from the water basins or stock tank may be used, but too much cold water should never be given a cow at the time of calving, as the chilling effect of the water is harmful.

All heavy milkers should have good care and proper attention should be given to the care of the udders immediately after calving. Manipulating the teats and udders with the hands and drawing the milk carefully is preferable to allowing the calf to nurse. Warm water is an excellent remedy for caked udders, and carbolated vaseline is one of the best remedies for sore and chapped teats. If the condition of the udder is not improved by bathing in warm water and manipulating it with the hands rub in some lanolin (wool fat with some belladona or camphor added. Keep the cow in a warm, well bedded stall and see that she is milked regularly and carefully, Unless the congestion is relieved promptly it is very apt to develop into more serious trouble and the loss of one or more quarters.

As the milk glands are under direct control of the nervous system it is always better to avoid any excitement or conditions which affect the nervous system and react upon the milk-producing glands. Any undue disturbance of the normal distribution of the nervous force will divert some of the blood supply from the milk glands to some of the other parts of the body and diminish the milk flow. The well known phenomenon of "not giving down" the milk is the result of nervous tone in the gland brought about by some sort of excitement. Unless the cow is comfortable and in perfect repose the secretion of milk will not take place normally. The lesson to be derived from this is that the cow should be treated with kindness and kept free from excitement.

An injury to the udder from a blow or a puncture by a snag is almost sure to prove serious unless prompt treatment is given. To prevent infection and reduce inflammation the writer has had good results from using tincture of iodine, followed with vaseline. The vaseline prevents the skin from becoming dry and cracking. The same have proven effective in treating wounds to the teats. For scratches or cases of chapped teats the use of carbolated vaseline is preferable especially when applied by the average dairy farmer.

Several cases of garget frequently result from neglecting to give the udders and teats proper attention. Dairy farmers should endeavor to prevent this infection from getting in their herds or spreading from one cow to another in case they have one or two cases. If you have suspicion that a new cow or any member of the herd is infected she should be isolated, milked by someone who does not milk any of the other cows and given good care. And be careful not to use a milking tube unless it is absolutely necessary, and see that the tube is properly sterilized and disinfected every time it is used. Many feeders get good results from feeding one-half ounce doses of hyposulphite of soda once or twice a day to a cow suffering from an infected udder. As a rule garget can be held in control by effective preventative measures. Give prompt attention to the cow the first time you notice anything wrong with her udder or teats—Successful Farming.

DEHORNING YOUNG CALVES

A simple and easy thought not always practicable method of dehorning is the use a caustic on the undeveloped horns when the calves are only a few days old. Either caustic soda or caustic potash may be used. These come in sticks about the size of a lead pencil and may be purchased at any drug store.

The main objection to this method of dehorning is that it requires too much attention on the part of the stockman. Calves, coming as they do in seasons when there is a rush to get crops either planted or harvested, are almost certain to be neglected and some will become too old for the use of the caustic. However, if the calves are kept in a pen or separated from their mothers a part of the time there should be no difficulty on this score. Another objection to the use of caustic is that more pains must be taken than is necessary in cutting off the horns with a saw or clippers. The method of using the caustic is very simple, however, and if a few precautions are observed no trouble should result.

To obtain the best results the operation should be performed when the calf is from 4 to 10 days old. At this age the knob or bud is only loosely attached to the skull and appears more as a part of the skin. The hair should be clipped off over and around the horns and vaseline applied around the edge of the hair. This is to prevent the caustic from spreading and causing a sore on the skin adjacent to the horn. The end of the stick of caustic is then slightly moistened and rubbed on each horn alternately three or four times, allowing it to dry each time before applying to the next. The stick should be wrapped in paper with one end exposed, as the custic will burn the hands if it gets on them. Extreme care should also be taken not to have the stock so wet that the solution from it will run down the side of the calf's head. Neither should the operation be done when there is a likelihood of rain in a few hours, unless the calves are to be kept under shelter, because the rain will wash the caustic down into the hair over face and possibly into the eyes, causing a severe burn and probaby loss of sight. When the caustic is properly used a scab will form over the bud and drop off within a few days.

When the operation is successfully performed with caustic potash it leaves the head in better shape than when done after with saw or clippers. This is especially desirable in heifer calves that are to be kept in the breeding herd.—Farmers' Bulletin 949.

CACHE VALLEY DAIRY IMPROVEMENT ASSOCIATION

L. H. Maxwell, Tester.

The keen interest which most men are taking in the work will undoubtedly make the Association work one of the most important factors in the dairy development in the Valley. Several cows have been sold for beef this month being considered unprofitable for the dairy. Again it has been found necessary to raise the standard of honor roll cows to a production of fifty pounds of butterfat in a month.

The Use of Green Manures

According to trials made, green crops turned under give, on an average, larger returns in the way of increased yield than do either commercial fertilizers or farm manure, when the green crop is followed by grain. A number of farmers have reported that a green crop was of more value than 20 tons of manure. Others have said that it was impossible to fertilize sufficiently to equal the effect of a green crop turned under. Of course, the value of the green manure depends upon the crop used. Legume crops are most valuable because of the fact that they gather the free nitrogen of the air.

It is rather difficult, however, to explain the beneficial effects of green manure. A green crop can add no potash or phosphorous or any other element except nitrogen for legume crops. Organic matter is added but not so much as with a large application of manure. Manure and commercial fertilizers add all or any elements desired. There are times, too, when either farm machinery or a green crop may do injury especially during drought, by cutting down the availability of the soil water. This is especially true when a large growth of vines or hay is turned under and there is not sufficient time for decay and composting before the crop is planted.

One advantage we can see for green manure is that if it is plowed early it is tender and easily decomposed. It may thus become rapidly available for plant food, while the woody material and more difficulty decomposed material of the farm manure is not readily available to plants. It is possible, too, that the green crop may have charged over some of the stock fertility of the soil, such that the phosphorus and potassium compounds of the plant are more easily used by the next crop than they were originally in the soil. The minerals of the plant are all in the organic form while some of those of the soil, probably most, are in an inorganic form.

Farm manures and fertilizers on the other hand increase the total plant food supply. But with the manure there is added an immense number of minute organisms or bacteria. It has been suggested that this great increase in bacterial numbers may have a temporary retarding effect. The organisms may compete with the farm crops and rob them temporarily of readily available plant food. In a comparatively short time, however, a balance would be reached and organisms would die and themselves become available sources of plant food.

We find too that farm manure has a rather low available value compared with other materials as a source of nitrogen. And nitrogen on many of our soils is one of the principal elements upon which crop yields depend. Valuing sodium nitrate at 100 the availability of farm manure is only 45 while green crops are usually about 65. We know that farm manure contains a considerable quantity of dead bacterial cells as well as live organisms, the very resistant material which the digestive tract of the animal has failed to decompose and coarse and woody material used for bedding. Half the value of manure is in the urine and many farmers lose most of this.

And though we can not explain the effectivenes sof a green crop we may see some reasons for its value. Many state experiment stations have tested various crops. Cowpeas and crimson clover are probably the most common legumes used. Where the crop is a success a dollar invested in crimson clover seed in the fall is the most economical application of fertilizer that can be made. Many reports show the yield of succeeding grain crop doubled. Where a legume crop is grown for hay the stubble gives a large increase in grain. This solves the nitrogen problem and it is only necessary to find the proper legume. Some states at present do not seem to have a suitable crop to grow. Clover and cowpeas are not a success. Sometimes it is probably only a question of finding the right variety.

Not many farmers are willing to give up a year's use of land to grow a crop to plow under. In fact, such a course can hardly be advised. What we wish is to grow a catch crop and thus fertilize when the land is otherwise idle. The catch crops is very profitable and the increase will make it possible to supplement with mineral fertilizers. Thus we may solve the whole problem, get our nitrogen by a legume catch crop and make the phorus which it will more than do.—R. E. S.

GETTING MOST OUT OF YOUR SOIL

Evan Russell.

Almost from the beginning of farming operations in the United States the farmers adopted the soil-robbing system, and so successful were they in their efforts that even to the present day the same system of soil robbing has been practiced, and the land owners are just beginning to see the necessity of restoring to the land its former native fertility. These pioneer fathers who first broke the sod, and who hewed their way through the forests and spread out over the western plains country, little knew of the results of a continuous cropping, so very fertile and productive was the native soil.

When the soil is once robbed of its fertility and left exhausted in the hands of the careless tiller, its recovery is a hard and expensive task. An example of this condition is now found in the old eastern states where farms are advertised for sale at less price than the building and improvements are worth. With this class of lands the first impulse of the presen-day owner is to run away from the problem, leave the land and seek new fields to conquer and destroy. This recourse to new—possessions is about exhausted. It is now a question with the land owner if it is not cheaper to restore fertility to well located, worn-out lands than to move out onto new lands in the semi-arid country and await improvement and civilized conditions, such as the old neighborhoods enjoy.

Throughout the middle west the lands for sale are not so much worn but that a proper rotation of crops will at least keep them up to their present standard of fertility, and even improve them. The one crop method is undoubtedly the cause of the poverty of the land in the southern states. The planters raised cotton and tobacco year after year on the same lands, until all the plant food available for these particular crops was exhausted. One farmer a few years ago boasted that he had raised twenty-six successive crops of corn from one field, and never put a forkful of fertilizer or manure of any kind on this ground, and still got a fair yield. This was a fortunate circumstance, and no doubt an extra quality of land.

Rotation of crops improves the land in a number of ways, namely, the ground receives different treatment in different years, so that faults of one year may be corrected the next; no one element of plant food is likely to be exhausted; roots and stubble of grass, clover, alfalfa and cereals improve the texture of the soil. The rotation should include alfalfa, the clovers or some leguminous plants which add nitrogen and bring up food from the subsoil. By rotation weeds and other pests are kept in check more easily and more effectually.

By rotation of crops is not meant simply a change of the kind of grain grown without any systematic plan or reason. The fact that there has been too little system in what rotation has been practiced is the reason there have not been better results.

The object of farming is to get the largest returns from the soil with the least expenditure of soil fertility. Crop rotation is the best means to accomplish this end, and nowhere can it be practiced so economically as where mixed farming can be successfully carried on. The fact that most farmers do now practice a mixed husbandry makes it possible to practice systematic rotation with but very little more inconvenience than the one-crop method. Since the former way is an ever increasing resource to the farm and farmer, it is good business sense for him to do some thinking along this line, and after careful study practice such rotation of crops as is best fitted for his soil and conditions.

IRRIGATING THE ALFALFA CROP

G. C. Stone.

There is no material difference between the methods of applying irrigation water to alfalfa and those employed in irrigating other crops. The principal variations in method are due to local custom and soil conditions. When water is plentiful and available in large heads the flood system is usually employed. When the water supply is limited and only small flow may be obtained the furrow system is always advantageous. For the flood system the farm ditches are arranged at the time of seeding the crop. The ditches are so arranged that they control the entire area of the field and so constructed that they interfere as little as is practicable with the handling of the crop.

For the furrow system the field is marked off into shallow furrows just after seeding and these laterals become permanent with the stand of alfalfa. It is best to run the furrower through the furrows at least once each year to clean them out so that the water may not be obstructed. A cleaning of furrows after each cutting is economy. The water gradually feeds into the soil between the furrows until the entire surface is wet. The time of irrigating alfalfa is a matter concerning which there is much debate. Alfalfa does best when the soil contains just the amount of water it can use to advantage. Too much water produces poor hay and too little water makes a short crop.

It has been found profitable to make late fall irrigations, provided it is certain the water will be absorbed into the soil. If water freezes on the surface the stand of alfalfa will be destroyed. If winter rains are plentiful it is best not to irrigate in the late fall, as an excess of water in the top foot or two of the soil during freezing weather tends to winter kill the alfalfa. Also if the soil contains an excess of water in the early spring the alfalfa will make a slow start due to the delay in the soil warming up.

Seasonal and soil conditions control to a considerable extent the amount of water to be applied at one time and the frequency of the applications. Dry and windy weather makes heavy applications of water necessary and soils which will retain but a small proportion of the water applied require frequent light irrigations, although it should be borne in mind that alfalfa is a deep-rooted plant and no opportunity should be lost to encourage the roots to go deep into the soil for moisture. The rule adopted by many alfalfa growers is one irrigation for each cutting and ordinarily this is sufficient. In some sections one irrigation is given before the first cutting and one after the last cutting with one irrigation between cuttings.

If the rule of one irrigation for each cutting is followed, there remans the question of whether it is best to irrigate just before or just after cutting. Irrigation before the cutting has the disadvantage of making the distribution of water more difficult, due to the heavy growth of the crop. The hay cures better on dry than on moist land. Irrigation after cutting is more easily accomplished, but it has the disadvantage of permitting the soil and the plant crowns to dry out and the second cutting comes on more slowly than is the case when the ground is moist when the crop is taken off

GREAT POWER SYSTEM GIVES CONSTANT SERVICE

Big generating plants maintain abundant current from various points, preventing costly interruptions.

Not many years ago the old fashioned pump was considered one of the accomplishments of civilization, for it replaced the oaken bucket and the world claimed another victory over drudgery. The chief objection to the pump was that you had to work before you could drink. The modern water works put the pump out of commission. Now you turn the tap—the water is there. There is no work—no waiting—no drudgery. This is the service of the modern age.

Service Must Be Constant

In the same classification is the utility which brings light and power to your home and your industrial establishment. Aladdin's lamp was a source of wonder—so is the modern power company. If the Utah Power & Light Company fails to serve it does not fulfill its mission. Service in the modern age must be constant—not intermittent. We are here to save time and labor for you. Waits and interruptions must be eliminated.

Realizing this, the Utah Power & Light Company has established a system of power plants and transmission lines to assure you immediate and constant service. We are not like the old fashioned pump. The burden of supplying service rests with us. We do the work and you direct it. We are constantly at your service, subject to call every minute and hour in the day.

The Advantage of Dependability

The advantage of having more than one power plant or transmission line serving the community and large customer, is similar to the advantage of having more than one eye. When the eye of the man who has but one fails he is helpless. He ceases to operate until vision is restored. It is the same when a community or customer is dependent for power upon but one plant or transmission line, for in the case of failure of either of these the power supply is completely interrupted, until the trouble can be remedied.

The community or customer however, that can obtain power from more than one plant or transmission line is like the man who has the blessing of sight from two eyes. When the sight of one of his eyes becomes impaired or destroyed, the other takes on additional duties, and as a result of this sensitive arrangement he is still able to protect his physical welfare.

Efficient Public Service

Service from the Utah Power & Light Company is like the sight of many eyes. More than thirty plants attached to a net-work of transmission lines, guarantee your service in the face of emergency. Your service is continuous, there are no interruptions of consequence; this system takes no vacations and works seven days each week. It is the backbone of efficient public service.

The manufacturing plant obtaining power from our system is bound to be more efficient because it can depend on its power. Few interruptions in operations can be traced to power failures. Factories operating on their own power cannot be so certain of continuous operation. The bigger the system the greater the guarantee that operation will not be subject to interruptions.

61,658 Customers Served

That is why we are proud of the system we have established in the Intermountain country. This company has thirty-three water power plants, 1454 miles of high voltage transmission lines and 1241 miles of distribution lines. It has 61,658 customers who are using a total of 260,000 horse power in motors, lights and applicances. With this extensive system continuous power and efficient public service are natural results.

Utah Power & Light Co.

Efficient Public Service.

Utah's Experimenters In Agriculture

HAROLD RAYMOND HAGAN.

Harold R. Hagan, associate entomologist for the Utah Experiment Station, is also assistant professor of entomology in the Agricultural College. Like most of the other men on the staff of the Experiment Station, he has had a rather wide and varied experience which has fitted him for his position. Because entomological work is highly specialized in that it is unusually technical, and because it must also be both practical and speedy, an entomologist must be well trained as regards both technic and experience. The Utah Experiment Station has just such a man in its associate entomologist.

Though Mr. Hagan was born in 1886 at Chicago, his family came West so soon that he did all his schooling here. His grade and high-school work he did in Coeur d'Alene (Idaho), Spokane, Washington, Salt Lake City, and Los Angeles, California. Whatever the drawbacks are to a person's doing his schooling in several places, he at least acquires a broader viewpoint than does a person who stays in one place. His college work was done partly at the University of Utah and partly at the Agricultural College of Utah from which he was graduated in 1914. He obtained further experience and greater practibility by working his way through college. In his Junior and Senior years he assisted in the zoology and entomology laboratories and taught a class in entomology in his senior year.

Upon his graduation he was appointed assistant entomologist for the Utah Experiment Station and instructor in entomology in the College, which positions he held for three successive years. Then he was awarded a scholarship at Harvard University which he attended from September 1917 to June 1918 when he was given a Master's degree. He then returned to Utah as associate entomologist for the Station and assistant professor in the College. Wide and thorough as has been his training, his study of field problems has been equally wide and thorough. For many years wheat joint worms and wheat straw worms have been doing considerable damage in Utah. These insects were described in the East but were thought not to occur in Utah. While studying other insects Mr. Hagan noted that wheat was being injured by some unreported insect or insects. Careful examination showed two of them, the joint worm and the straw worm. Almost at once, in keeping with his good training, Mr. Hagan set out to find how best to control these insects. It soon became apparent that varieties held some relationship. On this problem and on other problems of insect control on grain Mr. Hagan is now at work.

It has been known for a long time that many insects attack and live over winter on weeds. In order to control any insect it is necessary to know whether it feeds on some weed and if so on what one. This problem is another on which Mr. Hagan is at work. He is likewise studying on the apple leaf roller and the morphology of insects. No less important is his work on the alfalfa weevil. He is helping on the cultural methods so useful in its control. In addition to the above research problems he is in charge of three projects:

1. Grain Insects.
2. Predaceous Insects.
3. A survey of the flies of Utah.

It is readily apparent that the entomological problems of Utah are many, and that their solution means thousands of dollars to the State.

Mr. Hagan's ability has been recognized by various societies. Those which elected him to membership are Gamma Sigma Delta (honorary agricultural fraternity), American Association for the Advancement of Science, American Association of Economic Entomologists, Entomological Association of America Cambridge Entomological Society (Harvard), and the Utah Academy of Sciences. He has published a paper in the Journal of Morphology on the morphology of the maintid and one on the housefly as a Utah Extension Circular. Besides these he has written several smaller paper and articles for local journals and papers.

THE AUTO TRUCK A FARM NECESSITY

We may as well get ready, and that right soon, for the auto-truck. Conditions are forcing it upon us, and once it is with us we will welcome it like a long-lost brother.

The basic reason for the auto-truck on the country highway is the increasing value of the farmer's time. Not so many years ago one could spend all day going to the store. That time has gone. The farmer who wastes his time comes to the place where the sheriff closes him out. Every year sees the business demands of the farm increase, and today the average farm requires as close attention as the average factory.

The American farm is a factory. It has a vast equipment of livestock and machinery that must be kept in proper motion. And while the automobile has wonderfully cut out the waste motion and speeded up the farm business, the farm is still as far as it was thirty years ago from its elevator or stock-loading platform.

True, the roads are better. The load hauled averages a little heavier today than it did in 1888, but that is about all. The freight delivery business of the farm has not kept pace with general farm development. It's and all day's job still to haul a load of wheat ten miles to market.

Such a condition must pass away. The strenuous trying-out of the motor truck in Europe is paving the way for its general adoption as soon as peace returns. It is being perfected and standardized as not a quarter-century of peace would have improved it. The motor truck age is at hand.

Admittedly there are some drawbacks to its use. It will not replace the horse, but it will not longer allow the horse to waste the time of his master. The division of labor is already indicated—the tractor for heavy field work, the truck for heavy road hauling, the horse for light teaming jobs on the road and in the field. The economically-equipped farm of the future will have all three forms of power—and the auto in addition—in order that the most valuable power of all—man power—may be most profitably utilized.

What if the farm cannot afford a truck? That is no bar to its use. Many a small factory hires its heavy hauling done. It would possibly—very probably—pay the small farm to do the same. That is, supposing the operating business of the farm demands or can take the owner's full time.

Somehow the matter of adjustment to conditions will be worked out. The sooner we begin to think in terms of motor truck transportation cost the better. Many of us have tramped beside the ox team; many more of us will live to see the passing of the too-slow and too time-wasteful four-horse grain tank.—Exchange.

WHEN you can keep your customers satisfied with the service you give, and at the same time save money doing it, you have taken two steps ahead. Now for the third step.

The International Motor Truck is a Business Builder

Horses can travel just so far every day, and the distance is not great. Beyond that distance you cannot do business profitably with horses.

An International motor truck travels three times as fast and as far as a horse. It enables you to reach out for business into territory you cannot profitably touch with horses — at an expense less than that of the two or more horses you now have.

Build up your business to its limit—reduce your expenses below what they now are—by using an **International motor truck.**

Four Models

H, 1,500 lbs. capacity — K, 3,000 lbs. capacity
F, 2,000 lbs. capacity — G, 4,000 lbs. capacity

Special bodies for any business.

International Motor Trucks Are Sold By

UTAH MOTOR CAR COMPANY,
28 South 2nd East, Salt Lake City, Utah.

KOPPS GARAGE,
Cedar City, Utah.

PAROWAN AUTO COMPANY,
Parowan, Utah.

PRICE GARAGE COMPANY
Price, Utah.

WILLIS JOHNSON & SON
Roosevelt, Utah.

UINTA ELEVATOR & MILLING COMPANY,
Evanston, Wyoming.

GOODING MOTOR CO.,
Gooding, Idaho.

BRANCHES AT BUHL, TWIN FALLS AND BURLEY

YELLOWSTONE MOTOR CO.
Pocatello, Idaho.

BRANCHES AT BLACKFOOT, IDAHO FALLS, REXBURG

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending July 9th.—Cattle—Receipts, 882; market, steady; prime bred steers, $12.00@13.00; dressed beef steers, $10.00@12.00; cows, $7.00@9.00; heifers, $7.00@9.00; stockers and feeders, $6.00@7.00; canners, $4.50@5.50; fat bulls, $7.00@8.00; bologna bulls, $6.00 @7.00; calves, $9.00@11.00.

Hogs—Receipts, 638; market, higher; tops, $16.00; bulk of sales, $15.85.

Sheep—Receipts, 3,618; market, steady; spring lambs, $13.00; yearlings, $11.00; heavy wethers, $10.00; ewes, $9.00@10.00.

North Salt Lake, July 9.—Market steady. Receipts: Cattle, 65. Choice heavy grain fed steers, $11.50@12.50; choice heavy grass steers, $10.00@ 11.50; fair steers, $8.50@9.50; feeder steers $7.75@8.50; choice cows and heavy heifers, $8.00@9.00; fair to good cows and heifers, $7.00@8.00; cutters, $5.75@6.25; canners, $4.50@5.50; fat bulls, $6.00@8.00; bologna bulls, $5.00 @6.00; veal calves, $10.00@12.00.

Hogs: Receipts, none. Market, steady. Choice fat hogs, $16.00.

Sheep: Receipts, none. Market, steady. Choice spring lambs, $15.25@ 16.00; choice shorn lambs, $13.00@ 13.50; wethers, $9.00@10.50; fat ewes, $8.50@9.50.

Food wasted is food lost and no money can replace it.

HOME

WHEATLESS BREADS AND CAKES

Save The Wheat for Victory.

Our soldiers and those of the Allies who are fighting in France must have bread. America must send them wheat. Every American has a chance to help. We must use one-half or even less of the usual amount of wheat if our soldiers are to have the bread they need.

To save the wheat use the wheat substitutes. Corn meal, rolled oats, rice and buckwheat—these are usually found everywhere. Besides you can now get barley flour, ground oats, corn flour, rice flour, and potato flour in many markets. In some places peanut flour, sweet potato meal, soy bean flour, kaffir, milo, and feterita meal can be obtained for use. Choose the ones easiest to get in your neighborhood and use them in place of wheat.

Whole wheat and graham flour, macaroni, and the wheat breakfast foods should be saved just the same as white flour. We are also asked to save rye.

Use quick breads. American people have always used and liked quick breads. Try the wheat substitutes for making them. They are delicious and they can save a great deal of wheat for our soldiers.

Quick Breads Requiring No Wheat.

Barley Biscuits.

Have you ever made barley biscuits? They are worth trying. 2 cups barley flour, 2 tablespoons fat, ½ teaspoon salt, 4 teaspoons baking powder, 2-3 cup milk.

Sift the dry ingredients together, mix in the fat, and add the liquid until a soft dough is formed. Roll to about three-fourths inch thick, cut with a cooky cutter, and bake in a hot oven.

This makes a very good dough for shortcake also.

Buckwheat Breakfast Cake.

This is good, if served hot. 2 cups buckwheat flour, ¼ cup shortening, 2 cups sour milk, 1 teaspoon soda, ½ teaspoon salt.

Mix and bake in a flat pan so that the cake is about 1½ inches thick when done. Cut in squares and serve hot like corn bread.

Waffles or Griddle Cakes.

1½ cups milk, 2 eggs, 2 tablespoons fat, 2 cups barley flour, 3 teaspoons baking powder, 1 teaspoon salt.

Corn flour or half corn flour and half peanut flour may be used instead of barley flour.

Sift the dry ingredients together and add slowly the milk, beaten egg yolk, and melted fat. Beat thoroughly for a minute and fold in stiffly beaten whites. Cook in hot well-greased waffle iron or as griddle cakes on a hot well-greased griddle.

Oats are good for quick breads. Rolled oats may be ground through a food chopper and used in this form in quick breads or cakes, or ground oats be bought at such.

Try these oatmeal and corn-flour muffins:

Oatmeal (Ground Oats) and Corn-Flour Muffins.

1 cup milk, 2 eggs, 1 tablespoon melted fat, 1 cup oatmeal, 1 cup corn flour, 4 teaspoons baking powder, 1 teaspoon salt.

Sift the dry ingredients together and add to the liquid. Stir in the melted fat. Bake in well-greased muffin molds for 25 minutes.

These quick breads must take the place of much of the yeast bread we are accustomed to using. The yeast bread we do use should be Victory bread. The bakers of this country are now making this Victory bread which contains 25 per cent of wheat substitutes, just as the bakers in France and England are using wheat substitutes in their yeast bread. Waste none of the bread, for all products containing wheat are precious.

Loaf bread that can be sliced and served cold or toasted is often wanted. Try this conservation loaf:

Oat and Corn-Flour Bread.

2 cups rolled oats (ground). 2-3 cup corn flour, 4 teaspoons baking powder, 1 teaspoon salt, ¾ cup milk, 2 eggs, 4 tablespoons corn syrup, 2 tablespoons melted fat.

Mix the melted fat, liquid, syrup, and egg. Add the well-mixed dry ingredients. Bake as a loaf in a moderately hot oven for one hour or longer. Nuts or raisins may be added, if desired.

Quick breads for Americans! Victory bread saves wheat flour, but we can save more by making quick breads, which require no wheat. Let Americans use them now for the Cause of Liberty. We can not ask the women of France, many of whom are working twelve or fourteen hours a day in the field or factory, to make these breads. They are not accustomed to them and have no ovens in their homes for baking. Even in the little country towns they buy all their bread from the baker, and the bakeries are not equipped to make such breads. We cannot ask the men in the trenches to use the quick breads either, for all their bread must be baked by army bakers in the bakeries back of the lines.

It is our duty to use quick breads here in America, where we know how to make them and have facilities for baking them. Remember when you take the extra trouble to make a quick bread for a meal you help to make it possible for the soldier in the trench or the French woman who is doing a man's work "over there" to have a loaf of bread.

Wheatless Cake and Pastry.

Very good cake and pastry can be made from the wheat substitutes.

Pastry.

2 cups barley flour, 1-2 cup fat, 1 teaspoon salt, water to make a stiff dough. Combine as for other pastry.

Chocolate Cake.

This is a true conservation cake, for it saves sugar as well as wheat, ¼ cup fat, 3 tablespoons brown sugar, 2 eggs, 1 cup corn syrup, 2 squares chocolate (melted), ½ cup milk, 2 cups barley flour, 4 teaspoons baking powder, ¼ teaspoon salt, 1 teaspoon vanilla.

Cream the fat and sugar, add the egg yolks, syrup, and melted chocolate, and beat well. Sift dry ingredients together and add alternately with the milk. Add vanilla and fold in the stiffly beaten whites. Bake in loaf or layers in a moderate oven.

Other Ways to Save Wheat.

Cut your loaf at the table slice by slice as needed Waste not a crumb.

Waste no flour on the bread board when you make bread.

For thickening.—Use cornstarch or the substitute flours. Fine corn meal is good dredging meats. Every little bit of flour saved counts.

Have breadless meals.—Eat potatoes or cooked cereals to take the place of bread. When you have potatoes, rice, or hominy served with meat, or for breakfast a large bowl of cereal, you do not need bread.

EAT MORE RICE

This Highly Nutritious Food Should Have a More Important Place in the Nation's Diet.

Rice should have a more important place in the diet, says the United States Department of Agriculture in one of a series of satements reviewing the agricultural situation for 1918. Increased production and consumption of rice not only would expand a profitable industry, but the eating of more rice in the place of wheat would release a greater quantity of the bread grain for shipment to the allies.

The average per capita consumption of 6 pounds per year in the United States is smaller than that of many European countries where rice is not even produced. Norway and Sweden consume over 9 pounds per capita, Russia over 11 pounds, England 27 pounds, France 34 pounds, Italy over 101 pounds, and Germany more than 93 pounds. But even these European countries do not begin to eat as much rice as Japan and China. In these eastern countries rice is the most important article of diet. Every man, woman, and child in Japan, on the average, consumes 147 pounds of rice each year, and those in China 158 pounds.

Rice Highly Nutritious.

The importance of the place rice holds in the diets of foreign countries as a staple food, says a recent statement of the department, would prove beyond doubt that it is highly nutritious; an analysis of rice supports this proof. Pound for pound, rice is about as nutritious as wheat. Every hundred pounds of cleaned rice contain 87.7 pounds of nutriment, while every hundred pounds of wheat contain 87.1 pounds. Wheat has the advantage in protein and rice in carbohydrates.

Most of the American per capita consumption of 6 pounds per year is used in the Southern States, in some of which it is on the table with at least one meal daily. In these States it holds the same place in the dietary that the potato does in the Northern States.

Rice as sold by most American grocers is a pretty grain with a smooth and shiny surface, attractive to the eye, but it lacks the palatableness that makes foods popular. This rice has been so highly milled that it has been robbed of much of its food value and of most of its oily flavoring matter, leaving a product known to the trade as polished rice, which to many persons is tasteless. Unpolished rice is offered and accepted as a product superior to the polished rice, but in reality its food value is only better in a hardly perceptible degree.

Brown Rice Superior.

If the American housewife could be induced to demand brown rice instead of taking the polished product, there would be a marked increase in the consumption of this cereal in a short time, the department says. The superiority of the brown rice and its pleasing flavor, compared to both the polished and the unpolished rice, lie in the fact that the entire seed, as nature produced it, is used, only the inclosing chaff or hulls being removed.

In the preparation of rice, the housewife is advised to take care that it does not become an uninviting, glutinous mass, which has been its common table form in the country. In certain sections of the Southern States rice is served with each grain distinct and separate, making a tempting and appetizing dish.

How to Cook Rice.

In seeking information on the art of cooking rice, no mistake is made in referring to South Carolina, where the true value of this cereal has been appreciated for over two centuries. A Carolina housewife would advise the using of 1 pint of rice, after thorough washing, which she considers important, "to a quart and a pint of water," and a teaspoonful of common salt.

"This is to be boiled over a quick fire for 10 minutes, stirring occasionally. Then pour off all or nearly all the water; cover the vessel and put over a very slow fire and allow it to steam for 15 minutes at least, stirring occasionally. The rice will be soft or grainy, according to the quantity of water left on it when put to steam and the length of time allowed in the steaming. The larger the quantity of water and the shorter the steaming, the softer will be the rice.

Of course, other methods are used in boiling rice, or at least modifications of the recipe given, but it must be remembered that the result should not be a glutinous mass, and that success depends upon the proper amount of water used and the length of time in steaming.

Hit hard and quickly for all we have and are and hope to be!

REFRESHING DRINKS FOR WARM DAYS

When you are tired, warm and thirsty there is nothing quite so restful as a glass of home made lemonade, grape juice or iced tea. Make your afternoon beverage in the morning and let it ripen in the ice box. It will be much appreciated when you come home from the Red Cross workroom or when you are tired from your canning or working in your war garden.

To have on hand the materials for these refreshing beverages one needs only to have made up a bottle of syrup and to keep in the cupboard a bottle of grape juice and perhaps one of pineapple or loganberry. These with oranges, and lemons, and a jar of maraschino cherries will give endless variety if one has ice, tea and coffee, and a few sprigs of the fragrant mint from the garden.

In making the syrup for your summer drinks a large quantity may be made and stored in a jar for emergencies.

Foundation Syrup.

Two cups sugar, one quart water.

Pour the boiling water over the sugar and stir until partly dissolved. Boil for twelve minutes. Cool and store in jar.

To use this syrup mix it with the strained fruit juices, add iced water until beverage suits individual taste.

Favorite Lemonade.

One pint foundation syrup, one-third cup lemon juice, ice water.

Blend the strained lemon juice with the syrup. Add ice water and stir well. Serve very cold.

Orangeade.

One pint foundation syrup, one-third cup orange juice, juice one lemon, ice water.

Blend the syrup with the orange and lemon juices. Add ice water and stir well. Place slice of orange in each glass. Serve very cold.

Pineapple Lemonade.

One pint foundation syrup, one cup grated pineapple, or one cup pineapple juice, juice three lemons, about one quart ice water.

Blend the pineapple and lemon and add to the syrup. Dilute with ice water to individual taste.

Plain Fruit Punch.

One quart foundation syrup, one-half cup lemon juice, one cup orange juice, two cup grated pineapple or two cups pineapple juice, ice water.

Add the grated pineapple to the hot syrup and boil for twenty minutes; add the fruit juices, cool, strain and dilute with ice water.

Grape juice, whether homemade or from your grocer's makes the foundation of many excellent beverages. Keep a bottle in your ice box. It is one of the most nutritious of the fruit drinks.

Iced Grape Juice.

One pint grape juice, one pint iced water.

Blend well and serve very cold with a sprig of crushed mint used in the glass if you enjoy the mint flavor.

Grape and Ginger Ale.

One pint grape juice, one quart ginger ale, cracked ice.

Fill the glasses half full of cracked ice. Pour over the ice the mixed grape juice and ginger ale.

When you are canning fruits often some of the juices are left over. Place this juice in bottles. Cork tightly and sterilize with your jars of fruit. Use this juice in making a special dainty for your summer guests. Rhurbarb juice, cherry, pineapple, strawberry, raspberry and grape juice may be used in the following.

Fruit Cup.

Mint leaves, crushed ice, foundation syrup, fruit juice.

Arrange four mint leaves in the bottom of each frappe glass. On these place crushed ice to fill the glass three-fourths full. To any of the fruit juices mentioned above add enough foundation syrup to sweeten the mixture to taste. Pour this over the ice and serve garnished with a cherry. Arrange on doily covered plates and

serve as the first course of a summer luncheon.

Sometimes we want to serve a cold drink which will be high in food value. The children will enjoy the following for lunch or supper, or even between meals when they are very hungry.

Chocolate Shake.

Two tablespoons crushed ice, two and one-half tablespoons chocolate syrup, one egg, two-thirds cup milk.

Place the ingredients in glass and shake vigorously in metal shaker. Strain into another glass for serving. Shake over the top a few gratings of nutmeg or a little cinnamon.—People's Popular Monthly.

THIS HOMEMADE REFRIGERATOR, EASILY MADE, WILL KEEP FOOD WITHOUT ICE

Where ice is not obtainable an iceless refrigerator, homemade, will be a useful food keeper and food saver this summer. Maintaining a low temperature through the evaporation of water from its canvas cover, the iceless refrigerator will keep meats, fruits, and vegetables cool and will extend the period of keeping milk and butter. It can also serve as a cooler for drinking water. This is the way to make it:

A wooden frame is made with dimensions 42 by 16 by 14 inches and covered with screen wire, preferably the rustless type, which costs little more than the ordinary kind. The door is made to fit closely, and is mounted on brass hinges, and can be fastened with a wooden latch. The bottom is fitted solid, but the top should be covered with screen wire. Adjustable shelves can be made of solid wood or strips, or sheets of galvanized metal. Shelves made of poultry netting on light wooden frames are probably the most desirable. These shelves rest on side braces placed at desired intervals. A bread baking pan, 14 by 16 inches, is placed on the top and the frame rests in a 17 by 18 inch pan.

Paint Makes Surface Attractive—Prevents Rust.

All the woodwork, the shelves, and the pans should receive two coats of white paint and one or two coats of white enamel. This makes a very attractive surface and one that can be easily kept clean. The screen wire also may receive the coats of enamel, which will prevent it from rusting.

A cover of canton flannel, burlap, or duck is made to fit the frame. Put the smooth side out if canton flannel is used. It will require about 3 yards of material. This cover is buttoned around the top of the frame and down the side on which the door is not hinged, using buggy hooks and eyes or large headed tacks and eyelets worked in the material. On the front side arrange the hooks on the top of the door instead of on the frame and also fasten the cover down the latch side of the door, allowing a wide hem of the material to overlap the place where the door closes. The door can then be opened without unbuttoning the cover. The bottom of the cover should extend down into the lower pan. Four double strips, which taper to 8 or 10 inches in width, are sewed to the upper part of the cover. These strips form wicks that dip over into the upper pan.

The dimensions given make a refrigerator of very convenient size for household use and one with efficient evaporating surface, but it is not necessary to follow strictly these dimensions. If a large capacity is desired, the height of the refrigerator can be increased.

In homes where large quantities of milk and butter are to be kept it would be well to have one refrigerator for milk and butter and another for other foods, as milk and butter readily absorb odors from others foods. It costs very little to build the refrigerator and nothing to operate it. The operation is as simple as the construction. The upper pan should be kept filled with water. The water is drawn by capillary attraction through the wicks and saturates the cover. As evaporation takes place, heat is taken from the inside of the refrigerator, thereby lowering the temperature of the inside and the contents. Capillary action starts more readily if the cover is first dampened by dipping it in water or throwing water upon it. The greater the rate of evaporation the lower the temperature which can be secured; therefore the refrigerator works best when rapid evaporation takes place.

When the refrigerator is placed in a shady place in a strong breeze and the air is warm and dry, evaporation takes place continuously and rapidly and the temperature inside the refrigerator is reduced. Under ideal conditions the temperature has been known to be reduced to 50 degrees F. When it is damp and the air is full of moisture, the refrigerator will not work as well, since there is not enough evaporation. More water will find its way to the lower pan, but it will be drawn up into the covering by capillary attraction when the air again becomes drier.

The refrigerator should be regularly cleaned and sunned. If the framework, shelves, and pans are white enameled they can be more easily kept in a sanitary condition. It is well to have two covers, so that a fresh one can be more easily kept in a sanitary condition. It is well to have two covers, so that a fresh one can be used each week and the soiled one washed and sunned.

HOT WEATHER AND THE BABY

Mothers of America! This message comes to you at the beginning of the danger season. Of all the children who die during this Children's Year, more than one-third will perish during the months of July, August, and September. Your infant under one is in danger. Will you help the great cause along by doing your particular part for your own child? If each mother would do that, the sum total would be victory. The object of this great campaign is to save one hundred thousand lives that otherwise would perish. This ought not to be difficult if every mother of every child can be enlisted in the work. Here is a summary of some of the more important things that each mother should see to.

When to Wean The Baby.

First, do not wean a child during the hot months. If the baby is of the weaning age on the first of July, don't wean him until October or November. If the supply of mother's milk should decrease, do not abandon the breast atlogether but supplement the required amount with properly prepared cow's milk. By all means avoid giving the child any of the socalled "infant foods" of commerce. Some of these foods do contain a little milk, but most of them are modified cereals.

Keep The Baby Cool.

There is one use of ice which even the family with the small income should not dispense with, namely sufficient to keep the milk of the infant cool. It can be warmed to blood heat just before the administration and kept as near the ice as possible the rest of the time.

In the hot weather be careful of the boby's wrappings; do not bundle him to the point of suffiocation. Even in the poorest homes there is a possibility of opening the doors and windows and having fresh air and shade. The daily or even twice-daily bath will be a help toward keeping the child cool and clean. The clothing necessary for protection should be of the flimsiest, and day and night there should be an abundance of outdoor air.

If The Baby Is Ill.

If, after all your precautions, your child falls ill, do not hesitate for a moment to send for a physician. The delay of 24 hours in a case of this kind may prove fatal. The great danger of the hot season to the child is diarrhea in all of its forms, from the simplest type of looseness of the bowels to the most aggravated case of cholera infantum, a steep gradient and yet one that the neglected child rapidly mounts. Of all the munitions which should be furnished the army fighting for the life of our children, none of them is anything like so important as proper food, proper clothing, and proper ventilation.—Dr. Harvey W. Wiley in Good Housekeeping.

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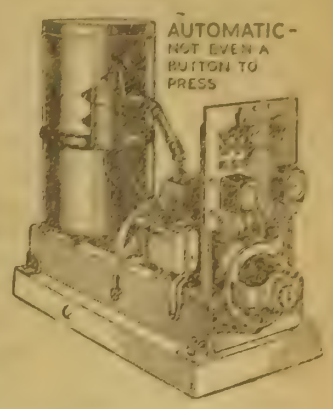

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TO RID PANTRY OF ANTS

Housekeepers are complaining of annoyance by ants in the kitchen and pantry this season. In order to get rid of this nuisance the use of a poisonous syrup prepared by dissolving a pound of sugar in a cup of hot water to which about 1-20 of an ounce of sodium arsenate, previously dissolved in a little hot water, is added. Small sponges are soaked in this syrup and placed in jelly glasses, the lids of which have been punched with several large holes. The sponge should about half fill the glass. Several glasses should be prepared in this way and placed where the ants are foraging. When the ants stop visiting any glass of poisoned syrup it should be moved a short distance, where they will visit it again. They will carry the poisoned syrup to their nests and eventually the whole colony will be destroyed or driven away. It should be remembered that this syrup is poisonous and must be kept away from children. Honey or syrup can be substituted for sugar in making the ant poison.

CHOOSE GOOD TOOLS

We require a supply of tools on the farm. Our work demands that we possess various small and large instruments with which to save time and labor. The nature of these tools, of course, will depend upon the system of farming adopted, and also upon our finances to a lesser extent. Whatever our requirements, whether it be brace and bit, keyhole saw, or sledge hammer, it is necessary to good and quick work that the tools be of the very highest quality.

Breaking and dulling at a time when we can ill afford time is a feature of poor tools. Tools with the right temper and quality will stand up under the test of hard usage—when doing the tough and mean jobs. Not only must tools be tempered to dispose of the toughest materials, but they must be breakage proof. If you are a bit-user, doubtless you have had many a bit snap off where the shanks joins the twist. That's where many bits are weak. A sledge that will chip off, or conversely, bruise under use, is in the same class.

One cannot always gauge the quality of tools by simply looking at them. A test is much more reliable, and most highly tempered tools should only be purchased subject to test. Of course, many tools of this character are backed by the guarantee of the maker. Unless we purchase our tools subject to test, or backed by a guarantee, ye may meet with disappointment. Subject all tools purchased to a close scrutiny in order to detect any possible flaws; look for the maker's name and guarantee, and buy only with the understanding that poor quality tools may be returned and the purchased price refunded or an exchange effected.—I. B. Henderson.

"Extravagance costs blood, the blood of heroes."—Lloyd George.

Livestock and The Orchard

(Continued from page 3)

Grains may be purchased or may be grown in connection with the orchard. The combination of legume hay for roughage, of either silage or root crop for succulence, and of our Western-grown grains for concentrates, gives exactly the right kind of ration for heavy milk and butter-fat production. The grains that are needed are barley and oats, in addition to bran, which is now one of the relatively cheapest feeds that can be bought in the market.

The dairy cow, therefore, fits in with the orchard plan for between-the-row crops and not only furnishes the family with highly-nutritious foodstuffs, but in addition gives the fruit grower a week by week or month by month cash income to supplement the income from fruit production.

Swine fit in well with dairy cattle because one of the best of all feeds for growing pigs is the skimmed milk, which on many farms is a by-product of the dairy business. Fundamentals in successful swine production are pasture for the brood sow and pigs; by-products such as from the dairy for supplementing other rations and for keeping down cost of production, and concentrates for finishing swine for market. All of these feeds, to a limited extent at least, can be produced in connection with the fruit farm. The pasture could be legume pasture, either alfalfa or clover. In addition special between-the-row crops such as peas and oats, rape, kale and other crops of a similar nature can be seeded for hog pasture. Skimmed milk, unsalable fruit and wastes from the household may be used in connection with swine feeding. In addition there will be needed concentrates for fleshing swine for market. At present prices of feedstuffs, shorts and barley are probably the most economical feed to use in swine feeding. A nitrogenous supplement should be fed in addition and tankage, skimmed milk, or alfalfa nay are feeds valuable in this connection.

There are a large number of questions of breeding, feeding and management that should be considered in connection with dairy cattle and swine for the orchard. Time, however, does not permit extensive treatment of these problems unless there is some particular point that needs amplification. It is not only true that dairy cattle and swine are best fitted of the farm animals for use in connection with the orchard, but in addition it is peculiarly appropriate that these animals be bred at this particular time, since of all the animals of the farm the dairy cow is most efficient in that she provides more human food from one hundred pounds of feed, through her milk, than can be obtained through the means of any other animal product. Swine rank second in efficiency to the dairy cow.

There is one other branch of the livestock industry that should be mentioned at this time, one of the great industries of the American farmer. I refer to poultry raising. Poultry should not only be part of the general plan on the fruit farm, but in addition should be kept on every American farm. It is rather unfortunate that we find grain farmers as well as fruit growers going to the butcher or the groceryman for poultry that ought to be produced at home. Poultry on the fruit farm will not only furnish the family with foodstuffs among the most nutritious of all that are available for human consumption, but in addition, if properly handled, can be made to yield during the year no inconsiderable income.

The great fruit industry of the Northwest will lose nothing of its importance as a highly-organized specialty, but on the other hand will be strengthened and rendered more stable and permanent by the adoption of diversification to the extent of livestock keeping along the lines suggested above.

PROFITABLE IMPROVEMENTS

Under war conditions, there is a tendency with most people to economize, and this is especially true of farmers. The need of the country for money with which to carry on the war means a heavy increase in taxes, and the necessity for lending money to Uncle Sam by buying Liberty bonds, Thrift stamps, etc. The Red Cross, and other war activities call for millions of dollars, which must be contributed, and the farmer, of course, does his share in these. The price of practically everything the farmer buys has advanced and this tends to make him feel poor. Hence the tendency to cut out all unnecessary expenditures, and to class as unnecessary many expenditures which might very profitably be made.

H. W. Danforth, president of the Federal Land Bank of St. Louis, touched on this matter in a recent letter. We quote:

"I believe that one of the greatest handicaps the average farmer is suffering is his lack of sufficient operating capital. I know so many farms where a few dollars invested in drainage, silos, would increase production 25 to 30 per cent. Thru the federal farm loan act, farmers can borrow this money at 5½ per cent, and have up to forty years' time in which to pay off the mortgage. If my theory is correct, that with proper use of this money they can earn 25 to 30 per cent, it seems to me that every farmer who is not already carrying a loan on his land should be induced to borrow money from the federal land bank, and use it in this way.

"I have observed that in the past, where the average farmer placed a mortgage due in three, four or five years, he was inclined to sacrifice everything possible in order to pay it off. It seems to me if he were relieved from the nearness of maturity, he would be more inclined to invest the money in permanent improvements of various kinds, and consequently do much better farming.

"A short time ago, we made a loan of $10,000 to a farmer in Illinois, who owns about 200 acres of land free from incumbrance. He figures that by using this money for tile, remodeling his barn, building silos, and putting modern conveniences in his home, he is simply exercising good business judgment; that as long as the use of this money will make him more than he is paying for it, he has a good investment."

There is a lot of truth in what Mr. Danforth says. When we once begin to economize, we are likely to carry it altogther too far, and refuse to make expenditures which are really good investments. The man who "gets along somehow" with a practically worn-out implement, for example, will spend, in keeping it in repair and in time wasted, for more than the interest on the money invested in a new implement. There is such a thing as unwise economy.

The man who is lacking the working capital he really needs, and who can get this by putting a lien on his land through one of the federal land banks, might well consider the advisability of doing it; not only that he may get working capital, but that he may be safeguarded in a measure against the need of making a loan a year or two in the future, when interest rates may be considerably higher. As the war continues, we must expect to pay higher rates for money, and loans which mature during the continuation of the ware are likely to be much more difficult to renew. It is a good time for the man who is spread out a little too much, or who knows he is going to need additional working capital, to plan well in advance.—Henry Russel.

No man is rich enough to eat what his country needs.

Farmers Attack the Non-Partisan League

Quite a stir has been created throughout the agricultural sections of Utah, Idaho and neighboring states the past ten days by the publication in several country and cities newspapers in the state, of the letter written by W. S. Hansen, State Senator of Utah, to Agnes L. Riddle, state senator of Colorado and one of the most prominent farm women in the country, relative to Senator Riddle's membership in the Non Partisan League and her knowledge of its operations.

Senator Hansen was awarded the certificate of "Master Farmer" by the Utah Agricultural College and has taken a very active interest in everything affecting farmers throughout the state.

In response to questions asked him several days ago relative to his attitude toward the Non Partisan League, Senator Hansen issued the following statement.

To be brief all of the desired reforms can be brought about through the old line parties, without the creation of freak organizations having nothing in common with business interests that have taken years to develop. I am a farmer and take special interest in my farm business from which I make my living. I am of the opinion that we do not need such an organization in the state of Utah. To create a prejudice of one class of producers against the other is detrimental to the interests of all. I wrote Senator Agnes L. Riddle, a prominent farmer of Colorado and a member of the board of trustees of the Colorado Agricultural College for information. My letter to her and her reply you may have.

Fielding, Utah, April 6, 1918.

Senator Agnes Riddle,
Englewood, Colorado,
My Dear Senator.

For many years I have taken a deep interest in all public questions affecting the farmer. As a farmer, and a member of the Senate of the State of Utah, it has been my privilege to work in the interests of the farmers of Utah; and there has come to my attention lately the name of an organization called the Farmers' Nonpartisan League, which appears to have been organized by a Mr. Townley and a Mr. McHaigh. I have been told by farmers that this organization is about to enter the State of Utah, for the purpose of converting the farmers to its cause.

I have been informed that you have always been interested in the welfare of the Colorado farmer, and while a member of the House and as a Senator of the State of Colorado, have been active in the interests of the farmer, and that you are now a member of the State Board of Agriculture of the State of Colorado. I have been told that you were one of the original organizers of the Farmers' Nonpartisan League for the State of Colorado, and that after becoming acquainted with the organization and its work, you determined that the movement was not in the interests of the farmer, and that the organization was unpatriotic.

Will you please tell me about the Farmers' Nonpartisan League and your experience with the organization, so that myself and friends may obtain an authentic statement as to what this organization means to the farmer.

Yours very truly,
(Signed) W. S. HANSEN.

Denver, Colorado, April 13, 1918.

Hon. W. S. Hansen,
Fielding, Utah.

Dear Senator:

I have your letter of April 6th asking for information regarding the so-called National Nonpartisan League.

I have championed the farmer's cause in Colorado for over twenty-five years, as secretary and State organizer of the Grange, executive member and organizer of the International Congress of Farm Women, and as a member of the State Board of Agriculture; and have fought for the farmer in both branches of the Legislature of Colorado, so you may know my heart and soul are with the farmer, being one myself, and not a member of what the Nonpartisan League calls "Big Biz."

The Nonpartisan League started its propaganda in Colorado about one year ago. The farmers at that time were a little dissatisfied and disappointed in the action of the Legislature in refusing to provide for an appropriation for storage houses for potatoes and other farm products in the homesteads of Colorado. I made the fight in the Legislature for these storage houses, but failed, and was disappointed as well.

When organizers came to Colorado they told me of the great things they had accomplished in North Dakota, and while I did not at that time join them, they put my name on their organizating blanks as chairwoman of the executive committee, and caught a great many farmers by doing so. They later asked me to speak for them which I did, and when I came into real connection with the organization and its organizers I found that they were not telling the truth to the farmers, and one member of the organization stated that he had been to St. Paul Minn., to the convention, and had heard LaFollette, and that the League's National committee felt the same as LaFollette.

I want to tell you the whole thing is rotten, and if the farmers knew the truth the Nonpartisan League manager in Denver would have to leave town in the night.

One of their organizers made a speech and told of the wonderful things happening in Russia, and that this government of ours would have to be torn from its foundations before things would be changed as they should.

All three of the representatives of the league who came to Colorado said they were Socialists, but that Socialism was too slow for them, and they wanted to go a step further and get quick action.

I tried to keep them from going on with the organization in Colorado, by incorporating and taking right to use the name from them, so that someone could be made responsible for large sums of money taken from the farmers in Colorado, but I failed in this, and all the money was sent to St. Paul, Minn., and I was informed the organization not being incorporated, there was no responsibility for one cent collected.

I have done what I could in Colorado to tell the farmers the dangers of this league, and particularly the organizers. I am first and last a loyal American, and being so, I could no longer continue my association with the organizers of the League.

Yours sincerely,
(Signed) AGNES L. RIDDLE,
State Senator of Colorado.

"As you will note the letter of Senator Riddle needs no comment. It is plain, concise and to the point. I am of the opinion that Loyal American Citizens should not lend their influence of this political organization. What we want now is wholesome American Patriotism, one purpose, THE WINNING OF THE WAR."

The Improvement and Maintenance of Roads

Andrew P. Anderson.

Soils of a decidely gravelley character offers in general the most favorable conditions for the construction nd maintenance of such roads as will nswer the requirements of ordinary arm traffic. This does not mean, owever, that all soils of a gravelly haracter or all gravels are suitable or road-building purposes, nor that ny old method of construction will roduce satisfactory results. But it oes mean that a region favored with supply of gravel suitable for road onstruction is in possession of cerain natural advantages, which it would e folly not to utilize to their full exent. On rare occasions we find this aterial so distributed that only a ertain amount of grading and drainge work is required to secure a reaonably good road. Usually the soil aries from place to place, and, in eneral, the material really suitable or the wearing surface of the road is onfined to more or less localized deosits. These deposits should be tilized so far as the local conditions ill permit. Often times the road ay be constructed in part from the oorer gravel on the ground and then e wearing course finished or suplemented with selected gravel from more distant source. Where the oil contains too much clay a small ddition of sand or gravel, carrying ttle or no clay and of the proper haracter, may be added and worked nto the surface, while clay or gumbo ay be added to a gravel deficient in inding qualities. In this manner the ondition of many roads which are not ubject to heavy traffic may be very aterially improved at a comparative small increase in the cost of the oad.

The road builder must furthermore ontinually keep in mind the traffic hich the road will have to carry and e selection of the materials and haracter of the construction modified ccordingly. The best road is that ne which will give the community e desired service at the lowest total nnual outlay for that period of years uring which the adopted type may e properly considered as capable of atisfactorily and economically anwering the traffic requirements. Thus, hat would be a very good road for ne place for another, much in the ame manner as a one-horse plow may e the proper thing for a small orhard or the garden, but would be far rom economical in a large field.

Where the traffic is very heavy durng the dry season, and especially here a conisderable portion is motor riven and of high speed, the cost of aintaining a gravel road would probbly be excessive and the construcion should be modified or some other ype selected. This paper, however, ill deal only with roads carrying rdinary farm traffic and a small perentage of motor-driven vehicles, that , with ordinary or average country raffic conditions.

All gravels are not suitable for suracing the roadway. A good roaduilding gravel must have certain deinite qualities. First of all, it must ind or consolidate well on the road. his binding or cementing property is ue mainly to three factors: First, a roper percentage of clay or other lteration product, which will bind or ement the particles firmly together. his is especially important in a climte subject to long dry spells. In genral, the clay contents should amount o from 15 to 20 per cent. Moreover, e clay should be of such character s to bake and become very hard when ry. A clay which crumbles readily hen dry is of little value as a binder. he second consideration is the shape f the individual fragments, as the ore angular these are the better will e the mechanical bond. The third onsideration is the proportion of ch of the different sizes composing the gravel. This proportion should be such that the larger pebbles predominate, with just sufficient of the finer materials to fill the voids and thus form a normally stable mixture, which has a natural tendency to pack and remain firm rather than to creep and move under traffic.

If the gravel in its natural condition does not answer all the necessary requirements, this may often be remedied at a small extra outlay. Thus additional clay may be added to improve the binding quality, improper proportions may be corrected by mixing gravels in the proper ratio from different sources, and excess sand or too large pebbles may be removed by screening. Not infrequently a gravel carrying a large amount of bowlders can be run through a crusher and made to yields a material but little, if any, inferior to the best broken stone.

In the construction of a gravel road the preliminary grading will be governed by the topography and local conditions necessary to secure adequate drainage. The chief consideration to be borne in mind is that in general the principal source of danger to a gravel road in an arid region is not during winter or rainy seasons, but during the dry weather of summer. The side ditches should be shallow and the crown low unless it is reasonably certain that an exceptional amount of seepage water will have to be contended with. So long as a properly constructed gravel road has a certain amount of moisture it will not ravel or go to pieces. The aim must therefore be of conserve and retain this moisture and keep the road surface from completely drying out. When local conditions are favorable, shade may be planted along the roadside. In still other places it may be possible to make provisions for flooding the road a few times during the season. Where irrigation waters are plentiful this possibility of flooding the road at necessary intervals should be well considered before construction is begun.

The necessary thickness or depth of gravel to be placed on the road depends on the character of the traffic, the nature and condition of the subgrade or foundation, and the character of the gravel used for the surfacing. In general practice the thickness of the consolidated gravel in a well-constructed road varies from 6 to 10 inches. Owing to the practical impossibility of consolidating this amount of gravel at one time, the gravel is usually placed in two courses.

The particular details of the construction will vary with local conditions and the machinery available, the amount of work to be undertaken, and many other factors, which can only be determined by a close study of all the conditions involved. Good gravel roads have been built without the use of any special machinery. But this entails very considerable hardship for a time on the passing traffic. Loose gravel is almost as difficult to haul over as loose sand. Whenever a road roller is not available the work should be done immediately preceding or during the early part of the rainy season, so that the gravel may be thoroughly consolidated before the dry season begins. Unless a road roller and water for sprinkling are available the construction of a gravel road should never be undertaken after the beginning of the dry season.

The construction of a gravel road should never be undertaken unless definite provisions for maintenance are assured. A newly constructed gravel road needs special attention for at least a year before the surface becomes thoroughly consolidated and bonded. After each rain and, if necessary, at other times when the gravel is moist enough to pack, the split log drag or other similar device should be used to fill the ruts and maintain the crown. The drag should, however, never be used on a dry road. When the road is too dry to drag, a hand garden rake will be found very useful to fill ruts and incipent chuck holes. A slight covering of straw or any similar fibrous material available may be used to good advantage to prevent or check raveling during dry weather. The most important consideration in the maintenance of a gravel road, however, is timeliness—make the repairs at once and while they can be easily remedied. If neglected, they may soon extend beyond any means available. The motto of the man in charge of maintaining a gravel road should be "do it now."

This is the Mower that's Easy on the Team

Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks and taken the weight off the outside as well as the inside [illegible] there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

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and see all the reasons why this New Standard Mower is easier on the horses, easier on the operator, and works and wears better than others. Emerson New Standard Mowers are the result of 78 years' harvesting experience. Look into the quality of the Emerson—then buy on your own judgment. Send for catalog.

Also ask about our own famous Foot-lift and Engine Plows.

EMERSON HAY TOOLS

Hay-field *efficiency* and haying *profit* are greatly increased by the use of EMERSON Sweep Rakes and Hay Stackers. They are *built to last*, wonderfully *simple* and *strong*, of *proved durability*.

EMERSON Sweep Rakes have hinged tongues—the ones that never gall a horse—and many other superior features. EMERSON Hay Stackers have *light draft*—are easy on horses—easy to operate—well made throughout

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Seven cows, six heifers, three bulls.
All animals are in first class condition.
Prices reasonable.

Utah School for the Deaf and the Blind

OGDEN, UTAH.

"WEED CONTROL"

In the control of weeds there are three main principles to be observed. Preventing the weeds from going to seed on the farm, preventing the weed seeds from being brought to the farm, and in the cases of perennials, starving out the underground parts by preventing them from making top growth. An enormous number of seeds are produced by weeds, the number varying from 100 to several thousand per plant. Some weeds, such as wild carrot, burdock and others are capable of producing 20,000 or more seeds to the plant. If the weeds are attacked when the most advanced have just reached the full-bloom stage they can be prevented from seeding. At this stage, too, the roots are at their weakest. The thorough preparation of the seed bed of every crop is an important factor in the control of weeds. Each harrowing destroys hosts of young weed seedwithin a few inches of the surface of the soil that germinate. After planting the same object should be kept in mind. More weeds will be killed just before and after the crop comes up by the use of a drag harrow or a spike hook harrow than by several lings as it is only the weed seeds cultivations when the plants are larger. After the small grain crop is harvested it is a good plan to harrow or disk the stubble to encourage the germination of weed seeds, as these seedlings are later killed by the fall plowing or by cold weather. Mowing is another way to prevent weeds from going to seed and as a rule this should be done when the weeds have reached the full bloom stage.

"America is God's last chance save the world."—Emerson.

LIVE STOCK

RAISING PIGS ON PASTURE

Clement White.

The call for increased pork production has created a greater interest in economical hog raising. At the present time all kinds of food stuffs are so scarce and high priced, that it requires good judgment on the part of the hog raiser if he expects to make a reasonably satisfactory profit from the undertaking. At this season of the year the opportunities for getting full value from hog pasture are so favorable, that every farmer who handles even a few hogs can cut down feeding costs providing he supplies the bulk of the feeding ration in the form of green roughness. Under existing conditions it is about as easy for a camel to pass through the eye of the needle as to make a profit from "dry fed" hogs. The need for pork necessitates its production; so the ideal way to handle this end of the farming business is to provide adequate pasture for the animals.

Alfalfa is a favorite crop for hog pasture. It is not only eaten with relish by the animals, but also contains a higher quantity of digestible nutrients than any other green feed. Where enough alfalfa pasture is available to keep the pigs' stomachs filled, the greater part of the feeding problem is solved. But it isn't always possible to provide sufficient alfalfa for hog pasture. Owing to the value of alfalfa hay, many farmers are anxious to put up as many tons as possible, and do not look with favor upon a system of management which stores more or less of the alfalfa crops in the porkers' stomachs. Where a sufficient acreage of alfalfa isn't available for hog pasture, some other crop (or crops) can supply the deficiency. A satisfactory pasture will result if rape and oats are sown together. This combination may be sown at any time during the proper crop growing season. Two bushels of oats, together with eight or nine pounds of rape seed, is sufficinet for an acre of ground. If there are some "odds and ends" of land reasonably close to the hog corral, they can often be utilized to advantage for pasture purposes. Rape has a high feeding value, and then sown with oats produces rapid gains.

While a good pasture will supply hogs with the bulk of their feeding ration, it should not be relied upon to entirely take the place of grain and concentrated feeds. It is true that pigs will not starve when they have access to pasture, and receive no other feed, but they will make better gains, and develop heavier, stronger bodies if their ration is balanced by supplying them with grain and mill feed. Where corn is used, it is advisable to grind it and feed in a self feeder. This plan eliminates any possibility of wasted grain, and, under existing conditions, waste must be reduced if any profit is to result from raising hogs. There is no profit in stunting pigs; the stunted pig is a "money loser" regardless of the price of pork. He doesn't make economical gains while making his early growth, and his hide-bound frame becomes set, and is exceedingly hard to "limber up" when fattening time comes. So reliance should be placed upon a balanced ration. This ration should contain a concentrated protein feed. Tankage is excellent for the purpose, and while it is high priced, it is economical when properly fed. Tankage may be mixed with corn and fed in a self feeder, fed dry or mixed in slop.

A "word to the wise" is regard to the subject of a grain ration. The best rule to follow is to use the kind of grain which is cheapest and most plentiful in a certain locality. Kafir, milo, feterita, etc., may be used in the place of corn, and will give excellent results. Where tankage isn't available, shorts may be used instead. In this connection it is advisable to state that some hog raisers prefer shorts to tankage, and never feed the latter when it is possible to secure shorts. Before dismissing the subject of the grain ration, we desire to emphasize the fact that a small grain ration, fed regularity, will give better results than a heavy feed one day, followed by a starvation process the next. All kinds of feed is so valuable that it is the interests of the hog raiser to balance the ration so his animals derive 100 per cent benefit from the grain fed.

Spring pigs that have access to a good pasture of some variety of green crop will produce an equal amount of gain, with less grain and concentrated feed, than pigs of the same size and type that are confined in a dry lot and fed similar grain and concentrates. There are a number of reasons why hogs allowed to roam upon a good pasture make better gains than animals confined in a dry lot. In the first place a growing pig needs exercise and lots of it. He prefers to take his exercise by "strolling" through a green crop which he can nibble as he progresses. When pigs roam over a pasture they do not "run to fat" without developing adequate bone, as is often the case with animals kept closely confined. Green feed has a desirable effect upon the hog's digestive system, putting the organs in shape to extract all the nourishment needed by the body.

It will be seen that hog pasture is beneficial for other reasons as well as the important one of lowering feeding costs. Hogs on pasture seldom develop dry, hacking coughs. They are free from thumps, and keep clean and sanitary because they have a clean place in which to exercise.

It is advisable to keep an eye on the growing pigs, and watch for indications of mange, worms, etc. It is a good policy to dip pigs during warm weather, even though they do not appear to be troubed with skin ailments. Any standard dip, used according to directions, is suitable. An expensive dipping vat is not needed, as a vinegar barrel may be used for small and medium sized pigs. The large hogs can be sprayed if suitable conveniences are not at hand for dipping them.

It sometimes happens that a pasture crop will be green and "lusty with growth" during the early part of the summer, only to turn brown and cease growing just when the pigs have attained sufficient size to eat large quantities of roughness. To offset the disadvantage of a barren pasture several methods of managing the sows and pigs may be followed.

A patch of cane is excellent to "hold in reserve for late hog pasture. When the other crops refuse to produce enough green forage to supply the hogs, the animals can be turned uvon the cane, where they will get adequate supply of succulent feed, and gain correspondingly.

—o—

PROFIT FOR CARE IN SHEEP

R. B. Rushing.

So many who are credited with good farmers never pay any attention to the care of some of their stock, while other stock may be very nice that they own. But the man who desires to make a success of sheep raising must understand his sheep and give them good care for sheep are animals that if neglected become disheartened and instead of doing well they become the reverse and are a losing proposition to their owner. There are many such flocks found over this country; in fact, many think all a sheep requires is some pasture, both winter and summer, salt sometimes, perhaps once in a month, perhaps none at all, lambs sold just about so—not fattened—not very good care at lambing time. You see this example so much over the country that it looks to me like a cruel way of treating one of the most profitable animals on the farm. Though the most abused the sheep gives the best returns of any farm stock that I have had.

The flock of sheep give returns twice a year and there is no work required like there is with hogs and cows.

At lambing time a ewe should have the best of care and attention, for you may be able to save both ewe and lamb by helping her. The best flock masters understand their flocks and know what they like best, change their pastures often, giving them new places to roam around in, etc. Give them salt regularly and have fresh water always before them, for sheep will drink a surprising amount of water if they can have access to it. If ewes are in poor flesh once a day. Oats, bran, shelled corn, salt, a little ashes and sulphur will help to keep them in health.

And if lambs come early roots like mangels or rutabagas should be fed and exercise given them every day during the cold weather.

During Lambing Time.

The ewe should have the very best of care and attention; they should be looked after several times during the day and also several times during the night. Separate the ewes with the lambs from the rest of the flock for a few days and then allow them free range every nice day.

Generally the lambs should not come too early, for most farmers do not have proper conditions for the successful handling of real early lambs. However, when a farmer has the proper requirements, and will give them the necessary care, there is extra good money in those, but it is easy to lose a lot of money if they are neglected.

Lambs that come in the spring can be turned out on grass and they grow a good deal faster than lambs that come in February when it is so cold, and you may earn a good many more.

When the Cows Come Home

A good feeding of Sunripe Stock Feed, in the evening when the cows come from the grazing grounds, insures a full pail of milk at the morning's milking.

SUNRIPE

Stock Feed

is a scientifically balanced stock feed. The right proportions of oats, barley, cottonseed meal and sugar beet molasses. If your dealer is out of stock, write us.

Utah Cereal Food Co.
Ogden, Utah.

Although I believe that lambs coming at this time are stronger, they take so much more care and attention that the growth of them is not much greater than those which come later.

Last year I had some lambs at four months of age that weighed 105 pounds apiece. These were sold to the home market for mutton about the first of August from the pasture without weaning or fattening; but the best way is to fatten them before selling to shippers. The ewes and lambs had a fine upland pasture, June grass, clover, red top, timothy and plenty of fresh water from a spring and salt at will and some ground oats at times.

Fall Conditions.

This fall they came in too fat a condition to breed well, and the whole of last winter they had free range of several small fields with a result that they are now back in fine condition.

I like to talk to them, pet them, and give them nubbins of corn at various times from the hand, and they become very tame and do so very much better than a flock of wild untamed ewes that run whenever you come near them. There is nothing that stops the growth of a lamb quicker than a scare. The ewes that are wild give to their progeny all their traits, doubled several times. Nothing is quite so nice as a flock of ewes that you can call up to you any place in the field. Care pays a thousandfold, and kindness brings results and success in farming.

EUROPEAN LIVESTOCK LOSSES

Comparative losses in livestock by the warring and neutral nations of Europe and the general effect on their meat supply may be judged from figures announced by the U. S. Food Administration.

As regards meat, the Central Powers were much better prepared for the war than the Allies. Although the Allies possessed a greater total number of meat animals, the Central Powers had 2 per cent more per capita. This advantage amounted to 33 animals of all classes per 100 population.

Due apparently to acquisition of animals by conquest, Germany has not slaughteerd her home supply of livestock as rapidly as otherwise would have been necessary. There is now a practical exhaustion of animals in Belgium, Serbia and Rumania as a result of invasion, according to information from very reliable sources. In total animals the Allies have decreased their herds and flocks 45,787,000 head while Germany has reduced hers about 18,000,000 head—only slightly more than a third as many. The figures include cattle, sheep and hogs. Neutral nations show a total net reduction amounting to 1,412,000 of these animals. The European loss thus exceeds 65,000,000 head without taking into consideration Austria, Turkey and Russia which would, undoubtedly, bring the total to over 100,000,000.

A somewhat clearer view of the European meat situation at present is secured by reducing the number of animals to the actual amount of dressed meat they will yield. Rating cattle as equivalent to 500 pounds of dressed meat apiece; sheep, 40 pounds; hogs, 150 pounds, it appears that the various countries have suffered losses in their total meat assets to the following extent:

Nation	Per Cent of Loss on Meat Basis
Allies as a group	28.7
England	412.5
Belgium	82.0
France	21.4
Italy	17.8
Germany	36.3
European Neutrals	0.9

Considering the poor condition of the animals still alive and the reported reduction in live weight, the possible meat resources of Europe are obviously still further reduced.

The total number of cattle, sheep and hogs now in the United States is about 187,000,000, according to best estimates, which makes a striking comparision with the European depletion of 100,000,000 animals. Briefly, it appears that Europe has already lost considerably over half as many meat animals as there are in the United States today.

MAKING AND STACKING ALFLAFA HAY

(Continued from page 1)

be increased by letting it grow "stocky" or the most of it in bloom, but for feeding, his experience showed it was best to cut alfalfa just as it goes to bloom. The stocks are more tender and you are able to save more leaves making the hay more valuable as feed.

The great problem in curing alfalfa is to get the moisture out through the leaves without making them so brittle that they will fall off. There is much more danger of alfalfa leaves falling off than clover leaves. Now remember that alfalfa leaves are worth more than bran, pound for pound. In fact, a large part of the nutriment is in the leaf. Therefore, the more you shake it after it is dry, the more you handle it, the greater the percentage of leaves that will fall off and the poorer your hay will be.

Years of experience has taught us many lessons about making alfalfa hay. Ways and methods once thought successful are not followed any more. We now cut the alfalfa, let it wilt and follow along with hay rake and pile in wind rows to cure.

Hay is now so valuable it should be put under cover, in a hay shed or barn, as it will not take long to pay for either of them when hay is selling for the price it has the past two or three winters.

Too much hay is spoiled by poor stocking. Often, no consideration is given to the starting of a stack, as to whether it is a well drained piece of ground are not. I have seen stacks of hay, where the first or second foot of all the stack was spoiled because there was so much moisture and the dry hay seemed to draw it out of the ground. Build your stock on as dry a ground as possible. Put something on the ground to protect the alfalfa from the moisture, waste of some kind, straw or willows any thing to keep the hay of the ground.

More care should be given in stacking hay, to keep the center of the stack well filled, if for any reason your stack might be open when it rained. When it comes to topping out a stack, there is room for improvement with most farmers. I have seen stacks where practically no hay was spoiled during the winter storms because of the splendid way it was rounded out and finished of at the top to shed the rains and snows of winter. There are many who do not seem to know how to do this, if they do they neglect to do it.

More care should be given to tipping of a stack, it will be time well spent.

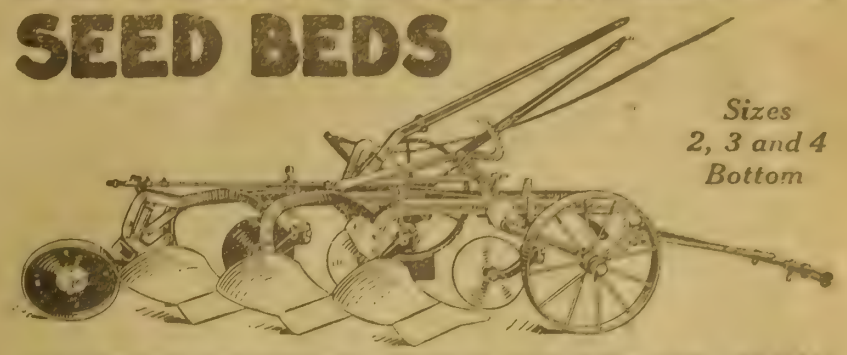
Stacking hay out of doors is a very poor method. It is too wasteful. Every grower of hay should have sufficient barn room to hold every pound he intends to preserve for winter use and also any he may have for sale which he does not dispose of before winter arrives. In times like these when hay is so dear we cannot make too much nor care for it too well.

Some alfalfa growers, will scatter coarse salt among the alfalfa as they are stacking. It certainly does not hurt the hay and many claim it helps it. Salt will add to the feeding value of the hay if a certain amount is absorbed by the hay while in the stack. I have a neighbor who uses Salt to scatter a little damp on account of rain. He claims it will help cure the hay.

With the price of alfalfa hay advancing all the time we can well afford to take better care of our hay. Study the best methods of curing it, and then put it away in such a manner that it be protected from rain or storms.

Many have not yet learned the value of alfalfa as a feed when we do, we will take better care of it.

BE PARTICULAR ABOUT SEED BEDS



Sizes 2, 3 and 4 Bottom

JOHN DEERE TRACTOR PLOWS AND TRACTOR DISC HARROWS

It pays to be particular about your seed beds. They are the basis of your profits. A little difference in your seed-bed-making at the beginning of the crop season often makes a big difference in your profit-taking at the end of the crop season.

It's just as easy to make good seed beds behind your tractor as it is to make seed beds that are "just fair." Use a *John Deere Tractor Plow* and a *John Deere Tractor Disc Harrow.* They can be relied on for the best of seed beds. They have special advantages that have proved themselves in thousands of fields.

See these better seed-bed making implements at your John Deere dealer's. He can furnish sizes to suit your Tractor.

Sizes 8, 9 and 10 foot

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JOHN DEERE, Moline, Illinois

SILO FACTS FOR STRENUOUS FARMERS

Every farmer who is a user of the silo is a booster for the silo.

In the silo you can store corn in a form in which practically every particle can be eaten.

Silage gives the effect of pasturage in winter; it is botn palatable and succulent.

Silage aids digestion in the dry-feeding season.

Animals fed silage are not more subject to tuberculosis, do not lose their teeth more quickly, and are not shorter-lived than animals fed other common kinds of feed.

The use of the silo often makes it possible to save corn that would otherwise be lost by frost.

A good silo should be round, air-tight, water-proof, have walls that are smooth inside, and be strong and durable.

A silo should be placed where it will give the greatest convenience in feeding and where it will be least exposed to extremely cold winds.

One hundred tons of silage will feed 25 cows 40 pounds of silage a day for 200 days.

A silo 14 feet in diameter and 32 feet high will hold 100 tons.

Silos of more than 100 tons capacity cost form $32 to $6 per ton, according to the type and material used in construction.

THE LIGHT THAT FAILED

"What is the trouble between Van Cleve and his wife? I thought she was the light of his life."

"So she was; but she went out too much."—Columbia Jester.

SURE

"Bobby," said the minister to a little fellow aged six, "I hear you are going to school now."

"Yes, sir," was the reply.

"What part of it do you like best?"

"Comin' home," was the prompt answer.

TO OBTAIN the best results, animal protein in some form must be included in the diet of your hogs. A sufficient quantity cannot be obtained from a feeding of straight grain. Mix some

High Protein Tankage

with the usual feeding. This will help build larger and more solid hogs, and if given to the sow, the young pigs will receive the proper start.

Ogden Packing & Provision Co.

Ogden, Utah.

UP-TO-DATE

Near-sighted Customer—"Aren't you making the rolls a little larger these days, Mr. Brown?"

Baker—"What? R-r-olls? Them's loaves!"

Know your garden and make it produce a balanced ration.

POULTRY

CANDLING EGGS, EASY TO DO, ... BEST WAY TO GRADE PRODUCT

A knowledge of candling is essential to egg grading. Grading is becoming more and more customary in the sale and purchase of eggs, because only by candling can it be made certain that shipments of eggs comply with Federal, State, and other regulations, and because the most important quality of an egg—freshness—can be best judged by candling. The process, in simple terms, is to hold an egg before a shaded light in a dark room, and by noting certain characteristics seen through the semitransparent shell to determine its edible and marketable qualities.

A Sample Outfit.

Farmers with only a few eggs to market may improvise a candler by placing a stovepipe over a kerosene lamp, cutting a small hole in the pipe, level with the light. The egg is held in a slanting position at the opening. It is twisted a few times to the right and left and then from end to end, so that its entire contents may be visible. Care should be taken that the fingers or hand do not conceal small blemishes, which otherwise would be disclosed by the light. The beginner should study carefully the general formation of an egg, as this detailed knowledge is necessary for the application of the standards of various grades and qualities.

Structure of the Egg.

The yolk ranges in color from light yellow to orange, and occasionally is olive green. The eggs with olive-green yolks are less desirable because of this color but are considered edible. The yolk is contained in a delicate membrane and on its surface is a small light-colored circular area called the germinal disk from which the chick develops. The yolk always floats in the white with the chick spot on top. Around the yolk lies a small quantity of thin white and then a heavy layer of thick white. Twisted cord-like coils of opaque white material called chalazae extend from the yolk through the white toward each end of the egg and hold the yolk in position, yet allow it to turn freely.

The Air Space.

Between the white and the shell are two fibrous membranes with an air space between them. When first laid, the contents fill the entire egg, but when the egg cools the contents shrink and these membranes separate, forming an air space. The size of this air space is important in determing the freshness of the egg. As the egg ages the air space increases in size. Most bad eggs have enlarged air spaces.

Weak Whites.

A fine, thick white is found in a fresh egg, and a weak thin white in a stale egg. As the egg becomes stale the amount of thin white increases and the amount of thick white decreases. Several classes of bad eggs are indicated by discolored whites.

The Yolk As a Guide.

The yolk of the fresh egg when twirled before the candle is seen dimly as a dark object moving slowly in the white. The yolk of a stale egg is seen more plainly than that of the fresh egg. When the yolk is so weak that the shake of the egg in candling causes it to break it should be graded as unmarketable. In the fresh egg the yolk is slightly above the center in the large end of the egg. As the egg becomes stale the yolk floats higher and nearer the shell.

The start of incubation in a fertile egg may be detected by a reddish glow surrounding the germinal spot. (Such eggs, although considered edible, are not graded as fresh.) This reddish glow is entirely different from the so-called blood ring, which indicates that the egg is unfit for food.

Where there is any doubt as to an eggs fitness for food purposes, the candler should give the consumer the benefit of the doubt and reject it.

SWAT THE ROOSTER

Many who stop to think about market conditions no doubt wonder why it is that the farmers receive so little for their eggs at this time of the year. The first answer that flashes up is, because the supply exceeds the demand. This is true only in part July and August are not the months of high production. The highest monthly records are made in March, April and May. There is usually only about one-half as many eggs produced during the hot months as in the more favorable spring months. Why is the price of eggs still so low? No, it is not because the cold storage eggs are keeping the price down. The cause rests almost entirely on the farmer or producer. The quality of the eggs sent to market in hot weather is very much in doubt. The Department of Agriculture estimates that the farmers of the United States are losing $45,000,000 yearly due to the poor methods of handling their eggs. One-third of this loss is due directly to the development or growth of the chick in the egg. This part of this loss and more can be easily prevented. As soon as the hatching season is over, which is usually about the latter part of May, all male birds should be sold, killed or confined in separate runs away from the hens. If this is done, no development of the embryo can take place because the eggs are infertile. Infertile eggs will keep much longer and retain a fresh appearance better than those that are fertile. In a fertile egg growth or development begins as soon as the temperature of the egg reaches 75 degrees F. and increases in rapidity as the temperature approaches the optimum 103 degrees and at this point blood appears within the egg and the embyro is fairly well formed at from 36 to 48 hours. Thus fertile eggs held in a room where the temperature is 100 degrees for 3 hours are practically unfit for food.

In many instances one-third to one-half of each case of eggs sent to market during July and August are unfit for food when they reach their destination. Buyers have learned this from experience and in purchasing eggs, always make an allowance in the price quoted to cover this loss. Thus the farmers and the consumers are the losers; the former is out the cash he should receive if his eggs were what they should be, and the latter is deprived of a sufficient supply of good fresh eggs.

HATCHING AND RAISING

S. I. Freeman.

No one should attempt to hatch eggs either under hens or otherwise unless the germ of the egg is strong and vigorous, because to hatch chicks from weak eggs is to fail in the raising of them if not in the hatch.

Now to have strong eggs is to have strong, vigorous breeding stock. And to have strong, vigorous breeding stock is to give them proper care and feed.

The care consists of the proper housing, feeding and culling. You can't cull too closely, as I have learned that from experience.

One can hatch and raise about as many chickens from a few vigorous and healthy breeders as he can from a bunch of weaklings.

If you don't know how to feed properly you can learn it by experience, through farm papers and bulletins put out by department of agriculture.

One suggestion is, more little chicks are killed by overfeeding than by starvation.

When you have the strong egg germ, the next thing is the care and management of the sitting hen.

The hen should be put in a pen for this purpose; mine is 20x20 feet.

The nest is made of clean straw or hay. Powder the hen and nest with a good powder and keep it up once every 10 days. An egg or two is put in the nest, then hen is moved to the nest and shut her up until the next day, then remove the cover, which closes her in, quietly. Move away and let her alone but watch her when she comes off to see if she returns to the nest, if so put the eggs under her that night, if not put her on the nest again; she will probably set then.

Plenty of corn, fresh, clean water and grit should be kept in the pen at all times.

Hen should be watched and if any eggs get broken take warm water and wash them off, also take all the litter that has broken egg on it out of the nest, putting fresh in its place.

If when the eggs are hatching the hen mashes the chicks it is a good idea to take them out, but if not leave them alone until the hatch is complete.

Have everything ready for the hen and little ones. The hen should be penned, but the chicks should have freedom. It is very important that the hen should be penned the first large she will run the chicks to death, especially the weak ones.

The pen for the hen should be about 3x4 feet, larger is better, but 3x4 feet is sufficient for a week or 10 days confinement. There should be a rat and rain-proof box in the pen for them to roost and shelter under.

The first two or three days the chicks will not get far from the coop, but will each day gradually range farther and farther out.

Now as to the feed, the feed and the manner of feeding is very important. They should not be fed anything for at least 48 hours, then when they are fed very little should be fed the first week. The first day of feeding two feeds of stale bread is enough. The next three feeds, only a few mouthfuls each feed. If the farmer is busy three feeds a day is sufficient. But five is probably better if not given too much at a time. The thing is don't feed too much the first week, but be sure they get a little bit each meal. Always feed dry feed at first. My experience is that you will have better "luck" with dry feeds. After the first week I begin to feed a little wheat bran and cotton seed meal or beef scraps. After two weeks it is kept before them all the time, if desired the stale bread can be "cut out" and fine ground corn chops and wheat substituted, but don't make the change suddenly but gradually.

Be sure they have all they can eat after the first week or so.

Water, fresh, clean water, should be kept before them at all times, but don't let them get drabbled.

(Continued on page 15)

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List your farm with us.

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343 Main Street Salt Lake City

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80 acres of good land close to the Delta Sugar Factory. $15.00 an acre. Own water right.

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Farms and Acreage

RELIABLE FARM BARGAINS

40 acres, one mile from town, under a high state of cultivation; on main county road; ½ planted to sugar beets, the other ½ to grain. Water right from the Bear River canal. This property can be had for $125 per acre. Small payment down and terms on the balance.

80 acres that is now rented for $30 per acre cash rent, showing the value of the land. This property is under a very high state of cultivation; small family orchard; balance planted to sugar beets, alfalfa and grain; price $15,000. The property is paying 15 per cent interest on this price.

120 acres, right near town; city water passes this farm; electric lights and other city conveniences can be had. Less than ½ mile from the depot; water rights from the Bear River canal. Price $15,000; small payment down; terms on the balance.

We have a department store in farms; we can supply you with a farm from one acre to one million acres. We are specializing in farms in northern Utah and southern Idaho, and have on our list at the present time a great many very fine farms, containing 40, 80, and 160 acres, all improved and ready to move on, including horses, implements and buildings. These farms can be purchased for a small payment down and ten years on the balance. If you are looking for a first-class farm, write, wire or telephone—

KIMBALL & RICHARDS,
"Land Merchants."
54 Main Street.
FARM AND RANCH DEPARTMENT.
Phone Wasatch 963.

RANCH BARGAIN

200 acres irrigated, all fenced, good ranch house, stables, corrals, and cattle sheds, puts up 150 tons of hay, 50 acres of wheat and oats, team, and machinery. Located on creek near the mountains with an abundance of range. Price $10,000.

FEDERAL LAND COMPANY
Ogden Utah

The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grossbeck, Agent, Room 33 City and County Bldg., Salt Lake City, Utah.

HATCHING AND RAISING

(Continued from page 14)

Provide green feed from the very start. If you will have oats coming up near the coop or pen the little chicks will take to them on the start. Green feed is necessary to promote best growth.

After two weeks the hen can be turned out on the range, a corn field is a good range for hen and chicks.

Last but not least keep the hen and chicks free from lice and mites as you cannot raise lice and chickens together successfully.

If the hen has been properly cared for there will be no lice when the hatch comes off. A small dab of grease on the head or an occasional powdering will keep lice down.

One will have to study the needs and wants of the chick before they can make a success. Book learning is all right, but practice makes perfection.

TWO PROFITS ON THE SAME LAND

Arvil Anderson.

For the intelligent and painstaking man, who is willing to give it the care and attention, there is a good field to make quite a large profit in growing fruits and poultry on the same land. This method of raising fruit and poultry has proved to be a success in quite a great many different instances. In fact it seems to be the most natural way of raising both.

I find from my own experience that fruit growing makes an excellent combination with the raising of poultry. By this combination a man is able to secure two crops from the same land besides the soil being improved by the poultry droppings. Insects which are injurious to the trees are devoured in great numbers and kept in check and the soil under the trees kept loose by the hens. While on the other hand the trees furnish an abundance of shade for the poultry which is so essential during the summer and fall.

Where you have a small orchard and wish to run poultry in same, I think it is a good plan to fence the whole orchard with chicken wire of some kind.

By having the whole orchard fenced the fencing does not interfer with cultivating the trees and will prevent any other hens from ranging your land and in this way the danger of getting some contagious disease is less.

The colony system is easily used in an enclosure of this kind and this I think is one of the most satisfactory methods of keeping poultry. The houses need not be expensive and should be of a size that is easily moved.

A house about eight by ten is a very convenient size and can be moved about when desired and will accommodate about twenty-five birds very well.

Having the house movable enables one to have the house on fresh ground when desired; this I consider one of the special good features of the colony system. When the house is built so as to be constantly at the same place it is almost impossible to keep the ground fresh.

The roosts should be made so as to be taken out when desired and by painting the house on the inside with crude oil two or three times a year mites can be kept down.

By using the hopper method of feeding in connection with the colony system, the labor in the house can be reduced to the minimum consistent with good profitable returns.

I think by the system of keeping poultry, as above suggested when the place is once free from all diseases of every kind, it will not be so hard to keep it so.

I think the special beauty of this system is that the birds are on free range have the advantages of free life and can be cared for the same as when kept in confinement. This includes the advantages of both, without the worst disadvantages of either.

I think the reason why so many fail with poultry is because the amount of labor is so great that it is not properly performed.

I would say to the reader, try this system and see what the results are with the proper management—getting a profit from both poultry and fruit.

THE HEN'S IMPORTANCE

The hen is helping to win this war more than the average person realizes. While she did not raise her chicks to feed a soldier, she nevertheless now feels her duty to the call of freedom and democracy. We note that Biddy is game, because our attention has been called to her importance in the producing world, and by noticing her worth as a provider we find what she can do.

Statistics gleaned from census reports, departmental and semi-official estimates show what she has done. From these it is easy to understand what she is capable of doing in the laying line this year. She is not near maximum production when she turns out 2,000,000,000 dozen eggs per year, equivalent to that many pounds of meat. What would that much meat look like on live foot? Imagine 3,000,000 head of cattle and you come near it.

That may be worth crowing over, but Biddy spends her energy in another way; she never does rest. Instead she devotes time to production of poultry meat weighing 2,500,000,000 pounds, equivalent to 12,500,000 squealing pigs dressed and weighing 200 pounds each. Do not these facts show the value of the hen in considering the conservation of meat for the warring nations who are our associates? Meat, not talk, will help win this war and the American hen will help win it.

PRESERVE EGGS NOW

Waterglass solution is made in ratio of one to nine, as follows: One quart of waterglass or sodium silicate to nine quarts of boiled water, that is, water that has been boiled and cooled. This amount will be enough to preserve fifteen dozen eggs. Allow about two inches of this solution over the top layer of the eggs and place the container in a cool, dry place with a tight cover so as to prevent evaporation.

Dissolve two or three pounds of unslaked lime in five fiallons of water that has previously been boiled and allowed to cool, and allow the mixture to stand until the lime settles and the liquid is clear. Place clean fresh eggs in a clean earthenware crock or jar and pour the clear limewater into the vessel until the eggs are covered. At least two inches of the solution should cover the top layer of eggs.

Preserve only fresh, clean unwashed eggs. Candle or test all eggs for cracks.

PRODUCE ONLY INFERTILE EGGS THIS SUMMER

Eggs require special care.
Lice and mites flourish.
Chicks require shade.

During the summer months it is best to produce only infertile eggs. This will enable poultry keepers to sell all the male birds, thus saving their feed and producing eggs which will keep better and market to a great advantage. To produce the best market eggs during the summer, all male birds should be disposed of. No broody hen should be allowed to sit on the eggs. Clean nests must be provided. Eggs must be gathered twice daily, kept in a cool place, and marketed every few days. Also all cracked, soiled or misshapen eggs had better be used at home, and only large, uniform, clean, fresh eggs sold.

Lice and mites will multiply and thrive in hot weather. Be on guard. Spray with a 3 per cent solution of any coaltar disinfectant to kill mites. Lice can be destroyed entirely by treating hens with sodium fluoride. Put the white powder on in pinches all over the bird's body. Either of above treatments must be repeated in ten days.

The little chicks need shade and protection from the heat. Give them some shady grounds or build some frames, cover with old sacks and place on legs to protect them from the heat of the sun. They will thrive better. Be sure they get plenty of fresh water during the hot days.—P. F. Schowengerdt, C. A. C.

WHEN TO BUY AN ENGINE

If you never ran one, and can buy it one time just as well as another, then I would say to buy it early in the summer. Here are my reasons for this suggestion: A gas engine will give the least trouble in the warm, summer weather. It will give the most trouble in the winter. In a spirit of justice to the engine, I had better say that these are the times when it is easiest and hardest to successfully operate an engine, because the fault is more often in the operator than in the engine itself. A good engine in good condition will run just as well at 40 degrees below zero as at 90 above, providing you know how to run it.

This "know how" comes best and surest from practice. So buy your engine at the season of the year when the least knowledge is demanded on your part. Get your primary lessons in engine operation under these same conditions. Then learn the bigger lessons as the harder conditions arise. By the time winter has come around, your apprenticeship should have been completed.

By starting in the summer time your chances are greatest for getting through the winter without any serious difficulties. Also the chances are less for your cursing all makers and all dealers of gas engines.—James A. King.

The Farmers Market Place

This registered Jersey calf will make the very best kind of sire for a herd where production and quality is aimed at.

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She is from the famous Torono bull, whose sire is the Hood's Farm Torono, who has more register of merritt daughters than any living sire.

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On the mother's side the calf's grandmother is a heavy producer with a test of 6.1 per cent butter fat.

The gread-grandmother is high in butter-fat and has a record of 40 pounds of milk per day for 30 days, and has many daughters of similar high production.

On both sides then the ancestry is so good that one can be positively sure of good results in the offspring of this calf.

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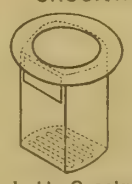

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The Soy Bean

The soy bean can be grown successfully on nearly all types of soil and has about the same range of climatic adaptation as varieties of corn according the the U. S. Department of Agriculture. The growing and handling of the beans are accomplished almost entirely by machinery in this country, the ordinary farm equipment meeting all the requirements of the crop. In large bean-growing districts special harvesters for gathering the seed in the field are used quite successfully. The cost of production varies from $7.50 to $12 per acre, depending on the methods employed in growing and handling the crop. The market price per bushel of seed for sowing purposes varies in different sections, ranging from $1 in large seed producing sections of the South to $2 and $3 per bushel in the Central and Middle Atlantic States. Yields of seed to the acre in various sections of the United States range from about 15 bushels of 60 pounds each in the Northern States to about 40 bushels in the northern half of the Cotton Belt. The average yield in eastern North Carolina is about 25 bushels, although many fields produce 35 bushels or more to the acre.

Climate plays an important part in yield and the oil content of the seed. Considerable differences occur in the oil content of soy beans grown in different localities. The same variety grown in Mississippi and Ohio, for example, yielded respectively 25.4 per cent and 17.5 per cent of oil. The soy bean lends itself readily to improvement by breeding, and experiments indicate the possibility of securing varieties of high oil content by selection.

The soy bean, which already is one of the most important cash crops of Asia and which promises to take an important place in the agricultural industry of the United States, may be utilized in a greater number and a greater variety of ways than almost any other agricultural product. The whole beans may be utilized for food as are the seeds of other legumes, or the oil alone may be consumed. The oil resembles that of cotton seed in many ways, but is of a more pronounced drying character. In addition to its availability as a food, soy-bean oil has found important uses in the markets of the world for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants. It is also used in the Orient for lighting and in the manufacture of printing ink.

In Japan the soy bean forms one of the most important articles of food in use. It is one of the principal ingredients in the manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A "vegetable milk" is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetabe cheese. This milk is used fresh, and a form of condensed milk is manufactured from it. All of these foodstuffs are used daily in Japanese homes and for the poorer classes are the principal source of protein.

Used in "Diabetic" Foods.

The use of the meal remaining after the oil is extracted from soy beans has become an important factor in several European countries during the last few years, and to some extent in America, as a food of low starch content. Soy beans contain at the most but a slight trace of starch, and extensive experiments in America and Europe indicate the value of the bean and its products as the basis of foods for persons requiring a low starch diet. Soy-bean flour enters largely as a constituent in many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties. The flour or meal can be used successfully in the household as a constituent of muffins, bread, and biscuits in much the way in which corn meal is used.

Soy-Bean Milk.

An artificial milk like that manufactured in the Orient has been produced in small quantities in the United States, and recently a factory has been equipped to make this product. Such milk can be used for cooking in the household, and by bakers, confectioners, and chocolate manufacturers. If, however, the milk from the soy bean is used in the manufacture of products as a substitute for milk, the labels of such products should indicate that the substitution has been made; otherwise it would constitute adulteration under the food and drugs act.

In addition to its uses for flour and milk, the soy bean can be prepared as human food in numerous ways. The green bean, when from three-fourths to full grown, has been found to compare favorably with the butter or Lima bean. The soy bean has been utilized not only in the United States but in European countries as a substitute for the coffee bean. When roasted and prepared, it makes an excellent substitute for coffee. In Asia the dried beans, especially the green-seeded varieties, are soaked in salt water and then roasted, this product being eaten after the manner of roasted peanuts.

Stock Feed.

The value of soy-bean meal for producing meat, milk, and butter is well established. It is one of the cheapest of the highly nitrogenous feeding stuffs and is therefore one of the most economical for balancing rations deficient in nitrogen. Its use in America is confined at the present time almost entirely to the Pacific States, where it is considered a valuable feed not only by dairymen but also by poultrymen. Owing to its high content of protein, the meal should be used with the same precautions as are observed with other highly concentrated feeds, to avoid digestive troubles. As regards digestibility, soy-bean meal compares very favorably with other oil meals.

Soy-Bean Meal as a Fertilizer.

The utilization of soy-bean meal for fertilizing purposes has been confined almost entirely to Asiatic countries. Following the recent production in the Southern States of bean cake and oil from American-grown beans, however, fertilizer manufacturers have taken an active interest in the fertilizing possibilities of meal. Analyses by the U. S. Department of Agriculture have shown that while soy bean meal, like cottonseed meal, has a high fertilizing value when applied directly, a more economical practice would be to feed the meal to stock and apply the resulting manure to the soil.

Soy-Bean Oil.

In the United States two methods of extracting oil from soy beans—the hydraulic and the expeller processes—are used by oil mills, the latter producing the highest yields. Extensive tests with domestic beans indicate that 1 ton of seed will yield by the expeller process an average of 30 gallons of oil and 1600 pounds of meal, the difference (about 175 pounds representing the loss due to cleaning and the evaporation of moisture driven off after the beans have been crushed and heated.

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"Lafayette, we are here!"—Pershing.

———o———

Professor—"Pat, tell me, now, what is your solution to the world problem?"

Pat—"Well, sor, I think we should have a world democracy—with an Irishman for King!"—Safety Hints.

———o———

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THE PROFITS OF THE WAR.

Herbert Hoover.

I believe that no person in the United States has a right to make one cent more profit out of any employment that he would have made under pre-war conditions. I do not care whether this refers to the farmer, to the laborer, to the manufacturer, to the middlemen or to the retailer. To me, every cent taken beyond this standard is money abstracted from the blood and sacrifice of the American people. Extortionate profits are not necessary, to secure the maximum effort on the part of the American people in this war. If we are going to adopt that theory, we have admitted everything that has been charged against us of being the most material. istic, the most avaricious, and the most venal of people in this world.

If we are going to admit that the government, in order to secure the supreme effort of its citizens in production, must bribe them with money to this extra exertion, we have admitted a weakness of American character, of American civilization and of American ideals that puts us on a plane below German kultur. Do not mistake that I am saying that prices and wages should return to the pre-war normal, because the incidence of war before we joined in it had lifted our costs of operation, and there must be compensation in every direction. Nevertheless, I hold that any man who has made more than his necessary living out of the cost this nation is giving in the blood of the boys we are sending to France should not stand out as a benefactor to his community.

I have had this statement met before with the expression that it is dreamy idealism, but I have found no individual who was prepared in his own instance to defend any such line of action. It is true that this doctrine has been made law only to the larger food trades. I am confident that profiteering has from a national point of view disappeared in the regulated food trades, and in consequence my belief is that it should be applied generlly to all business in this community, and before we are finished with this war, that will have been done.

To me, this goes much further than the mere case of the individual and the blame that may be attached to him. As I have seen this war develop from an active participation in its backwash and misery since its first day, I have seen growing out of the masses of people in every county aspirations for great economic change. That change, broadly, will be that those who work with their hands will obtain a larger proportion of this world's goods those who work with their brains obtain less. Those who do not work will probably obtain nothing.

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VOLUME XIV; No. 51 LEHI AND SALT LAKE CITY, UTAH. JULY 20, 1918

Alfalfa and Soil Fertility

Written for Utah Farmer by R. E. Miller.

More and more we are learning the value of alfalfa. Some have learned this by experience others have accepted the word of others who have had the practical experience. Some have thought of the alfalfa plant only as a feed, other have proven its value as one of the best crops to plant on new land.

That alfalfa will enrich the soil has long been known to many farmers and writers on agricultural. From the best information that I can secure alfalfa will help, but there are instances where this famous plant does not increase the element nitrogen, of great importance to the soil. That alfalfa will keep a farm from becoming depleted in plant food nutrients is strongly believed by many farmers and to a great extent they are right, but as the maintaining other elements except nitrogen this crop as well as any other crop will make a soil poorer. It cannot return potassium, calcium, and phosphorous and it is these elements that will in time become deficient. In restoring nitrogen it will go a long way, but it will not even restore that element unless other conditions are suitable.

Let us see just what this forage will actually do in adding nitrogen to our farm lands, when we grow it from year to year without returning any fertilizer in the shape of manure, taking it for granted that all the other plant food elements exist in abundance.

We look upon alfalfa as one of the greatest forage crops, as a food producer it ranks first as was shown by a report of the Wisconsin Experiment Station, which report states that one acre of alfalfa has as much nitrogen as three of red clover, nine of timothy, and twelve of brome grass. Yielding so much nitrogen, how can it be that it can produce greater amounts than any other forage and at the same time add to the soil that material which it so liberally produces.

Dr. C. G. Hopkins, who is probably the highest authority in this country, on soil chemistry says, "To the soil that hath not shall be given, and to the soil that hath shall be taken away." From this then, we will understand that poor soils will become more fertile while rich soils will become less fertile.

I have had some experience and talked with others who have learned the value of alfalfa to new land or poor land as some might call it. I remember a neighbor who bought a farm under one of our new canals and started in to farming, he planted some wheat but he planted the greater part of his land in alfalfa. Some said he was making a mistake, it has since proven that he did the very best thing, for now he is plowing under some of this alfalfa as a green manure and will produce much larger crops as a result of the condition of the soil.

Experiments have been conducted to try out the value of alfalfa on poor soil. It does build up poor soil where alfalfa plants properly infected with nitrogen fixing bacteria were planted in soils absolutely devoid of nitrogen, in which they made good normal growths, and besides added of this food to the soil. In one year the alfalfa thus grown added enough of this element to produce 18 bushels of wheat. In normally productive soils, however, not so much fertility goes back by adding this element directly but by letting the roots decay.

The circular telling of this experiment said that it could plainly be seen that the nitrogen came from the air and not from the soil. We may infer then, that this plant will gather this nutrient from the atmosphere when it is unavailable in the soil.

Alfalfa produces large top-roots which will bore as far as fifteen or more feet into well drained soil and produce by decay a large amount of humus which is distributed throughout every cubic inch of soil, to considerable depth, exactly where it will do the most good. Soil examinations indicate that water goes down much more rapidly in decayed alfalfa sod than in similar soil that has not grown alfalfa. This increase in humus not only increases the capacity of the soil to absorb moisture, but promotes better air circulation and hastens the chemical changes of the soil that are so necessary for the proper development of available plant food.

When we consider what a wonderfull plant alfalfa is for gathering nitrogen, we learn its value to the soil.

It has the power, through the aid of certain forms of bacteria, to take up free nitrogen from the air. Hence an alfalfa crop leaves the soil richer in nitrogen when it is plowed up than when it was seeded. Nitrogen is the element that gives vegetation a rank, dark green, healthy appearance, when present in abundance. A deficiency of nitrogen causes a paler, spindling growth. Hundreds of thousands of dollars have been spent in trying to harness the power of great waterfalls in order to convert free nitrogen of the air into some commercial form to be sold as fertilizer.

Alfalfa's superiority over other crops is due to the fact that it is rich in protein (muscle-building food) and also to the fact that it enriches rather than depletes the soil upon which it grows. Both of these qualities are possible because of the presence of exceedingly small plants called "bacteria," which live upon the roots of the alfalfa, there forming the familiar nodules. In each nodule are

(Continued on page 16)

SUGAR BEETS

BEET TOPS AS SILAGE

A Method of Feeding Which Adds to the Return from the Crop.

By J. A. Brock in Facts About Sugar.

A Valuable Product.

The value as an important factor in sugar beet culture of the beet tops, consisting of the crowns and leaves removed in harvesting for the sugar factory, is being rapidly recognized by American beet growers. There are, however, a great many farmers who overlook or underestimate the value of these by-products to such an extent that they still allow them to remain and rot on the fields without rendering other service than that of returning to the soil certain minera elements which have been absorbed by the growing beet.

While it is true that this portion of the plant contains a certain amount of salts which are beneficial to the soil, it has been amply demonstrated that this method of utilizing them is neither efficient nor economical. The farmer who derives the greatest benefit from these by-products is he who feeds them to his lvestock and utilizes the manure for fertilization. Numerous tests have shown that by ths method the fertilizing properties are not decreased. Hence, by feeding the beet tops the farmer is able to return to the soil the desired elements and, in addition, is able to supply his livestock with a green forage at that period of the year when it is most relished, in the absence of natural pasturage.

Chemical analysis has shown that beet tops are highly nutritious. While the results of such analyses will vary under different conditions, the following gives what may be considered as average percentages:

	Tops Leaves	Crowns	Entire Beet
Water	89.01	80.15	81.6
Raw protein	2.81	1.98	1.0
Fatty substances	.46	.25	.1
Nitrogen-free extract	5.50	10.03	15.3
Fiber	.....	1.90	1.4
Ash	2.22	5.69	0.6
	100.00	100.00	100.0

From the above it is evident that there is a great difference between the crowns and the entire beet, also that the crowns contain a higher percentage of salts than do the leaves, while the latter contain a higher percentage of raw protein. This, however, is balanced by the fact that the percentage of pure protein in the crowns is approximately 1.25, while the leaves contain approximately only .75 per cent. It should be taken into account, also, that the crowns, weight for weight, contain approximately double the nitrogeneous constituents of the leaves.

Referring to the nutritive value of sugar beet tops, H. Mendelson, of the Great Western Sugar Company, says: "An acre of land yielding about thirteen tons of beets will produce about nine tons of green tops if there is no leaf spot or hail. These nine tons of tops contain about 15 per cent or 1.35 tons (2,700 pounds) dry matter and 7.65 tons water."

Comparison with Alfalfa.

The dry substance of the tops contains about 10.5 per cent digestible protein, 7.2 per cent digestible fat, 36 per cent digestible carbohydrates and 7 per cent digestible fiber. Ordinary alfalfa hay analyzed by the same methods contains, according to Henry's "Feed and Feeding," 10.6 per cent digestible protein, 0.9 per cent digestible fat, 27 per cent digestible carbohydrates and 12 per cent digestible fiber. So far as there conventional analyses are concerned there is not much difference between the two, except, that alfalfa contains more fiber.

There are, unfortunately, very few accurate figures available as to the actual yield of tops under different conditions. In some sections of the country, where the average yield of beets per acre is high, from nine to twelve tons of tops are produced, while in others the amount will average much lower. After making a careful study of the average tonnage of tops produced per acre throughout the country, the writer estimates that the farmer may figure on obtaining approximately 4.9 tons of tops per acre. Of this 25 per cent is composed of crowns and 75 per cent of leaves. The nutritive yield, therefore, is approximately 1,400 pounds of dry substance per acre, of which 258 pounds are albuminoids, the value of which, added to the amount paid by the factory for the beet roots, increases considerably the grower's return from his crop.

Reference has already been made to the inadvisability of simply permitting the tops to remain on the field and rot. Another wasteful method of utilizing the tops is that of permitting the stock to enter the field after harvest for the purpose of consuming them. While it is true that this is the easiest way, it is by no means the most efficient and it is the most dangerous.

Stockmen figure that two acres of beet tops fed in this manner will feed a steer for 60 days and that he will gain 130 pounds, providing he is able to consume all the tops in the field.

This, however, is rarely possible, owing to the fact that if cold weather sets in before the crop is consumed, as is generally the case, the piles of tops will freeze, the leaves will become dry and break off and the crowns will become hard from drying out and freezing. If the frozen lump which is thus formed does not get stalled on the way to the pouch when swallowed (frequently a cause of death of animals pastured on beet tops-, the animal has a stomach full of frozen feed which it has to thaw out at the expense of its body heat. It will also be found in such cases that the animal will eat only sufficient tops to satisfy its hunger and will take barely enough hay to furnish sufficient surplus bodily heat to thaw out another meal of the tops, which it prefers.

On the other hand, if the weather is not severe and the tops do not freeze, the animal will eat nothing else. Due to this fact, many calves and horses have been lost, since these portions of the beet contain a considerable amount of oxalic acid.

Another objection to pasturing the stock in the beet field is that while eating the stock trample upon the feed and bury in the earth more than they eat.

While the practice of siloing beet tops has been followed in European beet-growing countries for many years, it has only been during the past few years that this method of handling them has been in vogue in the United States. It has been demonstrated, however, that this is the most efficient method of handling, and the results obtained have shown that the slight additional expense of siloing is more than offset by the results obtained.

As to the nutritive value of beet top silage as compared with corn silage, the following table from data prepared by Frank Noble, of the American Beet Sugar Company, shows the percentages of the various constituents of each:

	Beet Top Silage	Corn Silage
Moisture	64.06	68.50
Ash	9.25	1.51
Crude protein	2.87	3.12
Crude fat	.44	.80
Crude fiber	5.46	6.53
Nitrogen-free extract	17.62	20.54
	100.00	100.00

One of the largest stock feeders in the western states fed 800 head of sheep, about half ewes and half lambs, on a ration of 3 pounds of beet top silage per day for forty days and these sheep made a gain of from 4 to 5 pounds per head more than other sheep of like quality fed entirely on hay and beet pulp. Based on these results, this feeder estimates that when hay is selling at $12 per ton, beet top silage is worth fully $8.00 per ton.

Another feeder says "Last summer I built a small silo for the purpose of experimenting with beet tops for silage. I have found that the tops make a very good and nutritious food when converted into silage. The stock eat it readily and seem to do very well on it. I have fed my dairy cows about forty pounds of silage per day and about one half the usual amount of hay. My young stock and steers eat this silage readily and are doing much better than when fed hay and beet pulp."

"There is no comparison between feeding the tops from the field and from the silo," is the statement of another large feeder. "From the silo one gets the full feeding value, which I consider about half that of first class hay, pound for pound. A six ton crop of beet tops will feed 30 head of cattle from the silo ten days, while fed from the field, after it has been exposed to the sun and wind for a week or so, it would not feed them more than one day. I consider 40 pounds of beet top silage per day per head a good ration when fed with straw, pea straw or any other dry feed."

The following table, given by H. H. Griffin, of the Great Western Sugar Company, shows the comparative per centages of protein and of fats and like carbohydrates contained in beet top silage and in other feeds:

Feeds	Protein, per cent	Fats and like carbohydrates, per cent	Ratio
Wheat	10.20	63.2	1: 6.2
Corn	7.20	75.7	1:10.5
Barley	8.80	62.4	1: 7.1
Rye	9.60	66.3	1: 6.9
Alfalfa	11.00	42.0	1: 3.5
Molasses	.....	55.0	0:55.0
Corn silage	1.40	15.7	1:11.2
Beet pulp	.80	8.8	1:11.0
Beet top silage	1.88	11.5	1: 6.2

This analysis, after Kellner, shows that siloed beet tops contain a well-balanced ratio of protein and carbohydrates.

In siloing sugar beet tops, the farmer should always put in straw or some other absorptive substance. The reason for this is that the tops contain a considerable amount of moisture, which should be absorbed in order to retain the carbohydrates carried with it.

The tops may be cut up or they may be placed in the silo as they come from the field. In siloing in this manner care should be taken not to place the tops in the silo until they are in a wilted condition, in order that they may pack close and exclude the air.

One pound of common salt should be added to every ton of tops, and this addition should be taken into account when feeding, lest an excess of this condiment be administered to the stock. Five weeks after the silo has been closed the silage may be fed.

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SALT LAKE CITY

MISTAKES

How many mistakes are made and how bitterly we regret them when too late! It would be much better to think twice than to go blindly at things which so often brings remorse and bitterness. If we were less selfish we would make less mistakes. We think of ourselve too much, and our consideration for others is only secondary.

But when a person we know is trying to forget some terrible mistake, why not help him? Why should we constantly remind him of it by gossiping about it? People never gain anything by gossiping and meddling. Gossip is not always the truth, and if we cannot speak the truth we should not speak at all. The less hastily we speak the wiser we become for it gives us time to think. It is much better to think of something worth while than to meddle with our neighbors' affairs which is none of our concern. We should never hinder anyone's progress by any kind of interference, because their destiny lies in other hands than our own. I think a great many could improve themselves greatly if they really wanted to. Thoughts of money and pretty clothes fill the minds of men and women more than the welfare of the soul, and then, too, a great many are thinking too much, and talking more than is necessary of others when they have enough to think about at home.

We do not know how our neighbors suffer by these terrible past mistakes. We do not try to understand, and too often judge from outside appearance. It isn't any of our business whether other women are good housekeepers or not. Perhaps we have a worse failing than that. Even if we haven't it isn't anything to us. We have enough to do to look after our own house and children. We should give our women friends the same privilege. Often when a person is perfect in one thing she lacks in another. Brains and education amount to more in my point of view, than some other things. A woman with good sense and education is no gissiper and she doesn't meddle with neighborhood affairs which are not her concern. Nor does she try to stir up strife, or laugh at an unfortunate woman who is trying her very best to do right under discouraging conditions. But no matter if she is doing the very best she can, there is always some unkind person talking about her. It is much better not to heed it, but this is very hard to do sometimes as it requires great patience. A gossiping person in any neighborhood is very dangerous because she takes away our good reputation and peace of mind.

If a friend near us is in poor health wouldn't it be much nicer to go and help her with her house work once in awhile than to talk about the work left undone? It would be real charity, and she would appreciate it so very much to think she had at least one friend in whom she could trust. We do not always understand just how hard it is to perform household duties until we become ill ourselves. If it all depends on us, and it is impossible to get help, we are placed in trying circumstances. It is then we realize our mistake in not helping our friends instead of gossiping about them.—G. M. L.

CONSERVATION ON THE DAIRY FARM

Save yourself the trouble of cussing the calf—he'll keep on acting that way, because he doesn't know any better.

Save grumbling and growling at the profit you make on your cows. What you need is a new cream separator. Doing it the old way is like trying to go to market on a high bicycle.

Save thinking up a fancy name for that new lady calf—she'll give just as much milk if you call her "Bossy," and she'll come to you a dern sight quicker when you call.—Hoard's Dairyman.

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VOLUME XIV. LEHI, UTAH, SATURDAY, JULY 20, 1918 No. 51

The Farmer and World Civilization

Edgar L. Vincent.

The fact has always been conceded that it is to the men and women of the country that the world must look for its highest type of integrity and stability. History shows very plainly that as soon as people begin to leave the farm and become dwellers in cities civilization tends downward.

The publisher of a daily newspaper a few years ago paid the farmer folks the highest compliment I ever knew any city man to do. In speaking of a movement then on foot to give the local lawmaking body of the county a majority of members from the city, this man said: "The best people of this city do not want that done. We would rather the majority of our legislators would be from the country. You of the country send your best men; they have a substantial, strong upright character that we do not find in our politicans of the city. We can trust the farmers to legislate for us. We do not know where the legislators of the city would lead us if they had the balance of power in their hands."

At the present time in many countries civilization seems to be almost at the breaking point. Could there be any greater demoralization than exists in Russia? When a nation compels its girls to become mothers whether they will or not, as is contemplated in another of the countries now at war, and when that same country shows marked signs of yielding to the very worst instincts in other respects, and everywhere the disposition seems to be to give away to the sway of the baser passions, how careful should the farmers of the United States be lest they, too, be swept away and go down with the flood of evil that is sweeping over the world! If we are to maintain our oldtime supremacy, if we would be true to the traditions of the past, we must keep a steady hand upon the home life of the farm holding the standards of living even higher than in the past, so that we may be of help to humanity in this time of its severest trial. "Look onward, press forward," must be our watchword.

Now, just how can we do this? What must be our method of living, so that we may inspire the world to better living, loftier thinking and truer principles in all lines?

In the first place, it stands us in hand to think soberly on all questions today before the country. It is not easy to do this. When many voices are calling us here and there. It seems impossible sometimes to know just what is truth; but if we are careful and thoughtful in making our investigations we can find out where facts lie and act accordingly. This calls for the reading of the best papers and books. More and more the farmers of this country are coming to depend upon their farm papers for their best thought on matters of public interest. Books are not so plenty now as they were a few years ago, when the stress of times was not as severe, and the books we do have are not altogether calculated to provoke the best thinking on our part. So we need to be very careful in our choice of farm papers, so that both we and our young folks may have access to right thoughts, free from prejudice so far as possible.

And then, we need to look to it that we do not unduly find fault with or criticise the men who are at the head of the various departments of national life. To think and say unjust things about public officials is not difficult. That these men are not above criticism we cannot assert. We are all human; but we need not simply watch and criticise our lawmakers and other officers, but we are to be of service to them so far as we can by making suggestions that will help. The man at Washington and at the state capitol wants to know what his consituents think on the subjects upon which legislation is sought; but finding fault is like a great reservoir. Let it give way and it floods the valley. Young people are quick to catch up and imitate the words of their elders. How often do we see the very tone of the voice, and the expression of the face of the parents mirrored in the voice and on the features of the boys and girls. Then let father and mother and the older boys and girls think many times before they speak once. So far as it can be done, optimism, good feeling, uplifting statements regarding the men and the women of national life ought to be the rule.

But, more important than all the rest, our personal living must be on a good, high level. With all our reading and thinking must go right living. At no point is the drift downward

(Continued on page 12)

Making a start—Trees and garden one of the first planted.

The Test

John G. Willacy.

By the test of direct contact with the world young men and young women now emerging from the schools and colleges will find that as a way to knowledge the doors of the institutions of learning by which they pass out are but the entrances to a wider and more practical field of endeavor coextensive with the boundaries of the world. Here, in the inevitable tug of strife for position—for individual and collective advancement—Greek will meet Greek. Here the clash of ideas and the competition of activities will impress themselves upon the human mind much like steel in vigorous contact with flint, and, as in the latter instance, the sparks that fly will be frequent or rare according to earnest and orderly, or trifling and chaotic, effort applied. If carefully placed apart, either steel or flint, or both, may be safely stored in a powder vault. It is the violent touch that evolves the spark.

An idea will not of itself set the world on fire. It is in the test—the translation of thought into action, of theory into practice—that accomplishment is achieved. In the great world school science is constantly adjusting principles of natural law, welding together the species or groups physically or chemically related. Science is but the application of natural law, as observed by tests and experiments. In the first day of the world's existence ice could have been made in midsummer as is now being done had Adam but known how. All the elements entering into steam and electric power were present, but no one knew how to combine them. With the progress of time and the development of the human mind came knowledge. With the advancement of thought mystery yields to mastery. Science evolves wonderful achievements surpassing imaginations of the departed years. Oh, what a world this would be had Adam and Eve and science started simultaneously! What a world it will be when human energies, of body and mind, abandon destruction and devote themselves to the arts of construction!

Our civilization, though far advanced, has its advantages. Prosperity has its penalties; war its compensations. In the busy hive of the world's activities there have been, and are still, many drones—young men and young women, in particular, inheritors of the fruits of parental industry—who see nothing in the world but a life of ease suited to frivolous natures. As, in the converse relationship, contact with the world's rough edges strengthens character, so does living along lines of least resistance weaken character. Obedient to this law there has sprung up a growth of opulent indolence, in its effect demoralizing to the growth of character. Not dependent upon their own efforts these children of the splendor of riches, themselves producing nothing, have long been content with the pastime of wasting that which the industry of others produced. Habits of extravagance are easily contracted. In our social life they are contagious. None of us have entirely escaped either the contagion or the cost of it. Few of us but have drifted away from the moorings of thrift and economy fixed by our parents. Between us and our immediate ancestors there is more room for contrasts than for comparisons. One may not embrace frivolity save at the cost of higher and better standards. Youth less favored by fortune, as expressed in inherited wealth, yet more favored by capabilities, as expressed in character and accomplishment, represent an asset to the country. The idler is but a liability against the country's credit.

If, out of the crucible of the war now raging, nothing else is gained save impressions made upon the characters of men and women, and especially our young men and young women upon whose shoulders some day soon will fall the responsibilities of our national life, this of itself will amply repay the country's vast expenditure of treasure. For in real and lasting worth there exists no treasure to compare with character. As nothing else could have done the war has pulled our youth up to themselves. Where before the war many of them thought emptily, if indeed they thought at all, now they are thinking seriously and sensibly. To them life has taken on a different and a healthier meaning. They are coming to know that there is something to do—something worth while for them, even, to do. And they are doing, both in giving and serving. Tens of thousands of our young men are happier in their khaki, bigger in their own estimation of themselves, better in their service to their country, than

(Continued on page 15)

DAIRYING

THE UTILIZATION OF DAIRY BY-PRODUCTS

G. E. Frevet, U. S. Dept. Agr.

Butterfat is and no doubt will continue to be the leading product of the dairy. In fact, many dairymen have given very little consideration to the by-products and the economical utilization of them. Under the stress, however, of the present war conditions the value of the by-products becomes of greater importance and one which dairymen should give more consideration than they have in the past.

In the past such by-products as skim milk, butter milk and whey have been carelessly used in the feeding of farm animals, such as pigs and calves. No doubt even at the present time it is profitable under some conditions to use these products in feeding pigs and calves. However, greater care should be used in combining these products with other feeds in such ways as to get the maximum results. For instance, in some farms where skim-milk is plentiful calves are overfed on it. This, brings about indigestion in the calf and sometimes its loss. Henry's "Feeds and Feeding" points to the fact that skim milk fed to pigs is much more valuable when fed with corn. The problem of how to feed skim milk, butter milk or whey is one that must be determined largely by the individual farmer under his own farm conditions. The fact should be borne in mind that skim milk is a protein feed and that some carbohydrate feed should be fed with it. This also applies to buttermilk. Whey, on the other hand, is a carbohydrate feed and should be supplemented with protein.

From an economy standpoint skim milk should not be fed to animals when it is possible to utilize it direct as human food. Skim milk consumed as such has a food value approximately seven times greater than the amount of pork that it will produce when fed to pigs. It is therefore important at this time that as much skim milk be utilized direct as human food as is possible. The fact is that dairy products are much cheaper in most all instances than meat. Cottage cheese, for instance, yields about 17 pounds per 100 pounds of skim milk and is more than equivalent in food value to meat pound for pound. This means that when skim milk is consumed in the form of cottage cheese 100 pounds of it is equivalent in food value to over 17 pounds of pork. The economy lies in the fact that when fed to pigs skim milk produces only about 4.8 pounds of pork per cwt. and the whey which has a feeding value one-half that if skim milk is still available for feeding to pigs and calves—when cottage cheese is made from the skim milk.

While skim milk and buttermilk are valuable as food and are more valuable when directly consumed as such than they are when fed to animals there are many conditions where it is impractical to market them and have them utilized as human food. In such cases, of course, it is better to feed them to pigs and calves so as to make the best possible use of them. A market, however, for such products as cottage cheese and skim milk can be developed in most any town or city under the present food situation.

In addition to cottage cheese there are many other ways in which the manufacturer of dairy products can use skim milk and buttermilk. Condensed skim milk could be used quite extensively in bakeries, confectionery shops, and especially in ice cream factories. There are, no doubt, many creameries that are so situated that instead of receiving cream they could buy whole milk and by installing a small condensing outfit they could prepare condensed skim milk to supply ice cream makers and confectioners. It takes time and effort, however, to find and develop markets for these products so that the creameryman must expect to do considerable advertising and put considerable effort into the business. There is no time like the present for developing markets for creamery by-products. The dairyman and especially the creameryman should look into these matters carefully as they mean added profits to the creamery.

WHEN MILKING THE COW

W. H. Underwood.

It is one thing to keep a cow in the proper condition to secrete a large quantity of milk, while the ability to secure by the actual process of milking all the cow is capable of producing is quite another matter. All milkers cannot or at least do not do it. There's a reason.

The udder of a cow is a delicate organ. It is very sensitive to abuse or improper handling. Few people perhaps realize this. Hence to avoid losses it is essential to know something of its structure and the part it plays in milk production. It is erroneous to suppose that it is simply a sack into which milk is poured during the day to be drawn off at night.

The udder is just one large collection of cavities or milk secreting glands lined by many epithelial cells or small pounches and surrounded by a network of arteries and veins. Throughout the day these arteries are bringing the various constituents of which milk is composed, such as fats, proteins, water, ash, etc., to the outer surface of these small cavities where the epithelial cells select the material that will ultimately become milk producing elements and hold them available but there is no milk.

Not until the actual process of milking is begun do the numerous cells in the udder start to give up their contents which gravitates to the milk cistern in and above the teat. To prevent too rapid a flow and also to stop foreign material from working its way upward the bottom part of the teat is guarded by what is known as the sphincter muscle. The amount of milk contained in the milk cistern at any time rarely exceeds a pint. At first the water content being less viscid passes through the cell walls more readily and in larger quantities than solid particles of fat, protein and mineral matter. This explains the reason why the first milk secured is lacking in quality, that is it contains comparatively little fat and other solids. As the process of milking proceeds the bulk of the water content is given off, the remaining fluid becomes richer in fat, casein and mineral matter. It has been found that these last strippings often test as high as 10 to 12 per cent, while the first milk drawn may be as low as one and a half per cent.

Now any dairyman will have observed that a cow will not always give her milk down readily. This is especially noticeable when she has been summarily hustled into the barn by a dog hanging to her heels or persuaded to "hist" with a few tatoos of the milk stool in close proximity to her ribs. The milk productive system of a cow is so constructed that she can retaliate automatically withholding both quality and quantity of milk. In fact no cow will give her full capacity unless in response to nervous stimulation. To do her best she must be in a pleasant mood. Many little things that are seemingly trifles make a difference in the milk yield and are inevitably portrayed in the milk check For example one cow may object to whistling but like singing, another have opposite view of the matter. Few if any can be soothed with the profane language, while many prefer absolute questions to any form of entertainment. Those facts milkers should bear in mind.

There is no denying the fact that milking the dairy cow is a very important phase of her management. Even many who fully recognize this have to admit that they cannot get as large yields from their own cows as some of their hired help. Like the production of music or poetry the expert operator requires to be born such. There is little hope of the manufactured article becoming an ideal performer. At dairy shows I have watched with a good deal of interest the men who milk the cows that are on test. These men are doubtless selected for this work because of their ability to get the last drop of fat and the last ounce of milk that the cows are capable of giving. Invariably they are rapid and businesslike in their movements. Usually the slow milker is a poor milker and fails to secure the best results. Of course there are many cows not over sensitive that will do well with the average man. But the highly nervous cow is often among our best producers and requires a good milker. Such a milker is careful to observe the many little details that appear to the cow and help to produce a proper nerve stimulation. He will insist on milking his regular number of cows himself instead of changing about with other milkers. Moreover they must be milked in the customary order and at the same time each day. He will also see by careful manipulation that the animal has been milked dry. Carelessness in this respect means considerable loss in succeeeding milkings. The man who milks the cows has a greater influence on their capacity as money makers than he is usually credited with.

When the milker enters the dairy barn to milk he should be gentle, kind and pleasant and let the cows understand that they will be protected from their enemies and cared for as the milk is drawn form them.

NEED MILK AND LEAVES

People Do Not Thrive on Meat and Seeds.

Without a liberal supply of milk or leafy vegetables in the diet one can not maintain the proper state of nutrition, according to Dr. E. V. McCollum, nutrition expert and professor in the school of hygiene of Johns Hopkins university.

The proper diet, will bring about aggressiveness, ambition, and achievement in the individual. One does not need meat in the diet. The protein in milk is worth three times its equivalent weight in wheat or other grains.

Require Leafy Vegetables.

Animals will not thrive when restricted to a diet constituted solely of seed food. No animal ever was successfully raised which did not make liberal use of a supply of leafy vegetables. Experiments made with groups of domestic rats proved that if their diet was derived solely from one seed product or a mixture of seed products they would not grow and the death rate was greater, but if the grain were mixed with some leafy vegetables or dried milk they continued to have normal health.

Mankind is classified in two groups, Japanese, Chinese, and all tropical people constituting the one, and Europeans and North Americans the other. The first class has always attempted to nourish itself on seed, tubers, roots, and meats as a diet, eliminating leafy vegetables and milk. The members of this class are undersized; their span of life is exceedingly short; the infant mortality is high.

Should Continue to Use Milk

Statistics show that for many years the people of the United States have secured as much as 18 per cent of their food supply from the dairy, but in the last year there has been a decrease in the sales because people resent the rise in the price of milk and refuse to buy it. The dairy industry is a serious condition. The people are changing their dietary habit and making a serious mistake. This is particularly noticeable among the poorer classes in the congested parts of the cities. Dairy products do not constitute any part of their diet, and their condition is such that tuberculosis and various disease are the result.

The rise in the price of milk has been comparatively small in proportion to increased cost of production. Some food stuffs have increased 300 per cent in price in the last three or four years. Yet people continue to purchase meat regardless of its high cost.

The most important fact to instill in the minds of the people is this—do not reduce the dairy part of your diet.

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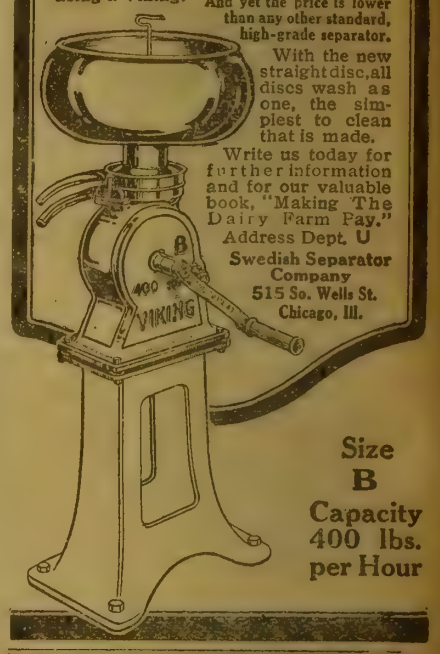

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CONTENTED MARGIE

For a five-year-old Margie had travelled a great deal. "One day her aunt remarked, "Through all her travels Margie seems quite happy and contented."

"Yes'm," answered Margie. "No matter where I go, I always find some dirt to play in."

WHY ROBBIE WAS GLAD

Mother—"Why are you so quiet, Robbie?"

Robbie (aged six)—"I was thinking how glad I am Christmas doesn't come in the summer time."

Mother—"Why?"

Robbie—"'Cause I wear such teenty-weenty little socks in the summer time."

RAISING THE DAIRY HEIFER

G. W. Barnes.

While we have made progress when we have selected good cows with a desirable sire, our experience and observation lead us to believe that this advantage may be easily destroyed by mismanagement of the dairy heifer. In other words, a dairy heifer that is well bred may never make a good cow, not even as good as her mother, if she is not properly developed in her two-year and three-year-old.

Milk production is a natural characteristic of mammals, but the amount that is natural is only a sufficient quantity to nourish the offspring until it can subsist on some other kind of food which it may be able to secure for itself. In the case of range cattle the natural period of milk production would probably average from five to six months, and the amount produced would probably not average over 8 pounds per day. In the development of the dairy cow breeders have sought to increase the amount of milk produced per day and also to lengthen the period of lactation or the time during which the cow will give milk. This ability to give more milk than nature required may be termed an acquired characteristic. It will be transmitted from the cow to her calf, but unless the conditions under which this characteritsic was developed are continued, the characteristic will be lost, and the animal will drop back to natural production. It is these conditions that tend an produce large quantities of milk and to develop a persistent habit of milking, that must be carefully considered in properly developing the dairy-bred heifer. The development of the dairy-bred heifer begins with her feeding when a calf. If the calf is well nourished and kept healthy it should develop a good appetite and should early learn to eat hay and other roughage. Hay should always be provided plentifully, as this bulky food tends to promote and develop, the digestive system of the young animals. It is advisable to feed the grain mixed with a light roughage such as cotton seed hulls, if possible, as this makes a lighter feed, and one that will be better masticated and digested. Some animals are somewhat dainty as to their food, and do not eat with relish that should always be noticeable in the healthy and well nourished animals. This is often a result of a disorganized condition of the digestive system and should be corrected without delay, as it may soon become a fixed habit and the animal that has a poor appetite will never be a profitable dairy animal. Care should be exercised in feeding not to overfeed. As a general rule, to feed more than the animal will consume is wasteful. It is a safe proposition to feed as much as the animal will consume and still wish for more, but if more is fed than will be consumed the appetite for the next meal is decreased, and the animal will soon be refusing to eat at all, or as the common expression is, will be "off feed." The best result in developing good heifer calves are secured by feeding plenty of good bright alfalfa hay during the first season, in connection with skim milk and a grain ration consisting of equal parts by weight of bran, oats and shelled corn. The calves may be allowed to run on a small grass pasture, but the best development of the calf will be secured by keeping it on a dry feed ration during the first season, especially if it is born later than the first of May. If they are turned out under the false idea of economizing, the young things suffer much from the heat, flies, and the grass being short and insufficient the calf is stunted in its growth. It begins the first winter in poor condition and it never fully recovers from the setback. When well cared for and nourished during the first season, a sufficient growth and development will result so that the young heifer may be bred when not over eighteen or twenty months old, and be ready to take a place in the herd when she is two years past, or when she is about thirty months old. This early breeding requires extra development, which can only be secured by extra care and attention and an abundance of wholesome, nutritious food—food that will produce plenty of bone and lean meat, but not an excess of fat. The tendency to get fat should never be encouraged, yet a continuous steady growth is always desirable, and any check or set-back is detrimental to the future usefulness of the animal. Early breeding is desirable, as it tends to develop the milk producing function in connection with the growth and development of the animal's body. If our dairy cows are to give more milk than the needs of nature demand, the milk producing function in its growth and development must be balanced against the development of other parts of the body. If delayed until the animal reaches full maturity, it will always remain in a somewhat dormant condition. Do not feed the growing heifers too much grain, but encourage them to eat an abundance of good, nutritious hay and pasture grass, which is the cheapest food that can be produced for dairy cows.

TYPE IN COWS

There are no infallible proofs that a dairy cows is a high producer other than the actual test with the scales and Babcock test. But there are several characteristics of cows that may be considered as a guide in choosing the animals. Among these the following according to L. W. Wing of the Missouri College of Agriculture are worth considering:

(1) Milk production by means of the milk scales and the Babcock test; (2) reproduction by breeding records.

There is only a small proportion of the cows used for dairy purposes on which such records are kept. This necessitates the employment of some other method of selection. In the breeding of high producing animals through several generations it has been observed that there are certain characteristics of the conformation which are correlated with large production. These characteristics are namely: (1 Extreme angular form, carrying no surplus flesh, but in good physical condition. (2) Prominent development of the udder and veins. (3) The symmetrical development of the barrel with large capacity. After one becomes familiar with these external characteristics it is possible to select cows producing 300 pounds of fat per year from those producing 150 pounds. The difficulty comes in picking the animal that will produce 500 pounds of fat per year as compared to the one producing 400 pounds.

The selection of animals by this method is rather uncertain. The farmer makes the largest majority of his selections in this manner and should be familiar with its limitations. In order to judge the animal with much accuracy she should be in milk and at the best stage in her lactation period. A cow that is dry offers very little upon which to base opinion as she has a tendency to take on flesh. Cows that have been underfed are in no condition to be judged. It is hard to tell what heifers will do from appearance before calving. Sometimes the cow that has all of the external appearances does not have the stimulation to produce milk. Until records are kept of more animals or some other means devised for selection, the selection by type should be used and it is up to everyone interested in dairy cattle to become familiar with it.

FIGHTING FLIES

On our farm we never fail to spray our cows regularly during the fly season. Protection from flies means more milk and butter, greater convenience in milking and more contentment for the animals treated. The only pratcical method of controlling attacks of the flies which pester the cows is by the use of some substance which is repulsive to the flies.

A good dairy cow is usually a highly nervous animal and anything which annoys her has a tendency to interfere with the production of milk. This is one reason why a dog should never be used to bring the cows from the pasture. A dog often gets them so excited that the owner loses in milk and butter fat more than the value of the time saved. Those who keep daily records of milk and butter yields can trace any undue excitement to a decrease in production.

Flies have the same effect. When the flies are bad to get away from the cows will remain in the shade and graze only enough to satisfy their immediate hunger. The result is less milk and butter fat. By keeping the flies off, the cows will graze much as they should and supplemental feeding must be resorted to. The butter fat at less cost than they otherwise would. Spraying the cows not only results in a larger flow of milk but it saves enough grain feed to more than pay for the expense for material and labor in doing the work. Unsprayed cows refuse to graze as much as they should and supplemental feeding must be resorted to. The less they eat in the pasture the more feed they will need as a supplement and the expense will be proportionately larger. How can a cow be expected to perform her duty in the pasture and at the pail when constantly covered with a blanket of flies sucking her very life blood?

We have used several of the commercial fly preparations advertised in the farm papers and all have given us good satisfaction in repelling flies. Most of them are made from coal tar products and are put up ready to use, all that is necessary is to add the preparation to the required amount of water. The expense is a small item as a very small quantity is needed for each cow. The spray mixture will not keep all those big black flies off the backs of the cows but it will keep them from doing much biting or causing much annovance.

It pays to buy a good sprayer for applying the solution. A cheap one can be bought for about 75 cents but it will take so much time and work to use it that the purchaser will be sorry he did not buy a more pratcical type. We have a compressed air sprayer which cost $5 an everyone who has a half dozen or more cows ought to get one of this kind. With one of these the chamber is filled with air and the entire herd can be sprayed in short order.

If anyone wants to mix his own solution he can do so by buying the material from a druggist. An effective homemade or home-prepared mixture can be had by thoroughly mixing one part of crude carbolic acid with three parts of crude oil. This is a little cheaper than the commercial products but it means considerably more puttering and bother in measuring and mixing. We prefer to use the advertised products.

If the cows are to be sprayed only once a day the best time to do it is in the morning so that they will be protected during that portion of the day when the flies are at their worst. Spraying twice a day just before the morning and night milking will prevent practically all trouble and save enough annoyance from stepping and tail switching while milking to more than pay one for applying the solution.

Calves being raised should be sprayed at least once a day during fly time. The odor of the spray solution will frighten them at first but they as well as the cows will soon get used to it and pay no attention to the spraying operation.—H. W.

SHADE

Don't forget that the only profitable animal is a comfortable animal No animal is comfortable during the hottest months of the year unless it has access to shade. Farm animals which must go unprotected in cold, stormy weather have my sympathy, but no more than those that have to spend the entire day exposed to the scorching sun. Fortunate is the farmer who has trees to furnish shade for his live stock; trees make the best shade. If no trees are available shade may be provided by the erection of shed-like structures, open on all sides to allow free passage of air. The roofs may be made of boards, brush, or straw. If different kinds of stock are kept in one pasture or lot, some sheds not more than 4 to 5 feet high should be provided for the hogs, sheep, colts, or calves to insure that they will not be driven out into the sun by the larger animals. Man in self-pity has created the hat, the parasol, has put sunshades on wagons, buggies, automobiles, and on some of the implements used in the fields; he has access to the shade of houses and other buildings, while the livestock, the source of much of his buying power, is too often left unprotected.

In tense heat of the sun reduces the vitality of livestock, and this lost vitality must be regained at the expense of the farmer; there is an economic as well as a humane side to this question. If you keep livestock, keep them comfortable; provide some shade.—I. D. O'Donnell.

THAT SETTLED IT

"And you broke off the engagement?" said one young man.

"Yes, not brutally, you know. But managed it."

"How?"

"Told her what my salary is."

'TIS SO

Tommy—"Mamma had a lot of things sent home C.O.D. today. What does C.O.D. mean?"

Tommy's Pop—"C.O.D., my son, means 'Call on Dad.'"

FARMERS

ARE NOW IN CLOVER

Never before have you been so prosperous. The next thing for you to do is to see to it that your money is properly secured.

Open a Saving or Checking Account with this Bank. Then you are secured against loss and your money is working for you day and night—Bank here by mail, if you wish.

Utah Savings & Trust Co.

255 So. Main, Salt Lake

W. S. McCornick, Pres.
Anthon H. Lund, Vice-Pres.
George Albert Smith, Vice-Pres.
F. M. Michelsen, Cashier.

Kill All Flies! They Spread Disease

Placed anywhere Daisy Fly Killer attracts and kills all flies. Neat, clean, ornamental, convenient and cheap. Lasts all season. Will not soil or injure anything. Will not spread, tip over or blow over. Made of metal, can't poison anything. Guaranteed effective. Lasts all season. Will last 5 years. Will last 10 years. Will last 20 years. Will last 30 years. Will last 40 years. Will last 50 years. Will last 60 years. Will last 70 years. Will last 80 years. Will last 90 years. Will last 100 years. Will last 200 years. Will last 300 years. Will last 400 years. Will last 500 years. Will last 600 years. Will last 700 years. Will last 800 years. Will last 900 years. Will last 1000 years. Will last 2000 years. Will last 3000 years. Will last 4000 years. Will last 5000 years. Will last 6000 years. Will last 7000 years. Will last 8000 years. Will last 9000 years. Will last 10000 years. Will last 20000 years. Will last 30000 years. Will last 40000 years. Will last 50000 years. 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Modern Light and Power For The Home

F. J. St. John.

Have you ever thought about the close relation that has seemed to exist through the ages between the development of artificial light and the progress of civilization.

It is true that nowadays we take up rather gingerly the question of modern civilization, in view of some of the stunts that certain members of the human race, the Huns, are performing in the name of "kultur" and of the Almighty himself. But in view of the firm conviction on the part of all of us that we are rapidly approaching a time when the Huns will be left out of consideration in all matters of consequence we shall just leave them out of this and continue our consideration of the question of the relation between the development of light and the progress of civilization.

We read of a time when, aside from the glow of the campfire, there was no after-night lighting except the primitive torch. If we trace the development of artificial light from those days up through the successive stages of the Betty lamp, the tallow candle, and so on, we shall find a pretty close relation between the development of these means of lighting and unfolding of human progress.

It is interesting to reflect that the most rapid progress—in scientific achievement, in conditions of living, in most lines of endeavor—has been made within the last thirty or forty years, or since the introduction of electricity as a source of light and power.

It is true, also, that the most radical changes and the most rapid advancement have been made in the cities where electricty has been easily available as a means of light and power, not only for industrial and commercial purposes, but for homes as well.

Now, one can have electricity on the farm, anywhere in the country districts as well as in the cities, by means of the small individual electric plants that have been developed within the past few years. Many thousands of farmers have come to use them for lighting their homes and farm buildings and for running motors and one wonders what marked advancement in the farming districts is going to result from the introduction of electricity into country communities.

The benefits of electricity to the farmer and his family are distinct and unmistakable. Electric lights about the farm home are just as delightful, from the standpoint of comfort and convenience, as they are in any city home. The relief from the care of the smoky, unsafe, kerosene lamps appeals to the housewife and she saves considerable time over the old way when she can light her home with electricity.

Electric lights are safer than the open flame lamp or lanterns and this is a valuable item, both in the house and in the barns and sheds. In the latter it saves time, too, to be able to snap on electric lights at chore time instead of carrying a lantern from place to place. And who is not anxious to save time these strenuous days of expensive labor?

While it is not strictly in keeping with the discussion of the development of light, we cannot refrain, while considering the matter of electricity for the farm, from saying a word about the value of electric power, which may be used about the farm wherever electricity is available for lighting. As a matter of fact, while the desire for modern lights generally leads the farmer to install an electric system, he and his family quickly find that electricity for power is a mighty fine thing, too. There are many jobs that require power.

For with electric power they can run small motors that will turn all the machinery about the farm premises, from the churn to the milking machine. It doesn't take much power to turn a one-sixth horsepower motor and you can run a lot of different household machines with a motor that size. The electric current from the farmer's own plant for a small motor will cost about two cents an hour. Who can say what it is worth when it is converted, by means of the motor, into energy that will do a washing, or a churning, or turn a grindstone, or a fanning mill, or any like piece of machinery about the farmstead?

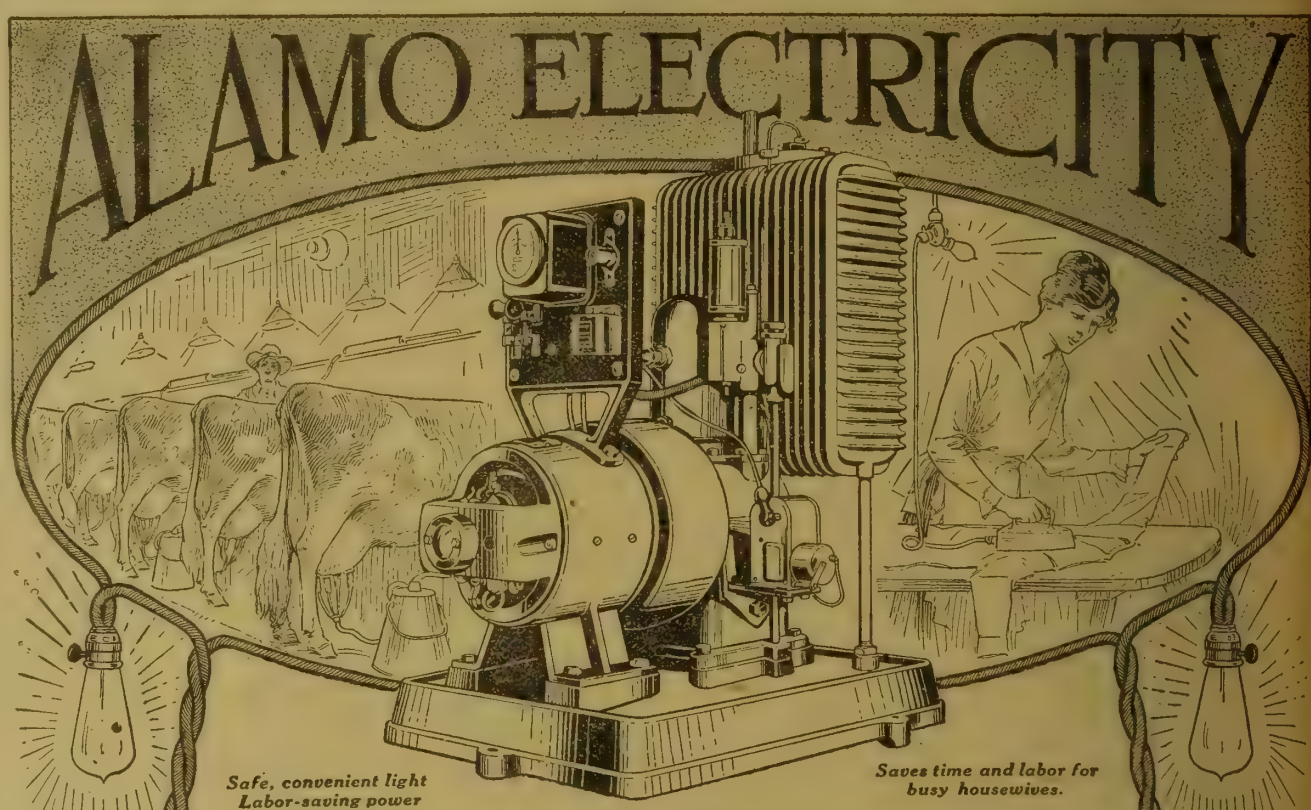
For while it does this it is relieving the housewife of a task filled with drudgery or gives her time for other work. Or it takes the place of another man doing some very necessary job for the farmer.

When electricity is used, as it is coming to be used, to operate an electric water system, then joy certainly comes to the whole household. For this pumps water under pressure and does away entirely with the old hand pumping and carrying. It makes possible a modern bathroom, hot and cold faucets at the kitchen sink, water right at stock troughs in the sheltered shed or barn, water under pressure for the fire protection or sprinkling and so on.

Going back to our original thought, the introduction of electricity into the cities marked the beginning of a long step forward in municipal enterprise. Isn't it bound to follow that its introduction into the country is going to make a pronounced change there too? Certainly it is. The introduction of electricity, with its modern lighting and its power, means more than just the employment of a lighting system whose rays are projected after a different principle. It means the introduction of solid comfort of a sort which the farmer and his family have long desired and deserve and which they are coming rapidly to enjoy.

It will be the means of saving much valuable time and labor and the means of taking from the routine household labor the monotony and the drudgery that have attended it in the past—the family washing, the

(Continued on page 7)



Why *You* Should Install Electric Light and Power

FOUR things are of vital importance to every farmer in these days of stress. Workers must be attracted to the farm. Time and labor must be saved in every possible way. Boys and girls must be kept at home. The burden on farm women must be relieved.

Electric light and power will solve these problems as nothing else can. It will operate, cheaply, dozens of farm appliances that will release labor for more productive work. It will take drudgery out of housework and make the home attractive.

Why You Should Select Alamo Electricity

All Wanted Features

The Alamo is the perfect balanced unit. It runs without vibration or noise. No special foundation needed. It is fully perfected, a plant that is past the experimental stage.

The Alamo is a single unit plant — simple and easy to operate. All parts mounted on one base. It is the efficient plant — one that supplies constant current for light and power. It is economical in operation, is built to last a lifetime and requires but little attention.

100% Factory Built

The Alamo is built entirely in our own factory. Don't confuse it with assembled plants. We build our own engines — the famous Ide Super-Silent. In actual tests this engine has proved its superiority. It is simple, silent, powerful and dependable.

The Alamo Electric Unit is the result of experience gained by men who have successfully built electric farm plants for years. Every detail has been perfected — your assurance of complete satisfaction.

Investigate Alamo Electricity today. Learn how it will give your farm the efficiency of a modern factory.

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Utah's Experimenters In Agriculture

Charles Tarry Hirst.

C. T. Hirst is assistant chemist of the Utah Experiment Station and Associate Professor of Chemistry in the Agricultural College. Long employment in both teaching and experimental work has given him a wealth of experience. Added to this, his great patience and preseverence have given him the qualities so essential to a research chemist. The courage to plod day after day on some intricate problem is no small asset. This quality Professor Hirst has in an unusual degree.

"Charlie" was born at Paradise, Utah, in 1874. After completing his grade school he entered the B. Y. C. in 1893. When he was graduated in 1896, he took up teaching in the grade schools. This he found profitable because of steady advancement. From 1904 to 1908 he was principal of the schools at Millville, Utah. In the meantime he was not neglecting his opportunities for higher education. Filled with the desire for better training he attended the U. A. C. on Saturdays and studied during his spare time.

In 1908 he discontinued teaching to become a regular student at the college. He was graduated with a B. S. degree in 1910. During his spare time and summers he worked in the chemistry department of the Experiment Station. This so added to his other experience that he was employed as assistant chemist six months before his graduation. By 1915 he had completed enough extra school work to be given his Master's degree, the first one from the Utah Agricultural College. He was also made Assistant Professor of Chemistry in the college. Later, in May. 1916, he was again promoted, this time to an associate professorship in chemistry.

During all these years Mr. Hirst has not worked without profit to the people of Utah. He has taken an active part in the wheat and flour investigations of the West, especially Utah. Another extremely important set of problems for Utah are those related to nitrogen in the soil. In these researches Mr. Hirst has been closely associated to both Dr. Robert Stewart and Dr. J. E. Greaves. The great value of these investigations cannot be overestimated. They are so closely related to our agriculture as to be fundamental.

Perhaps there is no better way of judging a man who experiments than by his publications. "By their fruits shall ye know them." Professor Hirst is a co-author for each of the following publications:

1. What for Flour Production. Jour. Ind., & Eng. Chem., Vol 4, No. 4, Apr. 1912.
2. The Influence of the Combined Harvester on the Value of Wheat. Utah Station Bulletin 113.
3. The Chemical Milling and Baking Value of Utah Wheat. Utah Station Bulletin 125, 1913.
4. The Quality in Homegrown vs. Imported Wheat. Utah Station Bulletin 137.
5. The Alkali Content of Irrigation Waters. Utah Station Bulletin 147, 1916.
6. Nitrous Nitrogen in Irrigated Soils. Soil Science, 1917.
7. Influence of Crop, Season, and Water on the Bacterial Activities of the Soil. Jour. Agr. Reesarch. Vol. 9, No. 9, May 28, 1917.
8. Some Sources of Potassium. Utah Station Circular 22, 1916.
9. Some Factors Influencing the Quantitative Determination of Nitric Nitrogen in the Soil. Soil Science Vol. 4, No. 3, Sept., 1917.

MODERN LIGHT AND POWER FOR THE HOMES

(Continued from page 6)

sweeping, churning, ironing, all such tasks.

But above and beyond all that the introduction of electricity into the farm home is going to mean a sense of well-being for the farmer and his wife, and for their sons and daughters that will bring to all of them a new vision. It will bring to them the sort of confidence and love of life that insures success. It will inspire in the young folks a pride and love of home that will help to hold them on the farm. It is going to round out life for all members of the family, combining artificial modern conveniences and natural advantages into that sort of just-right country life about which we all dream more or less.

"Is going to?" did we say? Bless your heart, it is doing it right now. There are hundreds of farmers and ranchmen in Texas today, many of them readers of this paper, who will vouch for all that has been advanced in support of the use of electricity in the country and who are glad to bear testimony as to the entire satisfatcion it has brought them in their own experience.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending July 16th.——Cattle—Receipts, 552; market, steady; prime bred steers, $12.00@13.00; dressed beef steers, $10.00@12.00; cows, $7.00@9.00; heifers, $7.00@9.00; stockers and feeders, $6.00@7.00; canners, $4.50@5.50; fat bulls, $7.00@8.00; bologna bulls, $6.00@7.00; calves, $9.00@11.00.

Hogs—Receipts, 527; market, steady; tops, $16.30; bulk of sales, $16.00.

Sheep — Receipts, 95; market, steady; spring lambs, $13.00; yearlings, $11.00; heavy wethers, $10.00; ewes, $9.00@10.00.

Omaha, July 15th.—Hogs—Receipts, 10,500; market steady to 5c lower; heavy, $16.90@17.50; mixed $17.00@17.20; light, $17.00@17.45; pigs, $11.00@13.00; bulk of sales, $17.00@17.20.

Cattle — Receipts, 7800; market steady to 15@25c lower; native steers, $12.25@18.25; cows and heifers, $8.00@8.50; western steers, $9.50@15.25; Texas steers, $9.00@12.00; cows and heifers, $7.50@11.50; canners, $7.00@8.00; stockers and feeders, $8.00@13.00; calves, $10.00@13.35.

Sheep—Receipts, 10,300; market steady; wethers, $10.00@12.50; ewes, $10.00@12.25; lambs, $17.00@18.50; yearlings, $13.00@14.00.

FROM A CALF'S DIARY

Kicked over one pail of mash.

Got my head caught in a bucket.

Yelled like blazes for mother for an hour.

Rolled my eyes at a little boy and frightened him.

Experimented on how far I could spraddle my legs.

Tangled myself in ten feet of rope.

Nibbled at a small green apple and had a tummy ache.

Refused to be hugged by an impudent hired man.—Hoard's Dairyman.

Home-Made Soaps

In households or hotels where much grease would otherwise be wasted, it is advisable to make soap. A good soap for cleaning and laundry uses can easily be made by following these simple directions. Only fats that cannot be used for human food should be used in this way.

The beginner in soap making must be prepared for variations in results, for household fats are never twice alike. Sometimes the fats will contain beef tallow, mutton fat, cottonseed oil, etc. The fats vary in amounts and in composition so that no one formula will always give the same satisfactory results. Where the ingredients vary the results will vary.

Method.

Take a clean water-tight vinegar or molasses barrel, or a clean earthen jar, large enough to hold all waste fats, household drippings, bacon skins, etc. Not a particle of fat should be wasted. All must be put into the container. When a quantity of fat has been collected it should be clarified by placing it in a clean large kettle. Add twice its amount of water. Heat until all the fat has dissolved and cooked out of the scraps. About two hours' cooking will be enough. Remove from the fire and cool. The clear fat will rise to the surface and will then be ready to be made into soap. Where ashes from hard wood can be secured, a good soap can be made by home-prepared lye made as follows:

A common apple barrel can be set on a box on which a drain board with deep cut grooves can be placed under it so the lye can be drained into a bucket. The barrel and drain should be slightly inclined to afford an easy flow. Several holes should be bored into the bottom of the barrel. A few pieces of wood are then packed loosely on each other in the bottom of the barrel. Over the wood is placed a piece of old woolen cloth or carpet. Several inches of ashes are placed on this. Then a layer of from 4 to 8 quarts of lime is added. The barrel is closely packed with moist ashes to within six inches from the top. Hot water is poured on the ashes from time to time for 24 hours. A dark coffee-colored lye will leak from the ashes. This lye should be strong enough to float a potato. If not strong enough, the lye is heated and poured over the ashes again. The ashes may be changed each day if a strong lye is desired. The lye and fat in proportions of 2-3 lye to 1-3 fat are then heated and thoroughly stirred with a wooden stick. After heating thoroughly, remove the kettle from the fire and cool. The soap will form on the surface and can then be loosened around the edges and lifted out in a solid piece. It is now ready to be cut with a wire and packed away. The soft liquid part may be used for scrubbing and rough laundry work. If the lye is not strong enough the soap will be streaky and uneven. The soap should then be returned to the kettle, new ash lye can be added, and to that some commercial lye, such a Lewis' Lye. Red Seal, etc. An inexperienced soap-maker will always test the leaked lye and if it does not readily float a potato, commercially must be added to get good soap. In the last heating of lye-made soap, table salt, one pint salt to 10 pounds fat, should be added.

Simple Home-Cooked Soap

To the average housekeeper this formula is most desirable. After the household fat has been cooked in the water and cooled, use

1 pound lye.

2½ pounds of household fats.

1 gallon water.

About 3 level tablespoons salt or 1 pint salt to 10 pounds fat.

Dissolve the lye in a kettle by slowly adding the water, stir with a wooden stick and avoid breathing the fumes. Add the fat and cook for a few minutes. Before removing from the fire, add the salt. This may be left in the kettle to cool and then cut into pieces, or it may be poured into wet cardboard molds. If [illegible] large quantities, it can be cooled in the kettle in a moderate [illegible] The next day it can be cut with a wire into the desired shape.

Caution

1. Household fats vary, so the result will vary.
2. Lye is dangerous. Do not let the caustic come in contact with commercial lye.
3. Do not let the children drink or play with ash lye.

Unboiled Soap.

This is a difficult method and one which should be used only by a person who has the patience to make several attempts. If an unknown fat or a mixture of fat is used this will require very great care. Even a slight variation in weight will change the results.

After the household fats have been purified by boiling in water and have been cooled they are ready to use for this soap.

5 pounds good caustic soap-powder.

2¼ gallons of water.

37 pounds household fats.

Place the caustic soda in an earthen jar or a tight, clean wooden barrel Slowly add the water. Heat will be generated and great care must be taken to stir with a long wooden stick and not to breathe the fumes. Let this cool to about 100 degrees Fahrenheit. Melt the grease to 100 degrees Fahrenheit, pour the lye slowly into the melted grease in a small stream continuously, at the same time stirring very thoroughly but gently until the mixture is as thick as honey. Do not stir it too long, for it will separate. The mixture can then be poured into moistened cardboard boxes or molds. Keep in a warm place for 24 hours. It will then be ready to cut with wire.—Henrietta Kolshorn, Wyoming State Leader.

When we Americans sit down to our meal of substitutes and stint ourselves somewhat in the amount we eat we should feel thankful that we have enough with which to satisfy our appetites. It is said that in Russia bread is not obtainable, potatoes in limited quantities taking its place. Flour cannot be obtained even with a doctor's certificate and sugar costs over $30 per pound. Remember that this is the condition in a country that has bowed to the will of Germany. Then consider these prices in Holland, a country that has so far maintained its neutrality: Pork, $1.10 a pound; beef, $2; sugar, 30 cents; coffee, $1.80; tea, $3; butter, $1.75; cheese, 90 cents a pound; soft coal, $24 a ton; hard coal, $30 a ton. Every week the people must secure food tickets. The apportionments for a day per person are a half ounce of tea and a half pound of potatoes. Once a week each person can get an ounce of coffee or a half ounce of tea and a half pound of sugar. We haven't much to kick about, have we?

Statistics show that sheep raisers of this country consider mutton more profitable than wool. Ten years ago the fine-wool breeds were in preponderance but that is not the case now. At the present time 45 per cent of all sheep belong to the mutton breeds. 35 per cent to the fine-wool and 20 per cent to the crossbreeds. The conclusion of the government investigators is that the tendency of the sheep industry, indicated by the above figures, is doubtless economic, and is not the result of a concerted purpose by sheep raisers to prefer mutton and lamb production to wool regardless of relative profit. We are inclined to think this conclusion is correct, for the farmer is no different from any other business man, in that he favors that branch of his business that brings him the greatest income.

When you answer the advertisements always mention the Utah Farmer.

HOME

COOKING WITH AND WITHOUT EGGS

It may not be just proper to speak of eggs as a substitute for meat. They are in themselves one of the best known and most commonly used foods. It is a fact, however, that those who eat frequently of eggs will feel little need for meat, for protein—the nitrogenous tissue-building element that gives meat, fish, cheese and milk their special food value—is also the principal food element in eggs. The latter may, therefore, be substituted for any of the other foods mentioned without appreciably altering the protein content of the diet.

There is no waste to eggs but their shells, and, unlike meat, eggs contain no elements that are converted into poisonous uric acid, and should be used in the diet often, even though they are nigh in price. Ninety-seven per cent of the egg is digested—a very large proportion as compared with other foods.

Eggs furnish some fat and are more or less a source of easily assimilable form of certain essential mineral elements, such as iron, phosphorus, sulphur, calcium, and magnesium. They are believed, also, to be rich in those vitalizing elements known as vitamins.

Very little cooking is necessary for eggs; hard boiling and frying until hard being about the poorest way to prepare them for food. Much labor, time and fuel is saved, therefore, in their preparation.

If egg prices are not too high, or—better still—if the housewife has her own hens, the average home might profitably make a much larger use of eggs.

In cooking, eggs are used in two distinct ways—one when they are served as one of the principal dishes of a meal, and the other when they are used in cakes, puddings and other desserts. When meat is a part of the meal the latter use of eggs is usually a needless waste.

Here are a few ways to make eggs go further:

The Adaptable Omelet

Omelet is a good substantial dish and goes further than eggs served plain. This three egg omelet rule will serve four people generously and can be made to serve more if cereals, meat or vegetables are added.

Take three eggs, beat the yolks and whites separately; to the yolks add ½ teaspoonful of flour, ½ cupful of milk or water, and salt and pepper to taste. Then add the whites, beaten until they stand alone—folding them in carefully. Pour into a hot well greased omelet pan or skillet, set in a moderate oven until the top is slightly set, then cook a few moments on top of the stove until a fork comes out clean and bottom is slightly browned. Fold over and serve on a hot platter. Garnish with parsley or fried bacon.

Using the above rule as a foundation an almost endless variety of omelets may be made.

After beating the water or milk into the yolks add ¾ cupful of cold rice, hominy of bread crumbs (stall, not dry crumbs), then proceed as before.

Or make the plain omelet and just before folding sprinkle the top with grated cheese.

Meats, fish, and vegetables can be folded into the omelet, for variety.

When the omelet is removed from the oven spread over one-half the surface the following mixture: ½ cupful diced, cooked meat or fish moistened with ½ cupful white sauce.

White Sauce

Put 1 tablespoonful of fat in a stew pan. When melted add 1 tablespoonful of flour, cook ½ minute and add ½ cupful cold milk, stir until thick, season with salt, pepper and paprika to taste.

Creamed Eggs.

Use the white sauce rule above and serve creamed eggs.

Into a well greased baking dish put one cupful of white sauce, break over in three eggs, and over them grate cheese generously. Cook in the oven until the eggs are set and the cheese is slightly browned.

Scrambled Eggs and Potato.

This makes a hearty breakfast dish. Take 1 cupful cold boiled potatoes, cut into small cubes and fry a golden brown; have 2 eggs stirred up with 2 tablespoonfuls of cold water and add to the potato; stir until the eggs are "set," season with salt, pepper and minced parsley; serve hot.

Scalloped Dishes.

When eggs are scarce and high the left over meats or fish may be made into scalloped dishes that do not require eggs. Use a thick white sauce made according to the following rule:

Into 3 tablespoonfuls of melted fat stir 4 tablespoonfuls of flour, cook gently until well blended, then add 1½ cupfuls cold milk. Cook until thick, season to taste.

Grease a baking dish and cover the bottom with diced cold meat. Then put a layer of white sauce, and next a layer of dry bread crumbs (preferably whole wheat); continue until all meat is used. Bake thirty minutes in a hot oven and serve hot.

Tuna and salmon are nice served this way.

Croquettes Without Eggs.

Croquettes are made with the thick white sauce and do not require an egg. Chop your meat or chicken but do not grind it; stir into the hot sauce and set aside to become cold, when it may be molded into croquettes.

Use a cornstarch batter instead of eggs for dipping the croquettes before rolling is crumbs—dissolve 6 tablespoonfuls of cornstarch in a cup of cold water and season with salt and pepper.

Cakes without Eggs

Following are a few cake and cooky recipes to be used when eggs are soaring in price:

Oatmeal Cakes

2½ cupfuls rolled oats.
1½cupfuls whole wheat flour.
1 cupful light brown sugar.
½ cupful melted shortening.
½ cupful sour milk.
½teaspoonful soda.
Pinch of salt.

Mix, roll and bake makes about 4 dozen medium size cookies.

Whole Wheat Ginger Cake

½ cupful dark molasses.
½ cupful brown sugar.
1 cupful sour milk.
1 teaspoonful soda.
1 tablespoonful melted shortening.
¼ teaspoonful salt.
2½ cupfuls whole wheat flour.
2 teaspoonfuls ginger.

Add soda, molasses, sugar, salt and shortening to the milk. Stir in the flour and ginger and bake in a moderate oven. Serve plain, with cream or with brown sugar sauce.

Eggless Molasses Cookies.

1½ cupfuls dark molasses.
1-3 cupful shortening.
¼ cupful buttermilk.
½ teaspoonful baking powder.
1¾ teaspoonfuls soda.
5 cupfuls flour.
Pinch of salt.

Heat the shortening and molasses until it simmers, set aside to cool. Stir soda into milk until it foams and add to other mixtures. Add flavoring—if ginger use 1 tablespoonful, or if spice is preferred use ½ teaspoonful each of cinnamon and cloves. Add salt and stir in the flour, roll out ¼ inch thick, cut into shape and bake.

Chocolate Wafers

4 tablespoonfuls shortening.
1 cupful light brown sugar.
4 tablespoonfuls melted chocolate.
¼ cupful milk.
2 cupfuls flour.
4 teaspoonfuls baking powder.
Pinch of salt.
½ teaspoonful vanilla.

Cream the shortening and sugar, add the melted chocolate, the salt and the milk. Sift the flour and baking powder twice and sift into the other mixture slowly. Roll out thin, cut and bake in a quick oven.

Eggless Desserts.

Here is a delicious corn meal and milk dessert, the milk taking the place of the egg that ordinarily would be used:

Indian Pudding.

4 cupfuls sweet milk (whole or skim).
¼ cupful corn meal.
¾ teaspoonful salt.
1 teaspoonful ginger.
1-3 cupful molasses.

Cook milk and meal in a double boiler 20 minutes; add molasses, salt, and ginger. Pour into buttered pudding dish and bake two hours in a slow oven, or use your fireless cooker. Serve with milk. Serves six.

Oatmeal Pudding

2 cupfuls cooked oatmeal.
4 apples cut up small.
½ cupful raisins.
½ cupful sugar.
¼ teaspoonful cinnamon.

Mix and bake for one-half hour. Serve hot or cold. Any dried or fresh fruit, dates, or ground peanuts may be used instead of apples. Serves five people.

DIRECTIONS FOR MAKING FRUIT BUTTER

There is no better way to use good apples and the sound portions of windfall, worm, and bruised apples than to make apple butter of them. While almost all varieties of apples will make good apple butter, those with distinctive flavor and good cooking quality are most satisfactory. The summer varieties also will make good apple butter, it has been found by recent tests in the United States Department of Agriculture.

If apples of coarse texture are used, it is desirable to cook them and put them through a colander or coarse wire strainer before adding them to the boiled cider. Sweet apples are sometimes used, and tart ones. Over ripe apples are not desirable.

Apple butter is made by boiling down fresh, sweet cider to half its original quantity, then adding apples which have been peeled and sliced. The apples either are added directly to the boiled cider and cooked in it until the apple butter is done, or are made into apple sauce which is cooked in the boiled cider. The cooking should be continued until the cider and apple pulp do not separate; then the butter will be of the right thickness when cold.

It takes usually about equal amounts of sweet cider and peeled and sliced apples to make butter of the right consistency. In other words, if five gallons of sweet cider are used, it should be boiled down to two and one-half gallons, and five gallons of peeled and sliced apples should be added, either raw or made into apple sauce.

Two things essential to making good apple butter are: Long, slow cooking (four to six hours), and constant stirring.

If sugar is used it should be added after the cooking of cider and apples is about two-thirds done. About a pound of either white or brown sugar is the usual amount per gallon of apple butter, but more or less, or not any, may be used to suit the taste.

Apple butter is spiced according to one's preference, about half a teaspoonful each of ground cinnamon, cloves, and allspice for each gallon being a common mixture. These are stirred into it when the cooking is finished.

While still boiling hot, apple butter should be packed in hot sterilized glasses, glass jars, or crocks with tightly fitting covers, and be sterilized in steam as follows: Set the containers, filled and with tops on, in a vessel fitted with false bottom and deep enough to hold them, pour in a little water, put on the cover to hold in the steam and set over the fire. Begin to count time when the steam starts to escape, and after five minutes (ten minutes for half gallon, or 15 minutes for larger containers) take the containers out to cool, then set them away for future use. Do not disturb the covers until the apple butter is to be used. If the covers do not fit tightly place waxed or oiled paper in them to make a tight fit before sterilizing is done. This sterilizing is done for the purpose of preventing any spoiling of the top layers of apple butter and also to take the place of a layer of paraffin which, though a good seal, is now quite expensive. All fruit butters and similar products should be sterilized in the same way.

Good apple butter is often made without the use of cider. Enough water is added to the peeled and sliced apples to make a thin apple sauce and this is allowed to cook very slowly, or simmer, over a low fire for three or four hours. Brown rather than white sugar is usually used, being added when the cooking is two-thirds done. The sugar which settles at the bottom of barrels of New Orleans molasses is excellent for this purpose. A pound per gallon is usually sufficient but this amount is a matter of taste as is also the amount of cinnamon, allspice, and cloves to be added when the cooking is done.

Pear, plum, and peach butters are made without cider. The pears should be ripe enough to cook up well and after being peeled, cored, and sliced, are put into a preserving kettle with a little water and cooked slowly until soft. The sugar is then added, one cup to one quart of sliced pears, and cooking is continued very slowly, with frequent stirring, for one and one-half to two hours. The butter should then be smooth and as thick as thick apple sauce. A little lemon juice and ginger and cinnamon or other spices to taste, should be well stirred into the hot butter. Pack while hot in hot sterilized containers and sterilize in steam as mentioned for apple butter.

Wash the plums and place them in a preserving kettle with water enough barely to cover, and cook until soft. Then put them through a colander

of coarse wire sieve to remove the seeds and skins, and to each measure of pulp add three-fourths measure of sugar and cook slowly with frequent stirring until the butter is as thick as desired. This amount of sugar makes a fairly sweet product, and if a more tart butter is desired the amount of sugar should be reduced. Cinnamon, allspice, and cloves may be added according to taste. Plum butter should be packed hot in sterilized jars or glasses and then be sterilized like apple butter.

For peach butter, put the peaches in a wire basket and dip in boiling water a few seconds until the skin slips—test by raising peaches out of water and rubbing the skin with fingers—then dip into cold water and peel and pit the fruit. Well-ripened freestone varieties are best. Mash the plup and cook in its own juice without adding water. If it is rather coarse put it through a colander or coarse wire seive to make a butter of fine texture. To each measure of pulp add one-half measure of sugar and cook slowly and stir frequently until the product is of the desired thickness. The meats of several pits may be cooked either whole or sliced in each gallon of butter. While still hot pack in sterilized jars or glasses with tight-fitting tops and sterilize like apple butter, or cover with hot paraffin.

Apricot butter may be made in the same way as peach butter.

Garfield (peach-plum) butter is made of two-thirds plums and one-third peaches. Pare, pit, and slice the peaches, and if the plums are freestones, remove the pits. Cook the peaches and plums together slowly until soft, and rub through a colander or coarse sieve. If the plums are clingstones, boil them with the sliced peaches until soft and rub the pulp through a colander or sieve. To each measure of pulp add three-fourths measure of sugar, cook slowly and stir often until of the right thickness. Pack hot and sterilize like peach butter.

Apple butter with grape juice.—If a grape flavor is desired in apple butter it may be obtained by the use of grape juice. To each gallon of peeled and sliced apples cooked into sauce and strained, there should be added one pint of grape juice, one cup of brown sugar, and one-quarter teaspoon of salt. These should be cooked slowly and stirred often for two hours or until of the desired thickness; then stir in one teaspoon of cinnamon and pack hot into hot containers and sterilize as for other apple butter.

Apple butter with lemons.—Slice four lemons, cover with water, and let stand over night. Next morning put them into a preserving kettle and add eight pounds of apples, pared, cored, and sliced. Cook for one hour, add three pounds of sugar, and cook slowly with frequent stirring one and one-half hours longer, or until of proper thickness. Pack hot in sterilized containers and sterilize like apple butter, or cover with paraffin.

Peach butter with lemon juice.—Pare, pit, and slice 15 pounds of peaches, put into a preserving kettle, and bring slowly to a boil in their own juice. Cook 45 minutes and add five pounds of sugar. Cook 15 minutes longer, add the juice of one lemon, and boil one minute longer. Boil slowly and stir often. Pack while hot and sterilize like peach butter.

Peach butter made with dried and canned peaches.—When ripe peaches are not available, peach butter can be made from dried and canned fruits. To each pound of dried peaches use two quarts of canned peaches. Soak the dried peaches in water several hours and cook until tender. Add the canned peaches and rub pulp through a colander or wire seive Stir two and one-half pounds of sugar into this pulp and cook slowly stirring often, for two hours or until of right thickness. Pack while hot and sterilize like peach butter.

To the People of Utah

TO CLEAR up any confusion that may exist in the minds of housewives concerning food conservation, the following definite program of food saving is issued with the explanation that frequent changes are made necessary according to the needs of the Allies and our own people:

1. All kinds of staple foods, especially wheat, meats, fats and sugar should be most economically used. Use substitutes for these four commodities.

2. No food should be hoarded. Hoarding is the holding, contracting or arranging for food by any person in excess of his reasonable requirements for use or consumption by himself and dependents for a reasonable time. This does not refer to stocks of home-grown vegetables and home-canned or preserved fruits.

3. All householders who can entirely eliminate the use of wheat until the next harvest about September 1st, should do so.

4. Householders who are obliged to use wheat should not use more than a total of 1½ pounds of wheat flour or prepared wheat, in any form, per person per week, including the wheat flour in Victory Bread, and including the wheat flour or prepared wheat in crackers, pastry, macaroni, breakfast and other foods.

5. Victory Bread is bread manufactured by bakers under the rules of the United States Food Administration. In estimating flour consumption, 1¾ pounds of Victory Bread may be considered equal to 1 pound of wheat flour.

6. In buying wheat flour an equal weight of other cereals as substitutes for wheat flour must be bought pound for pound. This is the 50-50 Rule. In buying mixed flours, the substitutes in them may be counted so that a smaller proportion of substitutes may be bought with these flours than with white flour. In buying graham and whole wheat flours (containing not less than 95 per cent of the entire wheat) 6-10 pounds of substitutes shall be purchased with every pound of such flours.

7. Wheat flour substitutes are hominy, corn grits, cornmeal, corn flour, edible cornstarch, barley flour, rolled oats, oatmeal, rice, rice flour, buckwheat flour, potato flour, sweet potato flour, soya bean flour and feterita flour and meals.

8. Householders in towns and cities may not buy more than ¼ of a barrel of flour or 10 pounds of sugar at any one time. Householders in rural districts may not buy more than ½ of a barrel of flour or 25 pounds of sugar at any one time. In no event shall any purchaser have more than 30 days' supply of either on hand.

9. Householders should not use more than ¾ pounds of sugar per person per week.

10. In addition to the above, however, sugar may be used for home canning, and will be available to the householder for that purpose upon signing a certificate that such sugar is desired and will be used only for that purpose.

11. No wheat flour, or prepared wheat in any form, should be used for any purpose other than human consumption.

12. Meats of all kinds, particularly beef, should be most economically used, eliminating all waste.

13. Fresh milk and milk in evaporated and condensed form and cheese may be liberally used.

14. Butter may be used for normal consumption.

15. To save transportation local supplies should be grown and used.

U. S. FOOD ADMINISTRATION
OF UTAH

June 26, 1918.

This space is contributed to the winning of the war by

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San Francisco

CAN HOME PRODUCTS FOR HOME USE

Unless home canners have a certain market for their goods, they are advised by the Food Administration not to attempt commercial canning. There are many difficulties in the way of disposing of small amounts of canned goods.

Home canned and preserved goods cannot be purchased or accepted as gifts for the Army or Navy. No governmental department is permitted to accept any article without paying for it. Supplies of this kind must be purchased in reasonably large units and must be uniform both as to ingredients and containers in order to simplify inspection and packing and guarantee the keeping quality of the goods.

However, every additional million jars or cans that are filled by housewives for home use will release an identical quantity of commercially canned goods for export. There will also be saved the labor, space on freight cars and cost of transportation that would mount up if factory-preserved foods had to be sent broadcast throughout the country, instead of being shipped in large blocks to cantonments or abroad.

Dry, can and preserve everything possible and store in every available container. If you have a surplus of produce or can put up a surplus of fruits and vegetables, share your surplus with others. Such sharing of foodstuff is not only neighborly and human but is true conservation, as it helps in the solution of the food and transportation problem. Housewives might well adopt and adapt the scout slogan to "Feed a Soldier's Family."

FIRST AID IN THE HOME

The mother of a family of children should have well catalogued in her mind the remedies for the minor ailments and accidents of childhood, as in many cases a little first aid will save a long train of serious results from accidents or symptoms of illness. A medicine cabinet, and a mother who knows how to use its contents is a pretty effectual safeguard to a family of growing children, and will also often save the expense of a pretty stiff doctor's bill. Even in the matter of stubbed toes and cut or bruised fingers infection may result from negligence to cleanse the wound and apply a compress or bandage to guard against infection.

The medicine cabient should always contain rolls of sterilized bandages, either of old muslin, or the sterilized gauze which may be

(Continued on page 13)

Economical Methods of Feeding Silage

Clement White.

While the value of silage as a feed for livestock has become generally recognized, it occasionally happens that the farmer who has recently erected and filled his first silo is in doubt regarding the quantity of silage to feed different varieties of livestock, and how to balance it with other feeds in order to get maximum gains from the ration.

Silage may be fed as soon as the silo is filled; but several days must elapse before the cut corn (or other silage crop) becomes good silage. As a general rule stock will not eat silage readily until they become accustomed to its acid taste. It should be fed in small quantities at first, mixed with other feeds, the amount being gradually increased until each animal is receiving a full silage ration. Best results are usually attained by feeding silage twice a day.

The farmer who feeds silage to livestock should take into consideration the fact that each animal has an individuality of its own, and should be fed according to its capacity. The careful feeder keeps watch on each animal in the herd and notes its appetite.

The quantity of silage required by various kinds of livestock averages about as follows: Beef cattle—25 to 40 pounds per day; dairy cows—30 to 45 pounds; young stock, cattle 10 to 20 pounds; sheep—5 to 8 pounds; hogs 4 to 6 pounds; horses and mules—10 to 15 pounds.

Silage has become the dairyman's best asset. When fed in conjunction with other feeds silage will permit the milk cow to produce the maximum quantity of milk. The dairyman who feeds silage as a whole ration is making a mistake; for a balanced ration is a necessity. There are several combinations of silage and supplementary feeds which give good results when fed to dairy cows. A satisfactory ration consists of silage 35 pounds, 8 pounds ground oats, 10 pounds alfalfa hay, 3 pounds corn and cob meal and 1 or 2 pounds linseed meal or cottonseed meal.

Another ration which has been proven successful consists of alfalfa, clover or cowpea hay, 10 pounds; 30 pounds corn silage, 2 pounds cottonseed meal, 1 pound linseed meal and 5 pounds corn and cob meal.

A farmer who milks an average of 35 cows during the winter months explains that he prefers a ration of 40 pounds silage, 2 pounds cottonseed meal, 2 pounds linseed meal and 10 pounds of mixed hay.

When bran is available, it is a good plan to mix it in the ration. Bran is of great value when fed with silage. An excellent ration in which bran is used consists of 30 pounds silage, 8 pounds mixed hay, 3 or 4 pounds bran, 5 pounds corn meal and 2 pounds linseed meal.

The dairyman is anxious to feed the most economical ration; this is why he should feed the protein feeds which are cheapest and easiest to secure. Where cottonseed meal is available, bran will not be needed. Linseed meal is also a dependable protein feed. Silage made of corn, Kafir, cane, etc., is a carbohydrate feed, and is "bulky." In order to make a balanced ration a concentrated portein feed must be given. Linseed meal, cottonseed meal and bran are the best concentrated protein feeds to use. Hay is needed to finish out the bulky ration when best results are sought after. Where hay is not available, stover or fodder may be given instead. The dairyman should observe closely the effect of the ration upon his cows, and change it if necessary. Silage is a necessity where dairy cows are kept. It is a succulent feed and furnishes "green grass in mid-winter." No dairyman has yet produced as large a volume of milk from dry feed as from green, succulent feed. It has been proven repeatedly on dairy farms that the period of lactation can be considerably extended, and the high production maintained to a greater extent, with green feed than dry feed. The production of milk is greater from silage than from grass, due partially to the fact that in feeding silage the cows get an even, well-regulated ration.

The man who has some beef steers on hand is interested in the feeding of silage to the animals. If the silage was made from corn which had eared well (and for this reason is rich in food material) it may be depended on for the bulk of the ration. Alfalfa hay together with a small quantity of cottonseed meal (or other concentrated protein) will balance the ration. A ration in which alfalfa, clover or cowpea hay is used with silage is much more economical than silage alone. As a general rule, fattening cattle that receive silage as the sole roughage do not continue to make profitable gains for more than three months. If the best results are desired from silage as a feed for fattening cattle a concentrated protein feed is essential. Without it animals will not thrive.

In case silage was made from a crop which was light in grain, it will be advisable to feed shelled corn or corn chop to fattening cattle if maximum gains are desired. A ration of corn chop, alfalfa or clover hay, linseed meal and silage will be satisfactory. It is taken for granted that in this era of high-priced grain the feeder will select the feeds most plentiful and economical for his section of the country. That is why various feeds which may be given with good results along with silage have been mentioned.

Silage is unexcelled for feeding stock cows, steers, heifers or calves. Wheat straw may be given "stockers" to balance the silage ration. Silage 20 pounds, straw 18 pounds and linseed meal 1 pound has been fed with good success. The following ration will cost a little more, but will give still better results: Silage 36 pounds, straw 15 pounds, cottonseed meal 1 pound. A bunch of cows were wintered on this ration. Each cow gained 1.34 pounds per day and were strong and thrifty when spring finally came.

Silage can be fed to hogs with profitable results. Phenomenal gains have been secured by feeding silage to fattening hogs, while brood sows, pigs and stock hogs thrive on it. The brood sow that is fed silage farrows strong, healthy pigs. Succulent feed results in a full udder when her pigs are farrowed; young pigs require a large milk flow if their growth is to be rapid. Considering the high price of pork, silage can be fed to hogs with very profitable results. The man who expects to market his brood sows and stock hogs because of the high price of most feeds should consider the matter of wintering the animals on silage, with only a small quantity of supplementary feeds. Silage will enable hog raisers to "keep in business" even though corn remains high in price. A little silage with the grain will be very beneficial.

In most sections of the country sheep breeders have given silage a "try out." It is well to remember that sheep are delicate animals (compared with cattle and require care and attention in feeding. When ensilage is fed to sheep it must be bright and free from mould, otherwise trouble is a certainty. Bright silage, chopped fine, however, is relished by sheep, and agrees with them.

Some men recommend silage as a feed for horses and mules; other farmers would not think of allowing "Old Dobbin" to eat canned pasture. Farmers are aware of the fact that care is required in feeding anything to horses. Providing no mouldy or spoiled ensilage is mixed with the ration, from 10 to 15 pounds silage can be safely given to horses and mules. Gradually accustom the animals to the feed by giving small amounts at a time. Never allow horses, mules or sheep to eat frozen or spoiled silage.

Silage is a good feed for poultry. Owing to the fact that "biddy" develops a greedy appetite with the approach of winter, a ration of silage is needed for her consumption. Chickens should be given all the bright silage they will eat. They will do much better when eating silage than when receiving only dry feed.

There is some doubt regarding the feeding value of silage made from different varieties of crops. The man who was so fortunate as to fill his silo with corn may feel that he is supplied with the best silage obtainable. But there is no reason why the man who grew Kafir for silage should despair. In a recent test kafir silage gave better results than corn silage when fed to beef steers.

Serviceable equipment should be provided when silage is fed. It is a poor policy to throw such valuable feed on the ground. Feed troughs can be built without great expense. They are a necessity for economical results.

Since silage has been introduced throughout the country, the real value of the modern feed carrier has become apparent. It enables the farmer to feed his stock with a minimum of labor, and permits him to get through with the work of feeding in time to attend to other matters.

There is no reason why silage cannot be fed successfully upon every farm in the country. Silage is a necessity; before the war is over we will realize the necessity of reducing so far as possible the cost of feeding livestock. Silage is the most economical feed obtainable, and, everything considered, is also the most efficient.

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PLEASURE ON THE FARM.

This brief article would have been headed, "Keep the Boys and Girls on the Farm," if it had not been that this subject has been treated so often and so elaborately that many readers do not stop to investigate when they see these words posted over an article. And would you believe it, editors have come to feel so much the same about this matter, that when an article comes in under this head, they are inclined to give it a quick glance and exclaim, "Oh my!"

Just the same there a whole lot of people who really do not know how to keep the boys and girls on the farm and to keep them contented with farm life. And what applies to the boys and girls, also applies to their mothers. Men are not inclined to be careless and indifferent, coarse and unapreciative of the beauties of life and the things that make life enjoyable, yet they are more inclined to be contented with the necessities of life and not to long for the luxuries. For this reason, they are not always so quick to see the needs of the household as are the wives and children.

Many a farmer is finding it hard to keep his children happy right now unless he can furnish them some of the enjoyable things of farm life. Many a son is unhappy because he does not have an automobile or a good driving horse, and we can hardly blame him. And many a farm girl is unhappy because the home is not made modern and attractive like the houses she sees in the city.

A farmer's wife who for several years has felt a little dissatisfied with her country home because she was not supplied with more of the things that go toward making life on the farm pleasaurable, said "I have my big kitchen porch screened in this summer, providing a place to work and room for the dining table. We do enjoy it so much. Husband has gotten a new automobile, and now I would not move to town for anything." It required just two improvements in that farm home to make the wife and mother contented with her profession I imagine of the two, she is prouder of the screened-in porch, for she uses it oftener than she does the car. However, any busy woman would appreciate a means of travel that will take her to town and back again in a few hours, where before it required nearly a whole day with a quiet family horse.

The screened-in porch is not beyond the means of any farm family. One would be surprised at what a low cost a farm house can be well screened. And the upkeep is not great for even if the screens must be re-covered every three years, the wire screening is the least of the cost, after the frames are provided. And, say, women readers, you can re-cover your screens yourself if the men folks are too busy. Your editor never thinks of asking a carpenter to come in and cover window or door screens. It's just as simple as making pie, if you get interested in the work. You know there are a whole lot of things women can do if they "set their heads to it," and right now when the war has called so many men out of the American homes, women are expected to do a lot more kinds of work than they formerly did. And when the work is not such as to tax the woman's strength, there's no harm in her doing it. People are not surprised at seeing women doing many kinds of work now that men formerly did. If women in the cities can go into factories where women once dared not think of working, and do the work our men used to do, why should a farm woman blush at being caught at a minor carpenter's job like repairing screens, putting new boards in the back porch, and such like, while the husband is working overtime in the fields.

I imagine I see the farmer giving a wink of the left eye now when they watch the women folks meandering into the cow yards at milking time, because there are several of the women and only one man to keep up the work in the fields. Some of the people who have been firm believers in the idea that milking is a man's job, have come over and said that it surely would be unfair for the women folks to leave the milking until dark for the lone-hnded farmer to perform after his long day's work in the field.

A right good sort of wife will surprise her husband by having all the chores done these summer days when the good man comes from his hot job in the corn or hay field. And it may be this attitude will induce him to return the surprise by providing some of the modern and longer for things for the home. Who knows?—F. M. A.

Are Your Machines Well Oiled?

Now is the period of heavy work for farm machinery. It is the time when first class oil means a tremendous lot to the man who wants to keep going until the job is done.

There are three special oils for farming implements on which you can absolutely rely —Golden Harvester Machine Oil for slow moving and high speed bearings—Green Harvester Oil for open bearings, and Jersey Separator Oil for high speed, belt or hand driven machines.

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SALT LAKE

WHAT TOOLS AND FARM IMPLEMENTS MEAN TO THE FARMER

U. B. Atchison.

We have made casual mention of the prodigality and extravagant waste of good, hard earned money, due to carelessness and shiftlessness in caring for and repairing of farm implements and tools.

In traveling over the country, the ordinary observer is unfavorably impressed with the methods so often used on our farms in the taking care of machinery. To our mind, the general prosperity of a farmer may be determined quite accurately, by note of the manner in which his machinery, implements and small tools are taken care of. Poor care means an early purchase to replace those articles which have given out before their full usefulness has been given, as well as time lost from time to time in making repairs, etc.

Properly cared for implements are those which have, in the first place, been well selected, kept in good repair, oiled thoroughly, and well cleaned before housing. All wearing parts should be well greased when not in use, to prevent rust.

When we speak of "housing," we do not mean to pile everything, indiscriminately, into some tumble-down shack, or under a leaky roof, but we mean to provide a building for the express purpose of taking care of the tools when not in use. This should have good sides and a thoroughly tight roof. We would suggest large doors on the side, that binders, gang-plows, hay press, or other large pieces of machinery may be put away with the least possible effort. If some judgment is used in putting away first those articles which will be used last, there will be much less bother when it comes to getting things out, as needed. This plan will also make it possible to store away in a much smaller building than will be necessary if a haphazzard method is followed.

Do not forget that the implements and machines represent an investment, and that when exposed to the weather they deteriorate rapidly. Dew, rain and sunshine will often cause a greater deterioration in expensive machinery than will active use. To leave the implements at the end of the rows, or in the field without shelter means great loss. No farmer can AFFORD it.

The saving in time is a great advantage in having a tool-house and using it. When the implements, large and small, are always left in the tool-room your helper knows where to find them, and does not lose time looking for the wrench, the shovels, the oil can, etc.

OVERHEAD CHARGES

The successful business man watches carefully to see that the overhead charges against his business do not become exhorbitant and take all the profits. Many a business venture has been wrecked for lack of just that care. Too small a business with too big a rent to pay or too much paid for supervision, has shortened the life of many a commercial venture. Advertising pays, but goods must be sold to pay for the "ad." and there must be goods to sell before the "ad." is justified. These are business principles well understood and always considered by conservative men.

These same principles apply with equal or greater force to the business of farming, and yet how often they are neglected by these very business men when later they have gone in for farming. A man who has been earning $1500 or $2000 a year in some business line buys a 10 or 15 acre apple orchard and moves out onto the "farm." He does not expect to do much of the manual labor. He can hire that. He expects to "supervise" the work and receive the profits. Does not stop to figure that the gross returns from an acre of apples will not average over $400 to $500 and the "supervision" charge alone will amount to $100 to $150 per acre. This would make a charge of 25 per cent to 30 per cent in one item with nothing yet for rent, taxes, labor, supplies and risk, to say nothing of profits. And it would be just as well to say nothing about profits for there would be no profits. No business on earth could stand that charge and succeed. And later when a sadder and wiser man goes back to the city and starts over again he usually tells his friends that there is "no money in farming" and he is right—there is no money in farming with that kind of management.

Another city man gets the dry-farm fever, acquires some land and then put in about $6,000 worth of steam plowing and harvesting machinery and thinks he is on the road to wealth. He usually is "on the road" but going in the wrong direction and going fast. He forgot to figure about $500 interest on investment and about $2,000 depreciation and repair charge on that machinery. A $2,500 "overhead" charge on one item makes a big hole in the returns on even the size of farm that the machinery will handle.

And yet there is money and good money to be made in both apple-raising and dry-farming if conservatively handled, but they must be handled in the same way that other successful business is handled, care being taken to keep down the overhead charges.—R. E. Smith.

TO PREVENT GRAIN LODGING

Dr. H. E. Horton.

Trips over the country at this time will show some of the grain fields in which the spring grain is bowled over and lies flat on the ground. This is known technically as lodging. Depending on natural conditions and the wit of the farmer, the loss from lodging is large or small. Grain lodging is no new thing, it is a phenomenon easily explained; it is something fundamental, something that has endless relationship to conditions of soil, weather, standing room, specific qualities of the plant.

To be specific and practical, lodging is induced by rank growth, too thick sowing, not enough sunlight, excessive supply of nitrogen, improper preparation of seed bed and over irrigation. There are certain practical unsable things to do to prevent lodging and they divide themselves naturally into plant breeding methods along histological lines and tillage methods. Certain cereals are bred for resistance to lodging, the elements in the problem being root system, stalk proportion and structure, absolute and relative relationship of lowest node, thickness of stalk and its walls leaf relationships, etc. The famous John Garton of England has worked to develop along biological lines, a lodging resistant variety of oats. He has increased the number of vascular bundles corresponding to the steel frame in the skyscraper, until he has an oat with twenty one bundles, as compared with the ordinary oat with eleven bundles. He has thickened the straw walls.

These things are in the hands and power of every man who will think. The seed bed must be firmed and well drained. The seed should lie on a firm foundation and be covered lightly with a porous layer of soil, firmed with a special roller or rather a corrugator, but when time permits nature may be relied upon to do the work. The seed bed should be deep to furnish rapid drainage of water away from the top soil layers. The best and surest way to secure this condition is by subsoiling, not simply deep plowing, but subsoiling. The too rich upper soil layer that would cause rank growth and induce lodging is remedied by bringing poor soil to the top by subsoiling to mix with the rich upper layer. When rotation is practiced the position of the grain might induce lodging, such as may be expected after a deep rooted nitrogen gathering crop. The use of the subsoiler will remedy this condition.

Too thick a stand is always in danger of lodging. Fields with broadcast seeding do not lodge so readily as do drilled fields. Cutting down the seed quantity, when using the drill for seeding tends to prevent lodging. Fertilizers also play a part; liberal applications of nitrogenous manures, or the nitrogenous rests from other crops will induce lodging. The farmer should make up his mind that he is unwilling to stand any losses from lodging. Buy a subsoiler and arrange to deep-work the land. Get a soil packer and work for the firm seed bed. Arrange to plant a lodging resisting variety of oats. Get an attachment for the cutter bar of the harvesting machine to use in the event of any lodging.

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Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weigh off the horses' necks—taken the weigh off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

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MURRAY, UTAH IDAHO FALLS, IDAHO

SAVING PERISHABLE FEED

Barn room and the proper shelter for crops is always important on the farm. The seasons being the unknown quantity in the equation it is often a difficult matter to know in advance just how much room will be needed to store hay, stover, grain and other feeds. For this reason many farmers, when crops are especially productive, may not have room for perishable crops and may thus be forced to sell at low prices or possibly risk the feed in a temporary and perhaps an unsatisfactory place. This of course is unfortunate and should be avoided if posible.

This is a year when special care should be taken to save all the feed grown. It will all be needed. Those who have a surplus should save it in such a manner and market it at a time so that good prices will be had. We may never see feed as high and as scarce as it was last winter and is now but we are not likely to see cheap feed soon.

Those who are able to save a surplus of feed might well consider increasing their flocks and herds. The country must not have its meat and milk animals depleted because of war conditions. Every animal possible ought to be raised to maintain ourselves and our Allies. Those who can raise feed are the men to raise the animals.

It is no uncommon thing to have some despised weed come to the front as a plant of great economic importance. Witness the sweet clover, for instance. More recently it has been found that the yucca plant, that grows so abundantly in the desert lands of the United States, can be used as a substitute for sisal, hemp, or jute for the manufacture of binder twine, cotton bagging and other fabrics and cordage. Experiments made by the government show the wonderful possibilities of this plant, and capitalists are preparing to enter on the enterprise of making use of it. If the plans prove out, it is thought farmers will be able to sceure binder twine at lower costs and the shortage of bagging material will be relieved.

THE FARMER AND WORLD CIVILIZATION

(Continued from page 3)

more rapid than at the place where liberty of thinking and acting give way to license. Not one unprotected place must be left in our armor of character. If there is anything father and mother may envy it is to hear this said by the boys and girls they love so well: "My father says so, and I know it is right if he tells me it is." Or, "Mother has taught us children to do so and so. We think she would not ask us to do it if she did not think it best." In other words, it is everything to have the confidence, the trust and the resepct of the young people at home and in the community.

We hear it said frequently that graft is rampant in this country at the present time. That all men are trying to make all they can out of the situation into which we have come. It may be that here and there a man may dip his arm too deep into the public treasury; but I like to think, and I do believe, that by far the greater part of our men of today are doing their best to be true and unselfish and patriotic. Whether that be so or not our own individual lives must be free from everything that might look like fraud or deception, even in the smallest things of farm life. We can scarcely carry this too far. When only a few are false the rest must work the harder to be true and brave and strong. Civilization must not go down. The farmer must do his part to prevent such a catastrophe.

Frequent cultivation of the soil will be necessary to save moisture. When the surface soil is cultivated the freshly plowed soil covers the capillary openings and act as a blanket to prevent evaporation.

LIVE STOCK

PIG MANAGEMENT

By Edwin Houston.

There are two features of pork production that are of the most importance, and that if thoroughly mastered will nearly always assure success in the fine art of hog raising. They are "Pig Management," and "Feeds and Feeding." Either one of these questions could be used as the subject for a whole library, and as my article is on "Pig Management" I will confine it to the period just before and immediately after farrowing, as that is the most critical time.

Don't Neglect the Sow After Breeding Her.

The physical condition of the sow at the time she has been bred and during the period of pregnancy is most vital to the health and vigor of the future litter. This is usually a time, too, in a sow's life that is neglected and when nearly any kind of feed and care is considered good enough for her. Part of this neglect is caused, no doubt, by the general teachings of hog men, that when a sow is too fat she will not raise the best pigs. This is so, alright, but it is also true that when she is to thin she will not do her best or even when she is carrying the right amount of flesh, but when that flesh is not of the right kind. I mean by this, when the meat carried is composed of too large a per cent of fat and not enough muscle.

Don't Get the Pregnant Sow Too Fat.

The successful litters are usually had from those sows that are rather thin at the time of breeding and are gradually gaining in conditions and continue to gain until farrowing. These gains should be made while the sow is in a pasture where she can take plenty of exercise and should be made from feeds that have a reasonable amount of protein in them, and if possible are succulent feeds. What should be carefully avoided is to feed and handle the pregnant sow so as either to make her lazy and fat, or to let her get thin and unthrifty. The first condition will cause the loss of many pigs by overlaying and the second will tend to prevent a large enough milk flow. When either too thin or too fat the pigs will not be born with enough vitality to carry the largest number through the waning stage and when the sow is in either of these undesirable conditions the pigs are much more apt to have scours, sore mouth or some other of the troubles that little pigs are heir to.

It will be well worth your while to give the sow just a little extra care and attention just before she farrows. If she is in the right physical condition at this time she will be active, with plenty of flesh on her but not much fat, and if you can put her in a green lot with an individual hog house in it, there is every chance that she will do the very best that her breeding and individuality calls for. Some sows, no matter how carefully handled, have a tendency to get constipated before farrowing, but a little epsom salts given in the slop for a few successive feedings will put them right again.

Many of the pig losses occur while the sow is farrowing. It follows then, that if carefully watched at this time, she will save more pigs. Don't let yourself or anything else disturb her though or irritate her in any way, as this may be disastrous.

Perhaps you have had a sow get away in the pasture and make her own nest and farrow without your help or attention, and if the weather was fair you might have been surprised to find that she saved every pig farrowed. Rarely will one be overlaid under such conditions.

For a sow to kill her own pigs either by eating them or by overlaying them is against the laws of nature, to say the least, and can only happen by a man-made, artificial environment and one not suited to her natural habits of life. Men are compelled to put swine under artificial conditions in order to make them the more profitable, but it is well to do this without breaking any fundamental natural laws of hog life. Most pigs are lost by lack of an understanding of these laws and the resulting unintentional abuse of the sow and litter.

Take the breeding life of a wild sow, for instance, she is first bred when nearly mature but still putting on flesh, and if she is fortunate in her foraging she will be in rather high condition when farrowing time comes, but will still be active and alert. She makes her own nest on the ground in some secluded spot and stays with her litter for the first few days very closely and her main sustenance is water. As the litter grows older she gradually forages for more food and when the pigs have gotten larger still they go out of the nest with her and begin to eat what she eats. Not until the pigs are eating well and are not dependent on her does she wean them. At weaning time she is very thin, nevertheless, she will usually be bred again as soon as she finds enough food so that she can pick up in flesh and then if the woods are provident she will be in rather good shape by the time the litter arrives.

Of course, we can improve greatly on the profitableness of the Texas wild hog and on the number of pigs farrowed. We don't let our sows fight with wild animals for the lives of their young, nor should we let them suffer for food as the wild usually do, but many a farmer can take lessons from a wild sow on pig management.

The individual hog house is the best at farrowing time because it isolates the sow from other hogs and makes her less nervous and restless. Unless very wet the ground is the best floor and unless the weather is very cold no more bedding is required than the sow can gather herself about the lot.

Many breeders contend that guard rails should be nailed around the farrowing house on the theory that when a sow overlays her pigs she mashes them against the side of the house. Personally, I believe guard rails are worthless and the pigs that I have found overlayed were killed in the middle of the floor. I attribute the trouble of overlaying almost entirely to an improper condition of the sow, though it can sometimes happen on account of an uneven floor, too much bedding, extreme cold or just from a careless, no good sow.

Weaning Time.

Weaning time is stunting time. If you get runts this is usually when they are made. Three mistakes are usually responsible. First mistake: Weaning too young. Pigs should never be weaned while they are heavily dependent on their mother's milk and too young may mean six weeks or three months, depending entirely on how you have trained them to eat. Second mistake: Giving the pigs unsuitable foods just before and just after weaning. The ration at this time should be very digestible, as nourishing as possible and of a kind pigs will eat greedily. Third mistake: Changing the range of the pigs at the same time you take this mother away from them. They are very restless anyway and unless they have old known feeding places to go to they are not as likely to thrive.

In conclusion let me say that many runts can be rejuvinated by simply putting them in a separate pen from their larger mates and giving a little extra food and attention.

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BREEDING HOGS

The time is near at hand when many sows will be bred for fall pigs, and as I have had a good many years of experience in breeding and raising swine I wish to make a few points reative to selection and breeding which will perhaps be of interest to your readers.

It is not essential that the brood sow be pure-bred for raising hogs for meat making purposes. A grade sow of good type and parentage will produce good hogs for fattening if mated with a boar that is well bred and of good quality. Fecundity is hereditary to a marked degree, hence it is important that the sow be chosen from a prolific mother and by a sire that comes from a prolific family. Temper and disposition are important features, especially at the time of farrowing, and a man does not need to be extremely observing to see the difference between a nervous, ill tempered sow and a motherly, gentle one.

The sow ought to be medium in length, and stand on moderately short legs, short pasterns, and short, strong feet. A short nose is to be desired, but I would not reject an otherwise good sow if her nose be a little long. She should have good depth of body and a strong arched back, smooth and even without sag back of shoulders, flank should be full and well let down. Her face ought to be slightly dished and wide between the eyes. The eyes should be brilliant and ears not too heavy. A heavy ear lies too close to the eye. If her ear is very nearly upright she can see better and is easier to handle. She ought to have a smooth, straight coat of hair. I do not like a sow with a rough coat. The smooth coated sow is a better feeder and her litters better lookers than the rough coated kind. Select a sow produced by a mature mother who has demonstrated her own usefulness. It is essential to note the character of the teats, they should be well developed, set well apart, and at least twelve in number, with the front ones set well forward on the body.

A pure-bred boar is by all means the best to use, as he is much better able to transmit his qualities to his offspring than a grade sire and his progency will be of a more uniform quality. He should conform to the best type of the breed to which he belongs. His carriage and general appearance should be bold and masculine, with a strong head, neck, and shoulders, and with indications of a strong constitution. If one has no pure-bred sire, surely in these days of general dissemination of pure blood all over the country he will either purchase such an animal or else take his sows to a high class male.

Strong litters depend to a large extent on the condition and handling of the sows and the boar at the time of breeding. I would never breed a sow until she is 12 months old. An immature sow is not likely to produce as strong and vigorous pigs as one which has attained her growth. The sow that produced a litter this spring may be bred a few days after the pigs are weaned if she is not too much reduced in condition, but it is usually best to allow three or four weeks of good feeding after the pigs are weaned to enable the sow to regain some of her lost strength and vitality before being bred. The sow must not be fat at the time of service but she must be in good, vigorous condition in order to produce a large, healthy litter.

A boar should not be used before he is ten months old and very sparingly then, as excessive use when young is apt to shorten his period of usefulness. The sire that has reached full maturity and is well developed is the one that produces the best pigs. He should be in good breeding condition at mating time, and he is in this condition when he is carrying only a fair amount of flesh. Young sows that are being mated for the first time should be bred to an old boar, as better results are usually obtained than when a young boar serves them.

The heat period of the brood sow lasts about three days, and if not then bred she will again show heat in about three weeks. It is not always well to breed a sow on the first day of the heat period. It is better to wait a day and present the sow to the male on the second or third day, but allow only one service and take the sow away. After being bred the sow ought to be kept away from other hogs for a couple of days and fed sparingly. I always mark down the day and date upon which a sow is bred, then I know just about when the pigs will arrive and can be prepared to take good care of them. The average period of gestation in the brood sow is 114 days. It ranges from 112 to 116 days according to the individuality and condition of the sow. Young sows in good breeding condition do not usually go more than 112 days, while old sows often run 116 days from the time of being bred to farrowing. An old saying which has been handed down is very near the mark, "three months, three weeks, and three days."—Hoard's Dairyman.

GOOD CARE FOR BREEDING HERD

The breeding cows are the basis of the cattle industry, and this assertion should be emphasized before the breeders and handlers of cattle everywhere. The importance of the cow herd is apparent, since all beef animals are the produce of the cow. The measure of quality in the beef steer is largely tracable to the beef character of the mother of the calf; therefore the importance of selection for quality that tells on the produce. One cross of good blod gives an advantage in the produce that often marks the dividing point between good quality and poor quality.

It is a common fault with the raisers of the common meat stock of the country to depend almost entirely on the sire to make quality in the herd. This is unreasonable and unjust, but every little advantage afforded by the dam lends force to the prepotency of the sir. The advantage of one good cross can never be effaced in the produce; therefore the importance of taking advantage of improvements to build higher and better. Low-bred animals and decided inferiority in individual should be on every farm and with every breder of livestock a bar to reproduction.

The importance of affording the breeding cow every advantage in feed, care and tendencies to thriftiness that influence toward vigor and development of the calf should not be overlooked by the owner of the herd. A little neglect in care, feed and attention of the breeding cow during the winter months, especially the months of February, March and April, is responsible for 90 per cent of all the loss of calves and cows in the common herds of the country.

The lack of feed and the exposure to severe cold and storm, whereby the impoverished condition of the cow starves and weakens the unborn calf, is a source of much more serious loss in degeneracy of the produce of the herd than most cattle owners realize. Why is it there are so many thin, weak cows to be seen from the latter part of February to the first of May, and often on farms where feed is stored and sold? The impression that cattle can be wintered on the refuse of the farm, that they can rustle for their living and thus save the prepared feeds for the markets, is an idea that has been handed down through generations of poor cattle handlers.

There is plenty of evidence to show that cattle can be wintered on very little prepared feed under certain conditions. The milder the winter and the more abundant the forage and waste from meadows, cornstalk fields, etc., and the fewer the cattle to do this scavenger work, the better cattle will winter and the less prepared feed will be required to tide them over the critical period in the spring. Because a few rugged steers and dry cows can

be roughed through with little or no prepared feed is no reason why such methods should be applied to breeding cows, or could be made practical in the general wintering of cattle on the farm or ranch.

There is but one safe and profitable plan of wintering the breeding cows, and that is to keep them supplied with plenty of hay, fodder or prepared roughage to maintain a vigorous, strong, healthy condition of animal, above any tendency to impoverishment or serious influence from extremes of cold or storm. The cattle business is worth too much to permit loss and depletion by neglect and expense of the feed necessary to keep the cows healthy and strong.

A herd of cows well bred and well taken care of, provided with plenty of feed the year around, will make any man money. There is not such a herd today in the cattle-growing districts that is not a good investment.

Stop starving the cows; take them in off the range when the winter feed conditions are not extra good; feed them all the hay they will eat; strengthen them up for the calving period, and pay these extra feed bills with one-tenth the annual loss of cows and calves that is sure to follow the careless, starvation methods so long in pratcice on many farms and ranches. The time to consider this is now, when you are laying in your supplies of winter feed.—R. J. T.

FEWER DRAFT HORSES

Horse production has been greatly reduced in the past two years. Buyers who are much in the country report that there are very few foals in sight this spring, and not many yearlings. This is borne out by field investigations made the last week of May, 1918, by the Percheron Society of America. While some communities have kept up fairly well on horse production there has been a tremendous decrease as a whole. Thousands of farms in the corn belt states have not enough young horses coming on to supply their own requirements for replacement. Instead of having surplus to sell they must buy.

There is a shortage in the world's supply of draft horses. War interfered with horse breeding operations in France and Great Britain, and drew heavily on their existing supply. The real lack of heavy teams has been felt most acutely in the past ten months.

Prices have been advancing steadily. Americans recently returned from Great Britain report that heavy draft geldings, such as are selling in the United States at $300 to $325, are bringing from $800 to $1,000 each over there. The opportunity to profit by the exportation of draft horses is great, but impossibe of realization, for ship space is not available, and the exportation of such horses has been forbidden by our Government on military grounds. There will undoubtedly be large exports of horses after the war. This trade will take our heaviest and best.—Percheron Society of America.

PREPAREDNESS AGAINST DISEASE

Modern methods of combating disease give much more attention to preventive measures than to cures. The fact that an animal is much less likely to contract disease if kept in a vigorous, healthy condition has been thoroughly demonstrated and successful stockmen recognize the disease-resistant power of a healthy animal.

Practically all of the most destructive livestock diseases are caused by germs. Furthermore, the germs of one or more disease are almost always present in the environment of animals and are likely to be taken into the system at any time.

Nature has provided the animal body with a means of destroying germs and their effects, and thus combating disease. The extent to which this natural fortification is effective is dependent upon the health of the animal. If it is in a weakened condition, its power of resistence is comparatively low.

Among the many causes which may in part account for unthrifty condition, lack of ventilation deserves a prominent place at this season of the year. Modern stables, hog houses, poultry houses, etc., are designed to provide a greater degree of warmth than was found in similar buildings a few years ago. By a close construction which retains a large portion of the heat generated by the bodies of animals, it is possible to obtain the desired degree of warmth, but unless arrangement is made for providing ample ventilation, the animals will almost surely be more succeptible to disease than were those quartered in more open stables.

Animals die in a very few minutes when entirely deprived of oxygen. They cannot enjoy the highest degree of thrift on an insufficient amount of oxygen any more than they can without sufficient food or water. The oxygen supply is obtained from the air and it is just as impossible for animals to breathe the same air over and over and obtain sufficient oxygen as it is for them to utilize the same food over and over and receive ample nourishment.

When air is taken into the lungs, it not only gives up a portion of its oxygen for use in the body, but it receives poisons and waste products to be carried away. Disease germs which which have found their way into the tissues are carried to the lungs by the blood and there given to the air to be taken outside the body. The system of a healthy animal can prevent a considerable number of germs from gaining foothold in the body and cast them outside without damage. In a poorly ventilated room an animal is forced to fight the same germ, not once but many times, owing to the fact that the same air is drawn into the lungs over and over.

Thus, the strength of the enemy is increased and the defense is weakened by an insufficient supply of oxygen. Such are the conditions under which cholera, tuberculosis, and other contagious diseases thrive. A system of ventilation which provides for plenty of pure air is the preventive.—Successful Farming.

HANDLING FARM TOOLS AND TRUCKS

William F. Purdue.

One of the mot important essentials in the handling of farm machinery is to understand all parts thoroughly so as to be able to adjust them for the best working conditions. This is important for three reasons: First, in order to prolong the life of the machine as long as possible; second, in order to save certain strain on the teams.

When we run a certain implement with one or more of its parts out of adjustment we not only run the risk of ruining the part which is not adjusted but there is danger also of damaging other parts by throwing an unequal strain on them.

Poorly adjusted implements always pull harder, sometimes twice as hard, than the same implements properly adjusted, thus not only wearing out the horses but at the same time doing poor work at a loss of valuable time. The condition of an implement affects the draft very much. Dull tools always pull much harder than tools kept in the right condition for good work. For instance about one-fourth more energy is required to pull a dull plow than one which is in perfect condition. Thus, if a team is being worked to its capacity when the plow is in perfect running order an extra horse should be put on if that plow is still used when it becomes dull.

The proper oiling of machinery is another important essential in order that the life of the machines may be prolonged and good work be done. Iron wearing on iron must always be covered with a film of oil to prevent cutting. This lengthens the life of the tool, besides making it of lighter draft. So we must learn to know how and where to oil every moving part of each of our tools, and then we must put our knowledge to use. We must not overlook the fact that some parts of a machine need a great deal more oil than other parts. Often, however, at the hands of a careless or ignorant machinist, the parts which require the most oil are the very parts which receive the least. The parts which are handy will receive more oil than is necessary, while other oiling places, which are not so handy or which are overlooked entirely, are neglected almost altogether. Yet these places which are slighted may be the ones which should receive the most attention.

Sometimes oil holes will become clogged with dirt, and while they may appear to be open, still they do not convey the oil to the wearing parts; if this fault is not discovered and remedied serious damage to the machine may result. The sure way to guard against trouble of this nature is to remove at once any dirt which gets into the oil holes instead of leaving it behind and trusting to luck for the oil to penetrate through it. Carry a nail or a piece of wire in your pockets or about every machine when in use with which to remove these dirt accumulations.

When storing machines in the fall they should be thoroughly cleaned and oiled and given a fresh coat of paint if the original coat is gone or even badly scarred. All have noticed that newly purchased tools always possess a good coat of paint. This is not just because the paint adds a neat look to them, but because the manufacturers know that a good coat of paint will go a long way in prolonging the lives of the implements they put out.

Auto trucks will need attention. The first essential will be for the owner to become familiar with the bearings, oil cups, gears, break, etc. Then care should be taken to look over the motor and other parts of the truck every morning, oiling the bearings and seeing that the connections are all intact and that the motor runs easy and true.

FIRST AID IN THE HOME

(Continued from page 9)

purchased, a package of absorbent cotton, a bottle of alcohol, and one of the tincture of iodine and a brush. Fresh wounds should be cleansed with alcohol and then painted with iodine, and bandaged with sterilized muslin.

Attention should be given the first symptom of sore throat. For this there is nothing better than some good gargle, and a laxative. Hot soda water, salt and water, alcohol and water and listerine and water are all good. An outside application of some good liniment will also help.

Great care should be taken that the skin is not broken or peeled off from a burn. If the clothing sticks it should be soaked and carefully peeled off, and infection from dirty hands should be carefully guarded against. Cover the burn with cold boracic acid compresses, the colder the better. Equal parts of linseed oil and limewater is also good for burns. Blisters should be punctured close down to their base with a needle that has been sterilized. A burn is something that should never be trifled with. If one-third of the skin of the body is burned it is a serious matter and may cause death, and this is especially true of scalds.

For earache drop into the ear a few drops of sweet oil, and plug with cotton. A hot water bottle or bag will often reileve the pain. Boracic acid for an antiseptic wash, a bottle of oil of cloves for tooth ache, a good laxative and a bottle of soda mint tablets for indigestion are remedies good to have on hand. Poisons should always be labeled "Poison" in red letters, and kept on a separate high shelf. The medicine cabinet should always be kept locked to keep the children out.

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The Lawrence-Williams Co., Cleveland, O.

WHEN TO RENEW THE STRAWBERRY BED

One question frequently asked of the Ohio Experiment Station is: "How long may a bed of strawberries be profitably kept?" This question is incapable of a general answer. There are a number of factors which affect the answer, such as stand, freedom from disease, presence or absence of weeds or grass, variety and the relation of the bed to the rest of the farm operations. Commercial growers usually fruit a bed for one or two seasons and then plow it up, because usually by this time the grass and weeds have gotten such a hold that it is easier to plant a new bed than to clean up the old one. When the weeds are kept out, the fertility kept up and diseases do not appear a bed may be kept for several years, especially for home use. The size of the berries, even under the most favorable conditions, will diminish after the second year. With varieties like Dunlap, Warfield and Bederwood, which produce large crops of medium sized fruit, a bed would become commercially unprofitable sooner than with varieties like Chesapeake, Marshall and Gandy, which are not so inclined to overbear. Plants grown under hill culture are frequently grown more than two years and those varieties adapted to hill culture are the ones which under the matted row system will prove best adapted to a longer fruiting period than two years.

In case it is decided to leave a bed for another season it should be mowed after fruiting and the leaves either burned or raked off. Burning is risky and should be undertaken only when there is plenty of moisture in the ground and just enough mulch left to enable the fire to run. When this is done, a brisk wind will sweep the fire quickly across the field without allowing it to linger long enough to cause injury. In case the leaves are not burned they should be raked off, together with the surplus mulch. After burning and raking, the middles are then plowed and worked down, the weeds and grass removed from the rows, fertilizer applied between the rows and the bed given the same treatment as a newly set bed.

ONE OF MANY

"Opportunity knocks once at every man's door."

"True. But old Op is mixed in with so many book agents and other solicitors that it's almost impossible to recognize his knock."

SATISFACTORY

Captain—"Have you changed the guard yet?"

Sergeant—"No, sir; the old guard was doing the job so well, sir, I thought I'd let 'em stay on, sir."

THE TOOLS FOR A FARMER

F. T. Lupton.

In the list of repair tools, the power driven grindstone ranks among the best as it will keep most of the wood and iron working tools sharp. It needs a sure acting water can. A very good can is one having an eighth inch nipple secured by locknuts and a gasket to its bottom, and an eighth inch globe valve to regulate the drip. Makers of pipe threading tools seem to have an agreement that medium sized pipes shall all be threaded alike so pipes, pipe dies and fitting bought as far separate places all fit each other. Bolt makers do not agree so well still many bolts, dies and burs fit pretty well except that threaded burs are often a little too small and must be worked out a little with a tap.

As a farmer often uses such iron as can be found on the place to make repairs some way of testing before working it is wanted. To know if a piece of wrought metal can be drilled or threaded, secure it in a heavy vise and strike it a good sideways blow. If it bends it is safe to work, if it springs back do not try fine tools on it; work it hot. Rake teeth are steel. They are only useful as they will do for hay hooks, meat hangers or connecting loops for bolts. They will safely stand the fair pull of one horse or will suspend 300 pounds. Work this stuff just a little more than black hot as it will fly like glass when sputtering hot. Some binder rods are steel and are unsafe to thread even when they show threads on them as that was done with a special tool. Broken rods can often be spliced by threading and joining with a pump rod coupling.

The most useful file for a farmer is a horse rasp as it will file both wood and iron at a surprising rate. Rat tail files are very good for enlarging bolt holes. We find that only one firm makes good monkey wrenches, the others are but second bests. All single handle pipe wrenches will crush pipes if strained. The two handled tongs are somewhat better. Still for corners and tight places the single handle wrenches are better. A snake head bar is a better tool for stretching short lengths of barb wire than either a claw hammer or a wire stretcher. A chain drill is a very handy tool. It has a feed wheel and about thirty inches of chain to go around any object to be drilled. The drill bit is set in its socket, the chain fastened about right and the feed wheel tightened while a carpenters' brace works the drill. Iron drilling that a standard drill can not do is readily done with the little trap.

Drill bits are hard to keep. They break because they are not fed straight to the work or they are forced to fast or they get nearly through the hole and stick and are twisted off. Twist drills bore cleaner and faster than blacksmith made ones. If not broken too short they are readily repointed by grinding. These drills work hard wood better than regular augur bits. A three-eighths inch drill bit thirty inches long is very handy to mark out long holes in two or more timbers at once but they are very apt to break. Where there are thrown away implements quite a store of bolts, rods and straps can be secured some slack day by taking them all to pieces. Beside this a nuisance is put out of sight. Rods, chains, rivets, bolts, burs and nails have as it were a base rate of five to eight cents a pound so one has to decide whether to use old stuff or buy new. Better time can be made at repair work by not hurrying as hurrying breaks the tools. A better repair job can often be done if the break can be left for half an hour as the mind has time to meet the occasion more fully. For some kinds of machinery the farmer can indicate the way to a more successful repair than the local blacksmith because the farmer has a better knowledge of the way the machine works than the smith can have.

A SHED FOR THE HAY.

J. C. Mohler.

Hay sheds are made for protection against precipitation and sunshine; hence it is necessary to make them strong, so that the Rocky mountain breezes may not blow them down and make the roofs and a part of the sides watertight. The length of hay sheds ought to be about seventy feet but ordinarily they range from sixty to 100 feet. The usual width is thirty-five feet, and the height to the eaves varying from fourteen to twenty-two feet. Such a shed will hold about 125 tons of alfalfa hay. The cost of such a shed is estimated at $500. Most sheds are little more than roofs supported by large posts. These supports may be of native timber, red cedar or old telephone poles and are usually planted in the ground to a depth of four or five feet and set in a mixture of concrete. They are spaced from twelve to seventeen feet apart on either side of the shed, with a row down the middle in case of a wide shed.

The posts are topped with a plate which supports an even-span roof of about one-third pitch. The ridgepole and the rafters may be of two-by-six inch lumber and the rafters may be spaced two feet apart. Galvanized iron is the most popular roofing material, although pine boards or other stuff may be used. It is the custom to prevent rain and snow from beating in on the hay by boarding the ends and the sides down from the eaves to to within eight or ten feet of the ground with rough one-inch boards, providing opening for putting in the hay. It is well to avoid crossbeams and other obstructions that might interfere in filling the shed. However, the whole structure should be solidly braced, as strength is one of the keynotes in the construction of good hay sheds.

As the stacks, loss caused by placing hay directly upon the ground may be avoided by constructing a platform of native poles or old lumber for the hay to rest upon. Such platforms admit of adequate ventilation underneath the hay, prevent spoilage by the surface water, and are found in all well-constructed sheds. Some growers make twelve to fourteen-foot driveways through their hay sheds or barns. One driveway may go lengthwise, the full length of the shed, or a number of driveways may go crosswise through the shed at regular intervals. After the spaces on either side of driveways have been filled with hay, the driveway itself may be filled. A very economical shed for hay storage, where considerable livestock enters into the farming scheme, is in use by quite a number of the larger growers. This shed is surrounded on two or three sides by feeding racks and lean-to cattle sheds. The hay is stored in the central part of the structure in the usual manner, and is fed in the racks as needed. Such a system involves a minimum amount of labor in getting the hay to the cattle.

GOOD HABITS COUNT

The temptations found in city life for the young man from the country are many, but if the home training has been properly give nthe parents need have but little anxiety about their boys who may seek employment in the large city.

A boy with brians and pluck will succeed anywhere.

Parents should not forget that those who employ labor in the metropolis districts insist upon temperate workers.

Upon railroads, in factories, stores, machine shops and offices only temperate persons are tolerated, and the intemperate youth soon finds his place taken by a sober one.

Every day, every year we find our young men and women taking positions for which they are not fitted.

There are plenty of misfits in this busy world simply because the individual does not do his or her own thinking. Experience often demonstrates what the individual is best fitted for, and it may take some little time before the young man or woman finds the right road to travel.

It is much easier to follow the road of life if the individual will do a little straight thinking on his or her own account.

Many things are to be considered carefully. Natural fitness and inclination are important elements. The advice of parents should be considered.

In all walks of life, no matter how humble the pursuit may be, the foundation of success is imbedded in good habits. Clean living, right thinging and plenty of action are the keynotes looking toward the rounding out of a useful, happy life.

"LONG MAY IT WAVE"

Rules for the Corect Display of the National Emblem.

Flag rules, telling how and when the national emblem should be displayed when the nation is at war, follow:

When a flag is placed in a window it should be so placed that it will be viewed with the starry field in the upper left hand corner, with the stripes horizontal. The person hanging the flag thus will have the stars on his right side, while to the viewer it will be on the left.

When the flag is projected from a window on a pole, or on a wire, or rope, the starry field is placed furthest from the house displaying it, except when facing a parade when the flag is suspended across the street, with the stripes perpendicular, in which case the starry field goes in the upper left hand corner as viewed by the parade.

When a flag is made up on a badge, the blue union with the stars is on the right side, and it is viewed from the left.

The war department has ruled that during war the American flag may float all night, if intended for patriotic and not advertising purposes.

When the flag is worn as an emblem on the coat or other garment, no other token should ever be worn above it.

Saluting the flag, by individuals and organized civic or military bodies, is an almost universal custom in every country.

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Fond Mother of Absent Guardsman —"I knew Jack would distinguish himself with the regiment, and he has."

The Neighbor Who Has Dropped In —"Ah! On guard on the border, isn't he?"

Fond Mother—"Better than that! Why, his letter says he's right in the guard house itself!"

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85 acres in the center of Bear River valley, with a full water right from the Bear River canal; 30 acres planted to alfalfa; fenced with a woven wire fence; on the corner of the Lincoln highway and the county road; within a half mile of schools, churches; just under the Bear River canal. Price $125 per acre; one-fourth down and terms on the balance.

160 acres at $65 per acre; all plowed, and one of the nicest pieces of ground there is in Bear River valley; adjoining the canal, and in the center of the valley. This property can be had at $65 per acre. Water may be had at any time. The property has been under cultivation for a great number of years and is considered one of the best farms in the valley.

Immediately adjoining the town of Tremonton we have three 40-acre tracts that we can sell for $140, $135, and one for $125 per acre; a small payment down and ten years on the balance; a full water right from the Bear River canal; on the main county road; some planted to alfalfa; nice shade trees. In fact, it is one of the most beautiful farms in the valley. We will sell one or all three 40-acre tracts.

In Cache valley we have a number of first-class farms; one farm containing 70 acres, right near the depot and close to town. This property can be had for $125 per acre; small payment down and terms on the balance.

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The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are new improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grossebeck, Agent, Room 58 City and County Bldg., Salt Lake City, Utah.

The Emergency Medicine Chest

By Cozymine Wilson.

If you are building a new house or even if the house is already built, don't neglect to put in a medicine chest in some convenient place for cases of emergency. It may be built and fitted up at little expense. Only simple remedies to be applied promptly at a moment's notice in case of accident need be purchased.

There is urgent need of simple remedies and a convenient place in which to keep them. Too often in cases of accident, especially in suburban towns and country, there is an excited search for what is necessary to give relief before the one doctor of the vicinity can arrive instead of the speedy and quiet production of the same. Where there are young children, need for simple remedies such as arnica, turpentine, peroxide, vaseline, etc., is bound to come. Many times the physician is called when his services are anything but necessary if a little knowledge or remedies for aches and pains, bumps and bruises, and ordinary health guards had been possessed by mother. A medicine chest well fitted up gives to woman of the house an incentive to know about the simple medicines and their uses as well as their limitations.

A closet planned with three shelves and a deep drawer at the bottom is very useful. The drawer is used for extra towels and bandages as well as for emergency night garments, if desired. Such a closet of course is best when built into the wall at the time of the construction of the house. A simple closet may be built, however, on the back of a door in the form of a hinged box. A box, the shape of a suitcase, or even wider, fastened with the side of little depth against the back of the door so that the side with depth may be opened out and fitted up with shelves to hold medicine bottles, makes an ideal "after thought" chest.

Every closet should be supplied with an electric bulb or small flashlight where the adult members of the family can find it so that there will be no excuse for making the ofttimes fatal mistake of taking medicine out of the wrong bottle. A place for everything and everything in its place is the rule that should be religiously followed about the home drug store. Once a month the chest should receive a housecleaning and a replenishing party. Bottles with soiled labels should be relabeled. Everything should bear a name and only the simplest remedies should be kept, and unknown or questionable remedies should be thrown away. Very often a few patent medicines containing more or less injurious ingredients, bottles and torn or stained labels or no labels at all, and boxes of tablets, long since partly used and discarded, form the average medicine chest in the home. Yet these simple, tested remedies, the uses of which are known to most people will serve most needs and cost little:

Turpentine, to be applied at once to all cuts and bites of insects or animals.

Carbolic acid, the best of antiseptics, or some other antiseptic of less strength when spilled on the skin.

Arnica for bruises.

Ground mustard for hot poultices or foot-baths.

Falxseed, ground for poultices.

Iodine for cuts and inflammations.

Quinine for tonic or for use in case of colds.

Sulphur and sulphur candles.

Salts and well known cathartic pills.

Camphor for pimples and headache.

Charcoal or pepsin tablets for indigestion.

Lime water for burns.

Vaseline, plain or carbolated.

Some good cold cream for sunburn and other uses.

Dangerous drugs should be put in unusual bottles on the top shelf.

Little conveniences such as eye cup, ear syringe, measuring glass, atomizer, pipette, adhesive plaster, sterilized cotton, etc., and antiseptic soap are most convenient for the amount of use they are put to, on the middle shelf.

Few ordinary drugs will change in character or lose in strength if taken care of properly.

PLANT TREES IN YARD

A neat, well planned front yard gives a cosy appearance to a home. It is important that the trees be well arranged within the yard. They should be placed where they will not obstruct the view from the house to the road or shut out the necessary sunlight.

To secure the best effect, fast growing or temporary trees should alternate so far as possible with the long-lived trees. The trees should never be planted closer than 16 or 18 feet apart. Temporary trees will grow up quickly and give the much desired shade while the slower trees are developing. When the permanent trees begin to fill-in the vacant spaces, the temporary ones can be cut down, making room for the full development of the permanent foliage trees.

Planting trees too closely gives rise to irregularly shaped trees. Often moreover, as a result of too much shade, the grass on the lawn is destroyed.

Mass Shrubbery About House

Instead of placing irregularly shaped bunches of shrubbery all over the front yard and along the walks, the best showing can be secured by massing the shrubbery around the house or by using it to break square corners in the walk. Shrubbery should be used to fill in the corners at the end of the porch, as a banking to hide the foundation wall, or to fill in the curves of the walk.

Well kept trees growing along the roadside contribute greatly to the pleasure and comfort of the travelers besides lending an attractive air to the grounds along the side. For the best effect the trees bordering the road should be uniform in size and shape and placed in a row parallel to the boundary fences. A space of 40 to 50 feet should be left between trees. Only the extremely hardy drouth-resistant species should be used for this purpose.

Give Streets Formal Air.

In the towns it is better to grow a certain variety of tree the full length of a street. It gives a formal appearance and makes the street more attractive. Other streets should be lined with other varieties of trees. In this way an insect pest will not destroy at one time the shade trees of the entire town.

Prune the trees every year. A little pruning each year is more important in securing an attractive tree than is heavy pruning every four or five years.

GENTLEMEN FARMERS

"Father, what do they mean by gentlemen farmers?"

"Gentlmen farmers, my son, are farmers who seldom raise anything except their hats."—Tit-Bits.

Every farm should be a factory to produce food and feed. Since the demand for these things has become great no farmer can afford to neglect them.

If there is one enterprise on earth that a quitter should leave severely alone it is advertising. Advertising does not jerk; it pulls. It begins very gently at first, but the pull is steady. It increases day by day and year by year until it exerts an irresistible power.—John Wanamaker.

THE TEST

(Continued from page 3)

until now was thought possible. Throughout the length and breadth of the nation, all loyal men and women—the young no less than the old—are at the last close kin.

It does not come from the advice we give nor from the songs we sing. It is not the words we utter nor the deeds we do. Yet they are grim of counterance and responsive in spirit—ready to do their part—this once frivolous youth. Where once they valued time as a thing to be killed, now they are fighting for the nation's life. Their days are rythmic with the harmonies of a new association; their hearts pulsing with the spirit of regeneration. The one thing needed was the test. America called and they awoke. American liberty imperiled they sprang into action. Sublime was the call. Sublimer still is the American soul. One and indivisible—men and women—Americans all—we face the common foe.

THE ART OF WALKING

The human race was forgetting the art of walking. Vanity had had something to do with it—and the shoemakers, who catered to vanity. For the truth was, people were paying more attention to the style of the shoe than to the comfort of the foot. Then came the war.

Whatever else they are called upon to do, soldiers have to walk. In walking, one must have shoes that fit—shoes that do not cramp the foot, shoes with flat soles and low heels. So the armies of the world provided their soldiers with shoes in which they could walk—and the soldiers found the walking easy.

Seeing these millions of soldiers with good feet, properly shod and finding that they could walk for long distances without tiring, the rest of the world is gradually coming to adopt sensible shoes. In the fulness of time all of us may learn to walk, and when we do we shall find that we had for many years overlooked the most delightful process of locomotion that has as yet been invented.

Walking is the best exercise that has been devised, because it is the most natural. Man is a walking animal; the process of walking involves every nerve and muscle of the body and insures health. Men and women who walk do not suffer from any kind of disease. But the first principle of walking is a proper shoe for the foot. —Southwest American.

TO OBTAIN SUCCESS

All through the years that have gone, and in all the years to come, the question has rung, and will continue to ring out: "How am I to gain success? How to do the thing I have set out to do and to reach the goal desired?" From the Shamrock we take these lines:

"If you want a thing bad enough to go out and fight for it, work day and night for it, give up your time and your peace and sleep for it—

"If only desire of it makes you quite made enough never to tire of it; makes you hold other things tawdry and cheap for it—

"If life seems all empty and useless without it and all that you scheme and you dream is about it—

"If gladly you'll sweat for it, fret for it, plan for it, lose all your terror of God or man for it.

"If you'll simply go after that thing that you want with all your capacity, faith, hope and confidence, stern pertinacity—

"If neither cold, poverty, famished and gaunt; nor sickness, nor pain of body or brain can turn you away from the thing that you want—

"If dogged and grim, you besiege and beset it, YOU'LL GET IT!"

The Farmers Market Place

Over 150 Spring Pigs

Sired by our Grand Champion Richards Defender, Richards Pathfinder and Cherry King Orion, Jr., and out of our big type prize winning sows.

In the last three years at the Utah and Idaho State Fairs our hogs won 76 Champion and First Prizes.

Can furnish unrelated pairs. Satisfaction guaranteed or money refunded. Priced very reasonable.

Richards Live Stock Co.

Virginia Idaho

Home of the Champion Durocs.

Registered Duroc Jersey Hogs.

Some good spring litters. Richard Defender and Pathfinder breeding. Big types. Send out nothing but high class stock. Guaranteed to please. Write me for prices on these pigs.

ERIK W. OLSEN

Virginia Idaho

LUMBER, lath millwork. Get our direct-to-consumer prices before building. Catalog, plan book free. Contractors Lumber Supply Co., 1446 Lumber Exchange, Seattle, Wash.

FOR SALE.

Six or Eight High Grade Holstein Cows. Ages from two to four years. Reason for selling to make room for Heifers coming on, and short of feed. For further information call on or address, Albert C. Fisher, Richmond, Utah.

CROCKWELL'S ECONOMY STOVE

A simple portable stove Take off one lid sit in your stove or range (see cuts) giving you two holes to cook on. A great time, heat and fuel saver. Price $5.00 prepaid. Pays for itself in a short time. Write for folder. Agents wanted. Hooverise. Save coal for the War.

J. H. Crockwell, Box 667, Salt Lake City

Windsor Hotel

LOCATED IN THE HEART OF THE CITY

225 So. Main St.

125 Rooms, 35 with bath, all steamheated, hot and cold running water, telephones, elevator service, nice lobby.

FREE BUS SERVICE

To and From all Depots

All Cars Stop In Front of Our House

A home like place for local people where you will meet friends.

Good Rooms 75c, $1 and up.

The Windsor Hotel Co.

M. A. Scott.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our special prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers	$ .90
200 Butter Wrappers	1.25
500 Butter Wrappers	2.00
1,000 Butter Wrappers	3.00

Check or money order must accompany order.

ALFALFA AND SOIL FERTILITY

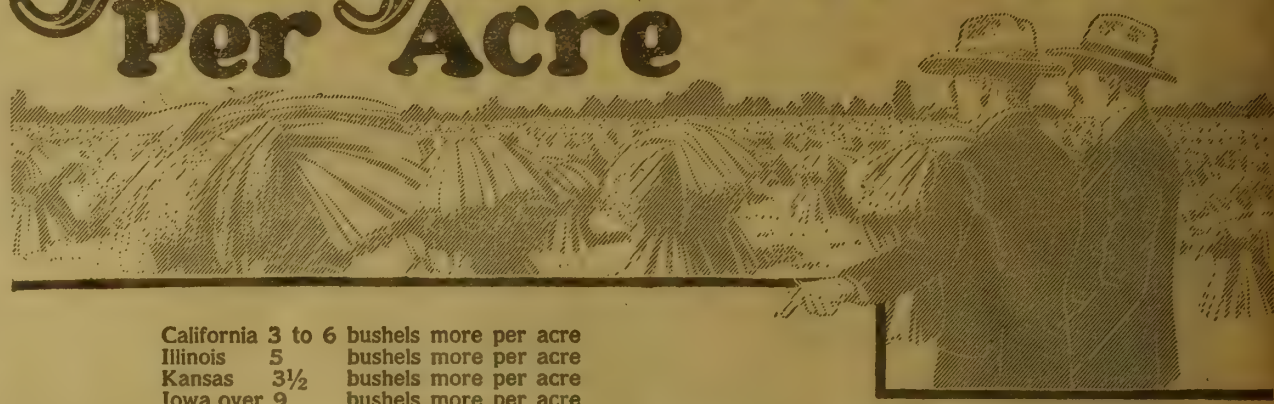
(Continued from page 1)

millions of these bacteria which have the power of assimilating nitrogen from the air, said nitrogen being the basic element in protein food and a most important factor in soil fertility, as stated above. If these bacteria are not present in the soil, alfalfa does not do well. If then becomes necessary to inoculate the soil with the bacteria. This is accomplished in various ways. First, soil from an alfalfa field known to contain the bacteria may be scattered over the ground in question at the rate of two or three hundred pounds per acre, and harrowed or disked in. Second, a portion of soil may be treated with a pure culture obtained from a bacteriological laboratory and this disked into the ground in question; or, third, the seed which is to be sown may be inoculated with a pure culture obtained from a laboratory and these seeds sown in the inoculated ground. Whichever method is used, the inoculated soil or seed should not be exposed to strong sunlight; that is, the inoculation should take place on a cloudy day or in the evening. These nodule-forming bacteria seem to be present more or less in most of the soils. Therefore, most alfalfa growers are not obliged to inoculate their soil. Yet, in most regions inocculation proves beneficial because it hastens the time of nodule formation, thus aiding the growth of the alfalfa.

When we consider all of these things we can easil· see why alfalfa is going to help build up our soil.

When properly treated this plant, which excels other forage crops in so many ways, will also excel them in building up a soil that will never become poor in nitrogen but will remain permanent for all years to come. It seems then that to maintain the nitrogen on our farms we should adopt such a system of farming that we will be able to grow alfalfa in rotation with the other crops. If this legume were grown in a proper rotation our farms would be more productive, which means in other words better returns, making more money from farming.

3 to 9 Bushels More Per Acre



California 3 to 6 bushels more per acre
Illinois 5 bushels more per acre
Kansas 3½ bushels more per acre
Iowa over 9 bushels more per acre

These are actual increases in yield per acre obtained on big farms in those states for several years by drilling instead of broadcasting. You gain both in yield and in seed saved by using a

John Deere-Van Brunt Grain Drill

Plants all the Ground—No Costly Bare Spots

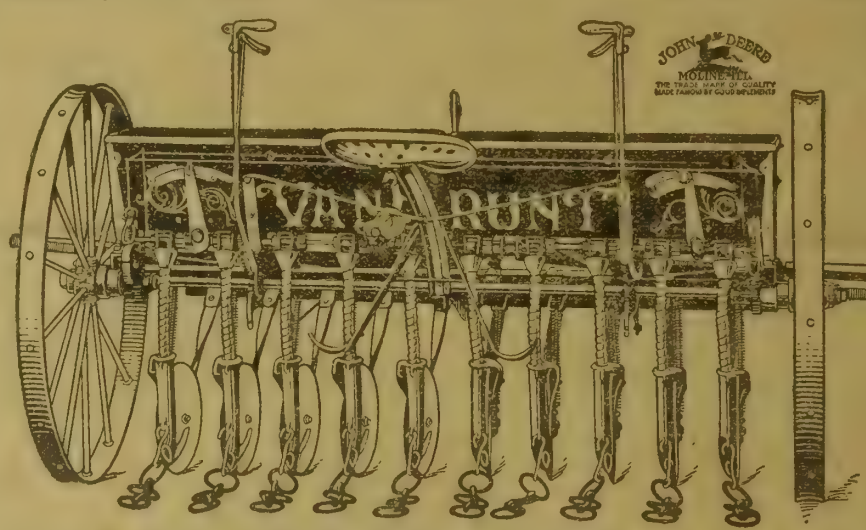
Coarse, medium size or very small seed can be planted with this drill. The force feed used on Van Brunt drills has a patented gate, adjustable to handle any size seed from alfalfa to large bearded oats, peas and beans.

All the ground is seeded—no choking up in the seed box. Change in quantity of seed by the feed shifter lever is exactly the same in each and every feed. The force-feed compels the seed to leave the seed box in even, continuous streams, but the seed is not crushed.

No clogging up—the Van Brunt successfully plants seed in mud, gumbo or trash. The seed is protected from the time it leaves the seed box until it reaches the bottom of furrow.

Disc bearings guaranteed to last the lifetime of the drill. The furrow openers, the hard-working part of any drill, are made of highest quality of steel.

Grass seed attachment can be furnished. It sows broadcast or in drills, as you desire. Van Brunt Drills are furnished in sizes and with equipment that will meet your requirements.



John Deere-Van Brunt Grain Drill

Get These Valuable Books Free

"Better Grain Yields From the Same Fields"—32 pages of valuable information on how to select seed, how to test it, depth to plant, best method of planting, etc. Also, "Better Farm Implements and How to Use Them"—a 156 page text book on farm implements. Worth dollars.

To get these books, just state the implements in which you are interested and ask for package *BP2* 30

JOHN DEERE, Moline, Ill.

BIG SUCCESS ON SMALL FARM

By Ben R. Eldredge.

I met him in Weber County a few years ago, his name was not Thomas but we will use that name here, and his age was seventy-four. He was stocky and jovial, dressed in a suit of well-fitting gray and might have passed for a successful builder or contractor but never for a professional man, for his hands were huge and his grip made you wince.

He was accompanied by his wife and I knew at once she was English but I studied a little before I decided that he also was English bred.

It was March and we were holding a series of agricultural meetings under the direction of the Extension Division of the Agricultural College. With us was Mr. O. C. Gregg of Minnesota, 68 years of age, genial and American all through. We were guests at dinner, or supper as they called it, in the pleasant farm home of a successful fruit grower.

Mr. Thomas and Mr. Gregg became interested in each other at once for Mr. Gregg had that afternoon made one of his characteristic appealing addresses at our meeting and Mr. Thomas had been an attentive listener. The conversation of these men of ripe years as each told of personal experience and events was interesting to all of us.

As I listened I gleaned that Mr. Thomas was a small farmer, having acquired soon after coming from England to Utah, over fifty years ago a place of eleven acres. With pride he told us of his eleven children, all married, and then with modesty let drop the information that as each child had been married there had come from the father a wedding present of a thousand dollars, all derived from the accumulations of that eleven acre farm. As I grasped what that meant I studied Mr. Thomas further. His keen eyes, firm mouth and whole being reflected character and I knew I was meeting a big man. Had circumtances been differently shaped who could tell what big things he might have done—but after all was it not fine to have made such a big success from a small farm? It took energy and mangerial ability to raise that family upon the income from eleven acres, but to acquire the means to start each child out at its marriage with a thousand dollars took foresight, fraugality and financeering of an unusual order, and now at 74 years of age he was still living on his little home farm and making a comfortable living for himself and life mate. That little farm was laid out, stocked and worked on the plan of having "something to sell every day in the year" and called for the highest form of intensive farming.

Well, it was an inspiration then and has been ever since whenever I have thought of being disgruntled over the achievement of small things. For big successes can be made of small things and here was a splendid example of that in its application of agriculture.

THE BLACK RASPBERRY IS GROWING IN FAVOR

Formerly, when black raspberry plants had fewer insect and fungous enemies than now, it was customary to retain a plantation five or six years, and occasionally longer.

It is difficult to do so now, and even if possible would entail too much labor to be profitable.

The raspberry grower must content himself with fewer crops from a setting than formerly but must make greater efforts to produce maximum yields.

First of all choose a soil that is known to be suited to the raspberry crop. It need not be excessively rich but should be fertile enough to give a good crop of wheat or potatoes.

Both these crops may be taken as indicators of the adaptability of the soil for raspberries.

It must not be excessively wet and yet should have good water holding capacity. The aim should be to secure a strong healthy growth the first season. To this end well rooted plants should be used and are to be set early in the spring.

They must be given the best of cultivation and if need be pushed along by the use of fertilizers. They should not be forced unduly, but a growth of canes 3 or 4 feet in length ought to be attained. From such plants considerable fruit can be secured the first season after planting. The year following, if the plants are well cared for, a good crop may be expected. Perhaps a second good crop may be had but usually disease begin to get control and the crops dwindle and fail to be longer profitable when the plants are 2 or 3 years old.

No definite age limit can be set for crop failure, nor is it possible to eliminate or combat disease by thorough cultivation alone, but better crops can be secured while the plants last if all conditions are made as congenial as possible for them.

Spraying has but little if any effect upon the blight, but may have upon anthracnose, hence should be one of the measures used. The increasing prices of black raspberries will warrant improved methods of culture, and it may be possible to restore the black raspberry to its former place as one of the most profitable fruit crops.

NOW PUSS "RUNS"

Charlie's mother was holding a watch to her ear.

"What you doin' zat for, ma?" asked the youngster.

"Why, to see if it's running, dear," answered his mother. "Listen," holding the watch to his ear.

Some days later Charlie heard the cat purring, when he ran to his mother almost breathlessly exclaiming, "Ma'ma, puss is running!"

Send in your subscription TODAY.

Ag. Serv.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH.

VOLUME XIV; No. 52 JULY 27, 1918

Dairy Cattle---The Jersey Breed

The Jersey breed probably sprung from the native cattle of Normandy and Brittany in France and has been developed to its present high efficiency on the Island of Jersey off the Coast of France.

The island of Jersey, is the largest of the Channel Islands. Except for immediate slaughter, no cattle have been landed on the island since 1779, so that ever since that time the purity of the breed has been preserved.

The breed was first imported into the United States about the middle of the last Century and we now find the breed perhaps more numerous and widely distributed than any of the other dairy breeds.

High cows of the Breed	Pounds of Milk
Passport	19,694.8
Eminents Bess	18,782.9

They are the smallest of the dairy breeds, ranging from 700 to 1300 pounds. In color they vary from a light fawn to a dark brown with various shades of squirrel grey and frequently in the broken-colored animals white is mixed with these colors. Jerseys are especially noted for their uniformity of type, the high percent of fat in the milk and their ability to produce butter economically. They are preeminently a butter breed.

The average production of the breed as shown by the records of 5244 register of merit cows is 7792 pounds of milk, testing 5.35 per cent, making 417 pounds of fat.

High cows of the Breed	Pounds of Fat
Sophie 19th of Hood Farm	999.1
Spermfields Owl's Eva	993.3

SUGAR BEETS

SILOING OF BEET TOPS

There are a number of farmers who are planning to silo beet tops this winter we want our readers to keep informed about the siloing of tops.

Mark Austin General Agricultural Superintendent of the Utah-Idaho Sugar Company says: "Build your silo on the ground excauvate and build the bank three to five feet high, both sides and one end, if your silo is a narrow one build up both ends. Dampen the ground, by irrigation or some other way, before you start to excavate. Use team and scraper. Build your silo the size that will hold your crop, 30 cubic feet is needed for each ton of siloed tops. Thoroughly pack down the tops and crowns as fast as you put them in the silo. The most important thing in siloing is to work the air out as they are put into the silo and then keep the air out.

"After you have well packed the beet tops into the silo, cover with 10 to 12 inches of fine chaf in order to shut out the air. Have silo sealed or closed for 5 to 6 weeks. When you are ready to feed the ensilage remove enough of the tops for the amount you will immediately use. Start at one end and cut down with a hay knife. When properly siloed beet tops and crowns makes excellent feed and is equal ton for ton when compared with alfalfa."

Mr. A. P. Hamilton of Sugar, Idaho, says:

"That from my last winter's experience it will be best to put the siloes on top of the ground. The best way is to build the silo so the water which falls into it by the storms will run out. That is, make it above ground with one end open and the other end and sides built up. If a side hill is handy one can be built there easier. Have a wall on three sides and the lower side open and the dirt taken out can be used for the sides. We built ours in the ground with no outlet for the drainage last year and had considerable trouble with the water from rain and melting snow."

IRRIGATE YOUR BEETS

Keep your beets growing see that they are properly irrigated. When beets are selling for ten dollars a ton you can afford to go to a little extra work to get better results. Cultivation is also important keep them growing, tonnage is what you want, and the government needs more sugar.

In the past many have neglected to properly irrigate their beets, do not let any thing like that happen this year.

Every farm is a problem to be solved by the farmer and judgment must be used as to when and how to get best results from irrigation and cultivation.

FIGHT RODENTS TO SAVE FOOD.

Any farmer may, by care and industry, free his own premises of harmful rodents, but he is helpless to prevent an early recurrence of the trouble unless he can secure the active co-operatin of his neighbors. The Departpartment of Agriculture urges, therefore, that whenever possible the destruction of these pests be a community undertaking. In the past, individual efforts often supplemented by the payment of bounties by State, county or township have been only partially successful in reducing rodent depredations. In many Western counties the amount paid out in a single year for bounties on pocket gophers and ground squirrels, would, if wisely expended in poisoning operations such as have been practiced under Government supervision on public lands, secure the destruction of nearly every such animal in the county and make unnecessary much further outlay for the purpose.

A few of the rodents which inhabit the United States are not classed as injurious as they live in desserts, mountains or swamps [illegible] rarely come in contact with cultivated crops. Some are valuable because they feed largely upon insects, some because they produce fur and others because they are useful as human food. Of the injurious species all are native to this country with the exception of four—the house mouse and three kinds of rats—but these four cause approximately two-thirds of all the damage. Field mice, kangaroo rats, pocket gophers, ground squirrels, prairie dogs, woodchucks, and rabbits are among the most destructive of the native species.

WEEKLY MARKET REVIEW

Union Stock Yards, Ogden, Week Ending July 23.—Cattle—Receipts, 473; market, steady; prime bred steers, $12.00@13.00; dressed beef steers, $10.00@12.00; butcher cows, $7.00@8.00; choice cows, $8.50; stockers and feeders, $6.00@7.00; canners, $4.50@5.50. fat bulls, 7.00@8.00; bologna bulls, $6.00@7.00; calves, $9.00 @11.00.

Hogs—Receipts, 364; market, higher; tops, $17.50.

Sheep—Receipts, 2,087; market, steady; spring lambs, $13.00; yearlings, $11.00; heavy wethers, $10.00; ewes, $9.00@10.00.

Omaha, July 26.—Hogs—Receipts, 10,000, Market 25c lower. Heavy $17.50@18.15; mixed, $17.80@18.00 light $17.85@18.50; pigs, $12.00@ 16.00; bulk, $17.80@18.00.

Cattle — Receipts, 2500. Market steady. Native steers, $12.40@18.40; cows and heifers, $7.50@13.50; western steers, $10.45@16.25; Texas steers, $9.50@12.50; range cows and heifers, $7.50@11.00; canners, $7.00@8.00; stockers and feeders, $8.00@13.00; calves, $10.00@13..50.

Sheep — Receipts, 3300. Market steady to stronger. Wethers, $12.00@ 14.00; ewes, $10.50@15.00; lambs, $17.00@18.50; yearlings, $13.00@14.50.

North Salt Lake, July 26.—Cattle—Receipts, 11; market steady. Choice heavy grain-fed steers, $11.50@13.00; choice heavy grass-fed steers, $10.00 @11.00, fair steers, $8.50@9.00; feeder steers, $7.75@8.50; choice cows and heavy heifers, $8.00@9.00; fair to good cows and heifers, $7.00@8.00; cutters, $5.75@6.25; canners, $4.50@5.50; fat bulls, $7.00@8.00; bologna bulls, $5.75 @6.75; veal calves, $10.00@12.00.

Hogs—Receipts, 145; market 25c higher, strong demand. Choice fat hogs, $17.75.

Sheep—None. Market steady. Choice spring lambs, $15.25@16.00; choice shorn lambs, $13.00@13.50; wethers, $9.00@10.50; fat ewes, $8.50@9.50.

NOT SOCIALLY INCLINED

"Your husband is a Socialist, I believe?" asked a friend at the reception of Mrs. Smith.

"A Socialist?" replied Mrs. Smith, "No, indeed. Why he hates to make calls with me."

You can arrange for a checking account and other financial conveniences overseas through our foreign banking service.

Send for explanatory booklet.

Walker Brothers Bankers

SALT LAKE CITY

STOVER SILO FILLERS

are complete in the essential elements of safety, durability, capacity and minimum power requirements.

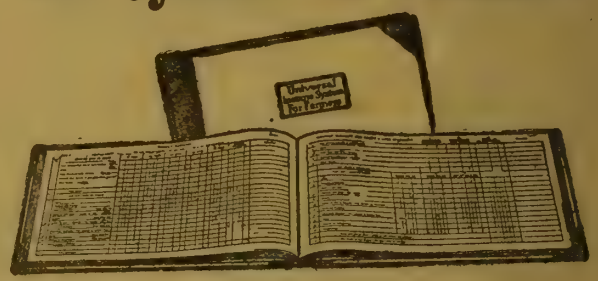
ORDER NOW

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

AT LAST!

A Simple and Complete Income Tax System For Farmers



Our Government—"We must become a Nation of Bookkeepers."

Our Revenue Collector—"How did you arrive at these totals."

Our Banker—"Pay Taxes not Penalties."

Our Patriotism—"Make prompt and accurate returns and thereby save your Government Expense."

The Universal Income System for Farmers—"Enables you to meet all these requirements."

If You Want An Income Tax System

—*that* your wife or any 15 year old child can keep

—*that* has been approved as efficient and complete by every Federal official who has examined it

—*that* has the endorsement of an overwhelming number of the largest Mercantile Establishments and Banks in the United States

—*that* will keep you out of an argument with the Federal Inspector when he calls

—*that* will show exactly what your net income is at any time during the year without having to wade through a mass of debits, credits, resources, liabilities, etc.

—*that* was devised after many months of careful thought and preparation by expert Accountants of National Reputation to meet every requirement of the Income Tax Law

—*that* entitles the owner to FREE Consultation and Advice from EXPERTS in this line on any and all questions that may arise regarding your Income Tax Problems *(This service alone is worth many times the price of this offer)*

—*that* will save your Government Hundreds of Thousands of Dollars instead of having Federal Inspectors try to unravel a snarl of figures from the numerous make-shift, inadequate bookkeeping methods that have been peddled to the Farmer by mercenary Firms and their Agents since the Income Tax Law went into effect

—*that is a real Income Tax System* meeting every requirement of the Income Tax Law and will save you an endless amount of trouble and worry.

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Better Pastures

By Ben R. Eldredge.

The question of pastures is each season becoming more important to the farmers of Utah. I have recently been in sections where the pastures are barren hillsides; other sections where they are swamps and other sections where dairy cows are yarded throughout the entire summer season. I have found a few good pastures but they are few and the general lack of appreciation of good pastures is hard to understand. I found a pasture on a farm, valued at $200 an acre. It was a corner place, land was choice and laid off in such a manner that the irrigation was easily accomplished. There were a few trees that afforded shade, and on one square yard of that pasture I found red clover, alfalfa, timothy, orchard grass, perennial rye grass, fescue, smooth brome grass, red top and Kentucky blue grass. The owner says it is one of the most profitable bits of ground he has on the farm. He could get some swampy land two miles and a half from his home for about $35 an acre. This swampy land is maintained as a swamp for pastures purposes. The owners object to draining because they think it will spoil their pastures. The owner of the pasture I have spoken of above says he can get more feed from one acre of his made pasture than from four acres of the swampy land mentioned, and he has his pasture right home. A well-made irrigated pasture, will carry from two to three cows per acre through the entire pasture season—six months in some of our valleys and five months in others. Pasturage is well worth $2.00 per month per head. Suppose a pasture would carry the equivalent of two and a half head mature animals per acre for five and a half months? That means a return of $27.50 per acre. The labor and expense are in the first preparation and seeding of the ground with the necessary periodical irrigation. That $27.50 pays the interest on land of fairly high value as well as paying taxes and incidental expenses. In some of our best dairy districts where production records are kept, $2.50 per head per month is charged each cow for her pasture bill, and it can easily be seen that the pasture much more than replaces hay to that value. And yet, we frequently find farmers who say land and water of $100 valuation are too high priced for pasture land. Their statement is based probably on returns from other crops but they forget the small outlay of labor that is necessary to raise and gather the pasture crop—for pasture is a crop and should be treated as such.

I know of considerable areas of land that are maintained in a swampy condition for pasture purposes. This land, if drained, plowed up, and worked down to a good degree of tilth, then re-seeded with a good pasture mixture, and irrigated lightly at frequent intervals, would carry three head of mature livestock per acre where in its present swamp condition one head per acre is a full allowance.

Pasture lands properly seeded do require a fair amount of water, but it has been found by experiment that water applied from nine to eleven times during the season, amounting to from 2.48 to 2.73 cubic feet will sustain a splendid pasture growth where for potatoes, oats and spring barley, four irrigations were required, aggregating 1.50 to 1.75 acre-feet of water per acre. Alfalfa, in the same section, required seven or eight irrigations, amounting to 2.75 acre-feet of water per acre. This was the result of this experiment. We can see what a waste of land and of water results from maintaining pastures in a swampy condition.

Pasture grasses are not deep feeders. They draw their moisture and sustenance, not from the sub-soil but from near the surface; consequently, the constant saturation of the sub-soil is unnecessary and wasteful; and, further, those varieties of grasses that are characteristic of these swampy conditions do not carry the highest nutritive value. They are watery and lacking in nutritive substance, and should be replaced by grasses of higher nutritive value.

There is a good deal of difference between maintaining a moist surface soil and a boggy condition in our pasture land.

I know of pastures that have been constantly used for fifteen years and are better now than years ago. They have been occasionally top-dressed during late fall, winter or early spring with fine barn-yard manure, and before the growing season is advanced in the spring lightly harrowed.

Pastures should be divided so that alternate plots may be used at irrigation periods for stocking a good pasture sod when ground is too wet is injurious to the grass plants. I have also found good results follow with my own dairy herd when different pastures were used at night than those that were grazed during the day. I also found it profitable, no matter how good the pasture might be, to furnish some hay twice a day, the quantity of hay being just what would be cleaned up mornings and evenings. The dry feed was always relished though sometimes when the pasture was prime only a small quantity might

(Continued on page 11)

Storr's Victoria—A first prize yearling Percheron stallion.

Price of Wheat

Just at the present time there is considerable discussion about the price of wheat.

It is of course generally known that the value of wheat of various grades and varieties depends upon three factors: First: the relative distance from the consuming markets because of the difference in freight rates to the points of shipment. Second: the variety of the wheat and its relative value for flour production. Third: the grade of the wheat as to quality and impurities within the various varieties.

These differences have been established by years of custom and experience and it is the object of the Food Administration in giving effect to the law to equably reflect these differences in value as far as physically possible.

The price of number one hard winter or number one hard spring wheat for the intermountain country is two dollars a bushel on a basis of f. o. b. outgoing car. No. 2 wheat is three cents less, No. 3 is seven cents less than no one and below this it is sold on sample.

The Inter-Mountain region comprises Southern Idaho, Western Montana, Western Wyoming, Nevada, Utah, Western Colorado, New Mexico, and Arizona.

As the miller is restricted to a "fair price" basis for his flour, he cannot pay more for wheat than the expense of milling and a reasonable profit will allow.

The farmer can protect himself by the study of the primary prices, deducting intermediate charges, or he can ship to the Food Administration Grain Corporation, or he may ship to a commission merchant at a terminal market, and through him secure the benefit of competitive buying.

There is nothing in the "1918 plan" which prevents a buyer at point of origin from placing his own grade upon the wheat which he purchases. If, by the buyer's act, the grade is raised, it is equivalent to an increase in the price. If the buyer lowers the grade, the producer or dealer's protection is to ship to the Food Administration Grain Corporation.

Marketing Direct to Food Administration Grain Corporation.

Producers or dealers have the right to bill cars of wheat direct to the Food Administration Grain Corporation at any of the principal primary markets. When the wheat is unloaded in the elevator, and weight and grade returns are made to the Food Administration Grain Corporation,, remittance will be made on the basis of weight and grades so reported, and on the basis of the Government price less one per cent (1%) administration charge for the service.

To this is added an inspection charge of one dollar and a weighing charge of fifty cents a car.

Country elevators and buyers are entitled to receive fair compensation for their services in the handling and marketing of wheat, and the charges for such service are necessarily a deduction from the terminal price of wheat. These charges are margins are well established by custom, and vary in different sections of the country according to local conditions.

Miller Can Pay Two Dollars.

Under the 1918 plan a miller can pay two dollars for No. 1 wheat if he wants to or he can ask a reasonable charge for handling the wheat. A reasonable charge is about 3 to 6 cents a bushel but no one is permitted to receive more than a maximum of seven cents a bushel.

The producer or dealer should always keep in mind, that if he is not satisfied with the prices paid by individual buyers, or with the grading of wheat, his protection lies in his being able to ship to the Food Administration Grain Corporation at the various terminal markets.

The miller can pay, as suggested above, two dollars for no one wheat and they can do this because of their profit on the sale or manufacture of flour.

Flour Milling Profit Control

The plan for the profit control of flour milling for the 1918 crops fromulated on the basis of naming a maximum "fair price" at which any miller may sell flour and feed.

This maximum "fair price" is based upon a reasonable allowance, above the fair price for basic wheat, for handling, milling and marketing expenses, freight charges on products, and profit. It is anticipated that competition will eventually reflect reductions from these prices.

The government this year allows a miller to make up to one dollar and ten cents a hundred as a maximum on flour. This one dollar ten cents include the cost of grinding wheat, handling storage, salaries, depreciation, interest and all that goes into the cost of making one hundred pounds of flour. The one dollar ten cents is a maximum price, there can be competitive prices according to the millers ability to manufacture flour. Some mills will be able for various reasons to manufacture flour much less than others, the average for the intermountain country is 88 cents and the government has placed a maximum of 1.10 including all expenses in the production of flour.

From the above statement farmers can see how to protect themselves as to the price of wheat.

Next week we will publish something about mill feeds.

DAIRYING

SAVE EVERY WELL-FAVORED HEIFER CALF

Dr. C. W. Burkett.

For each of the past two years New York State has taken a census of the agricultural holdings, supplies and livestock. The census completed February 20, 1918, showed there were 4000 fewer dairy cows and 84,000 fewer heifer calves than on the same date the year before. These are losses in cows and heifers in a single 12-month period. What is true of New York is undoubtedly true in a measure of many other sections of the country.

Present Surplus of Dairy Products Only Temporary.

While just now we have a temporary surplus of dairy products, that is not because we have too many cows or are producing too much butter, cheese, liquid milk or condensed products; the surplus existing to-day is due to other conditions—to lack of bottoms to carry butter-fat, cheese and condensed products to other parts of the world where these products are much wanted.

If shipping facilities were available, every pound of milk or cheese or butter or condensed poduct would be at once in demand at high prices. Reading, therefore, in the paper about a surplus of milk means a temporary surplus only, and is due to shipping facilities rather than to any other reason. There is a factor, however, that has tended to produce for a moment a surplus—the lesser use of milk in homes because people have thought that they could do their bit by such saving as a step in food conservation. The campaign to lessen bread consumption and butter has also been effective in decreasing the consumption of milk. This was a mistake, of course. To ask people to use less of milk and its products was to expect co-operation which increased current stocks of all dairy products. The Food Administration has recognized this error, and is now doing commendable work in correcting it.

The situation that confronts the dairy industry is temporary, therefore, and soon will find its own correction. Without a doubt there have been thousands of cows of little value in the dairy. Many of these cows were producing milk at no profit, and in numerous cases actually at a loss. Sending cows of this type to the butcher is commendable, and shows the fine judgment of dairy owners. Undoubtedly, also, the higher prices for second-grade beef have been potent in moving the less productive cows from the dairy stables to the slaughtering pens. The real alarming feature of the dairy situation is observed in the fewer heifer calves that are being raised. It is almost a calamity that there are nearly a hundred thousand less heifer calves in New York today than a year ago. It is this loss in heifer calves that threatens the dairy industry. It is the most puzzling state of affairs that has yet arisen. This means that the normal increase of dairy cows to meet the normal increase of population is not keeping pace, and that there will be an actual shortage of cows for supplying milk for the ordinary need of consumption.

Tremendous Shortage of Dairy Cows and Products in Europe Must Be Replenished by U. S. After the War.

While a milk famine will not actually result, a milk shortage is one of the possible conditions unless this tendency to slaughter dairy heifers is checked. So much for conditions in this country. The double reason for saving every well-favored heifer calf lies in the demand for dairy stock in Europe at the conclusion of the war. Dairy animals have been slaughtered right and left, not only in warring countries but in neutral countries. The shortage of food abroad for the past 12 to 24 months has depleted European countries of thousands upon thousands of dairy animals in each, many of the very best quality. There are over 30 million less dairy cows in actual existence in Europe today than existed prior to the outbreak of the war. After the war this country will be called upon to supply not only vast quantities of dairy products of every kind and description, thus requiring the use of every dairy animal here, but the United States will have to supply vast numbers of dairy animals for these other countries. This refers both to young stock and mature.

The Far-Sighted Cow Owner will Profit Most in the End.

Heretofore, America has not been an important dairy exporting country, sending dairy animals to the other side in any large number; as soon as the war ends dairy heifers and cows, running into hundreds of thousands, will be exported. Hence the farmer who veals, or otherwise disposes of his well-favored dairy heifers, will be taking a small price for an animal that if held would be worth many times the money obtained for it at this time. By saving these well-favored dairy heifers no risk will be run, no loss whatsoever has to be faced.

Whether these heifers enter into the exporting list or are kept here at home, it matters not. The world will need them as dairy matrons for milk and butter production and for breeding cows to restore the terrible losses of past years and to increase the dairy population to meet the needs of milkhungry human populations. The farsighted man is the one who wins. To be the far-sighted dairyman of these times, be the man to save every wellfavored daiy heifer in your herd. Do this to maintain your own milk output, your own herd, your neighbors' depleted herds, and to send abroad. The man who keeps and raises his dairy heifers will find his foresight will be repaid many times over. Save the heifers, the well-favored dairy heifers—in them will be a treasure that means both money profit and human service.

U. A. C. PRODUCES RECORD BREAKER COW

Marion Loganess Makes New Record in Milk Production.

Marion Loganess 272176 has stepped into fame. She has patriotically answered the call of the government for greater production by producing in the past year over 14,833 pounds of milk and over 430 pounds of butter fat and incidentally breaking a state record.

Marion Loganess 272176 is an unassuming little lady, who has had no special care but who has had the determination to succeed. She is one of the famous Holstein herd of the Utah Agricultural College. An account of her year's work is thus given by Professor George B. Caine, in charge of dairy husbandry at the U. A. C.:

"The Utah Agricultural College Dairy Department announces the completion of a new record of milk production with a two year old Holstein heifer, Marion Loganess, 272176. She was bred and raised by the college. She calved May 21, 1917, at the age of two years, 6 months and 5 days. She bid fair to at least make A. R. O. so we immediately started her on test. In seven days she produced 12.572 pounds fat from 384.10 pounds of milk. The highest production in milk, month was June, 1917, when she produced 1621.0 pounds milk an average of 54 pounds per day. The last full month in milk, April 1918, she averaged 39 pounds per day showing her to be a very persistent milker.

"The completion of Marion Loganess" official record shows 14,833.1 pounds of milk and 430,346 pounds fat. According to our records at the college there is no other heifer in the State coming close to this record in milk production and only one higher in butter fat, Pouplar Farm Kate III, a Jersey owned by Mr. Winder. Popular Farm Kate III calved at two years seven months, and made 431.14 pounds fat exceeding Loganess .18 of a pound of fat.

"Loganess has had practically nothing but herd treatment and was fed exactly the same as the herd cows. Her ration was made up of alfalfa, corn silage, bran and shorts, and lately a little Sun Ripe food."

WHEN MOLLY CHURNS

When Molly churns it seems to me,
That summer lanes and fields I see.
Once more I glimpse the herd at noon,
And bees upon the clover zoon.
There is no ice—no zero chill;
And violets are with us still,
For June our heart and fancy yearns
When Molly churns.

When Molly churns I hear a song,
That brings a breath of spring along.
I fancy I can smell the soil
Upturned and richened by our toil.
The dairy in the sunlight gleams
And there are whisperings of streams.
One's thougnt to pasture-beauty turns
When Molly churns.

When Molly churns, I see a lane,
With cows, home-coming, once again.
A dog is barking—pigeons coo,
And twlight soothes the heart of you.
The sweet, warm milk, like faint perfume,
Brings summer to the chilly room.
And May goes thrilling through the ferns
When Molly churns.

—Hoard's Dairyman.

EXAMINATION FOR DAIRY HELP

"Want a job on a dairy?"

"Yep."

"What do you know about cows?"

"Well—you have to be careful or they'll kick over the bucket."

"Anything else?"

"Sure—you drive them out in the morning and they come back loaded with milk and cream."

"What food value is there in alfalfa?"

"I don't know—I never ate any."

(Next applicant, please.)

Hoard's Dairyman.

HONEY CROP COULD BE INCREASED 10 TO 20 TIMES AT SMALL COST

About 250,000,00 pounds of honey are produced annually in the United States, California, being the leading State in the production of this sweet. Honey production in this country could be increased largely—ten to twenty times the present yield—without an appreciable increase in the cost of production, for the raw material—the nectar in flowers—is at certain times practically unlimited. To produce more honey we just need more colonies of bees properly managed. The proposition is very simple to state, but decidedly difficult to execute. Successful beekeeping requires a high degree of skill, special training, and faithful, persistent attention to the business, so any marked increase in successful beekeeping hinges upon educational work among present and prospective beekeepers. Permanent courses in beekeeping are being introduced in agricultural colleges, and extension work in beekeeping is now being conducted in many States. The United States Department of Agriculture is conducting emergency extension work in selected regions, where a considerable increase in the honey crop may reasonably be expected in the immediate future.

Losses of bees by disease, principally foulbrood, range during the summer from nothing to 10 per cent. Winter losses of bees range from 10 to 15 per cent, and in some States the loss was almost 50 per cent during the winter of 1916-17. Winter losses may be greatly reduced by more careful attention. The honey production business, commercially, is getting more careful attention. The honey production business, commercially, is getting more and more in the hands of specialists, because disease and winter losses discourage many who are untrained and unable to prevent these losses by proper treatment.

Honey became established some years ago as a seasonal product rather than a staple food for use throughout the year. The bulk of the honey was produced by farmers as a side line, the bees were given little attention and the honey was produced at little expense. The crop was marketed at low prices during the autumn, and stocks were usually exhausted during the winter. There was little demand and practically no supply during the spring and summer. But honey is now handled in a large way as a staple food product through the influence of commercial beekeeping, which has had a rapid development in recent years.

Honey is produced in three forms: Comb honey, in 1-pound sections as commonly retailed; extracted or liquid honey, which has been removed from the comb; bulk or "chunk" honey, in which the comb is more or less mixed with the liquid honey. From 1914 to 1917 the production of liquid honey has increased in proportion to the commercial output of comb and chunk honey. The bees are able to produce a large quantity of honey if they are not compelled to build comb for it, and when the comb is emptied and replaced in the hive the bees are able, in periods of heavy nectar secretion, to proceed immediately to the storage of more honey.

TURN ABOUT

He was about to propose, but before doing so he wished to make sure she was a competent girl. So he asked her:

"Can you wash dishes?"

"Yes," she said sweetly. "Can you wipe them?"

He didn't propose.—Record.

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And yet the price is lower than any other standard, high-grade separator.

With the new straight disc, all discs wash as one, the simplest to clean that is made.

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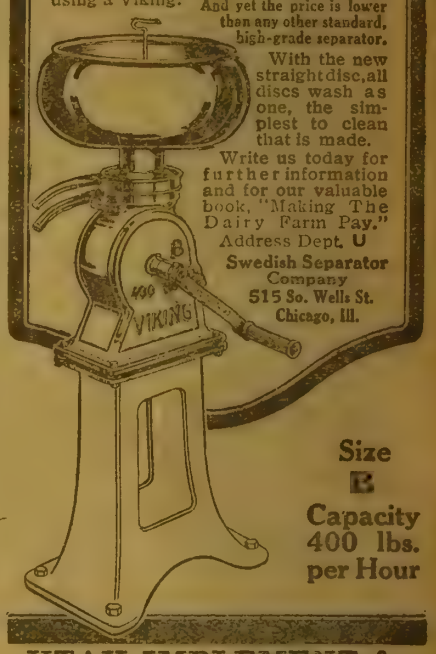

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Agents, Salt Lake City, Utah

AUTOMOBILE MOVES THE WORLD

The world has ceased to do things by halves and move at the old snail-like pace of a hundred years ago. In 1800 boats had to wait for a favorable wind before they could move on the ocean, but in 1807, a date not so far remote, the steamboat came and boats moved faster in all directions. Likewise, transportation has been cheapened and service increased. We are told that the building of the Erie Canal in 1837 reduced the cost of hauling a barrel of flour from $10 to 30 cents. Think of the fact that in 1850 people waited two weeks to get news from Europe and we now get it in an hour. In 1790 men saw the need of a faster way to prepare cotton for market and 1793 a machine came forth that is said to have increased cotton production tenfold. A hundred years ago the stage coach lumbered along at the rate of 80 miles a day while today the train takes us that many miles an hour.

Let's note more particularly the change in farming. Time was when a farmer could harvest 5 acres of grain in a day by working like a brute and having his wife to bind after the cradle. Now one man cuts and binds 20 acres a day and is not worn out when night comes either. Men used to be content to cultivate one row of corn at a round with a double shovel. Are we satisfied with that now? Certainly not; Fifty years ago the farmer in his ordinary travel averaged 5 to 7 miles an hour. In the face of all the progress just mentioned, with time worth ten times what it once was to a good farmer, in the light of common sense shall a farmer start to town today over a corduroy road at the rate of 8 miles an hour to get his plows sharpened? The only reasonable way for him to travel is in a motor car on good roads.

The way in which the farmers first recognized the motor car as a friend was when the doctors began to use machines. The telephone was a general use and when moments were precious people soon took notice that the man with a machine came in twenty minutes whereas the man with a good horse took over an hour to reach the patient People soon began to take notice and it was only natural that people call the doctor who had a machine. In a short time a veterinarian now and then began to travel in a machine. The story of the doctor and veterinarian was much the same. It was only a short time until both of these professional men who expected to stay in business owned machines. They were being watched on the speed proposition.

But there was one thing which was a serious drawback to both farmers and professional men and that was the fact that in winter they had to fall back to the old method of travel. People said: "Machines are no good; they can be used only in summer when roads are good." This caused to important developments. Salesmen and dealers began to recommend machines for all-year-service and vie with each other in selling them and people began to build good roads. The two movements started hand in hand and have been going ever since. It is interesting to note what changes these two movements have caused.

When the first cars were put out among farmers they were big and heavy but people soon learned that these heavy machines were not the thing for spring and on soft roads. The smaller machines began to take and the companies were quick to see it and today fully 80 per cent of the cars sold are of the lighter type. Then in just the last year, as people became thoroughly convinced that cars could be run all the year, the closed type of car has begun to be sold more and more and it would not be at all surprising if, in a few years, nearly all the farmers' machines were of that type. Better roads have been built and cement roads are being built in place from time to time and the old road runt and mud hole give promise of being a thing of the past in the near future; in fact, it is really a thing of the past now. The roads are not only better for machines but all kinds of hauling that must be done in connection with farm work can now be done quicker and with less power than in past years.

The question comes to the man who is considering buying a car, does its purchase pay in dollars and cents. Yes and no. Let's consider the two answers. There are farmers in this community who engage in buying stock. They found three or four years ago that they could no longer afford to use a horse and buggy and nearly all the stock buyers now use machines. In addition to the fact that they pay for this work they have the machines for the use of their family in a pleasure way. One man near here engaged in buying cattle, fattening them, butchering and delivering the dressed meat. This delivering was done with a one-horse wagon and often to a town 20 miles away. This man purchased a machine and trailer and a trip that before took six hours time can now be accomplished in two hours and the hands can have the horse to use at home. Think of four hours saved. What's a farmer's time worth? Fifty cents an hour if he is any kind of a farmer worth mentioning. Scores of farmers who carry on no special line of work testify to the fact that they could not get along without a machine both for business and pleasure.

Now as to those cars which are not a money-making investment. Some farmers save a few hours on a trip and use the extra time saved to make another trip when there is needed work to be done at home. The fault is the man's management not the machine. It's like some men who save as much on a six-hundred-dollar salary as they do on a thousand-dollar one, always spend it all no matter how much they get. Other persons allow the car to take them to amusement places when the winter's coal supply has not been purchased and hauled. Such cases are few but true just the same. The writer has in mind one prosperous farmer who bought a machine and after keeping it a year sold it. He gave as his reason the fact that himself and family were too tempted to go to places when they should have been repairing fences and improving the farm. He again bought a machine a little later and has owned one ever since. No doubt he and his family learned self-control.

A company buys a certain class of labor-saving tools for their workmen and then after using them, balance up the books to see if their use has paid in dollars and cents. The pleasure to the workmen is not taken into consideration. That can't or at least should not be done. The workmen of the farm, on the farmer's family if you please, deserve to use the equipment that brings pleasure as well as profit. In fact we can all do more if we are getting pleasure out of our work. The writer believes in seeing farmers work hard but why make slaves of themselves when at death it profits nothing. Better have a little pleasure as you go along being considerate of course for the rights of others at all times.—A. R.

Better Grain Yields From the Same Fields

No Extra Labor, Less Seed and a Bigger Crop

These are results that are even more desirable right now than ever before. They are obtained by using the drill that pulverizes the soil, makes the seed furrow, plants and covers the seed all in one operation—the

JOHN DEERE—VAN BRUNT Single Disc Drill

Handles any size seed from alfalfa to large bearded oats, peas and beans. All the ground is seeded—*patented,* adjustable gate force-feed compels seeds to leave grain box in even continuous streams—no crushing of seed, no choking up in the grain box.

Van Brunt Grain Drill

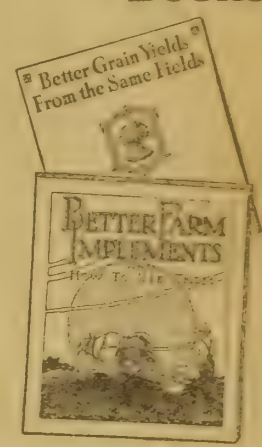
Quantity sown easily regulated by shifting feed gauge levers.

No clogging up—the Van Brunt successfully plants seed in mud, gumbo, or trash. Seed is protected until it reaches bottom of furrow.

Guaranteed disc bearings, high grade steel discs, non-sagging grain box and a tilting lever. Grass seed attachment sows broadcast or in drills, as desired.

Analyze the work of the Van Brunt Drill and you will find every part of the field properly seeded—no bare spots. All of the seed is in the ground at an even depth—all properly covered—no seed wasted. Every seed has a chance, every seed germinates at the same time—the crop matures evenly. With good seed and a good seed bed, the result is a big yield when a Van Brunt is used. A Van Brunt Drill pays for itself in a short time.

Valuable Books



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"Better Grain Yields from the Same Fields"—32 pages beautifully illustrated, telling how to select, test and plant seed. Also *"Better Farm Implements and How to Use Them"*—a 156 page text book on farm implements. Worth dollars.

To get these books just state the implements in which you are interested and ask for package B P 3. 30

JOHN DEERE, Moline, Ill.

WIN WITH POTATOES

The enemy is out-eating us in potatoes—out-potatoing us. Here are the figures—per capita weekly consumption:

United States	2.3 quarts
Austria-Hungary	8 quarts
Germany	16 quarts

We can beat them at their own food—which really isn't theirs; it's a native American crop. We must eat more potatoes says the Department of Agriculture and that right soon, or much of our record crop of last year will be wasted. Potatoes are plentiful and getting cheaper. Eat them instead of bread. Fight the enemy with potatoes.

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Advertising Rates. The advertising rates will be sent upon application.

Plan now to do some livestock feeding this winter. Do not sell your hay, feed it.

Weeds are robbers and we need all the food we can produce. Kill the weeds and help production.

One of the best ways to reduce the cost of producing your hogs is to provide plenty of pasture for them.

Spend a little time and see that your hay stacks are put in good shape so as to prevent any hay from spoiling.

If you have the ground and time plant a few fall turnips and try them out this winter as a feed.

Look to your baby chicks and see that they have plenty of shade, a place to run and all the cool water they can use.

There is a good demand for horses and will be for a long time. A good mare should be a profitable investment on any farm.

Plan now as to how you will take care of your grain. Have you a sufficient number of bags or will you handle it loose this year.

Make just a little more silage than you plan to use this winter. Feed is going to be valuable. You will be able to sell any surplus.

Lazy bee, no honey—lazy farmer no money. More true today than ever before. No farmer can make money by wasting his time.

A man to succeed in the poultry business must like that kind of work. The more you like it, the more you study it, the greater will be your success.

Keep the young pigs growing. A little extra care and attention now will pay well. Let them have plenty of room to run and grow. Feed them well it will pay.

A little extra care given the chickens during the hot weather will pay for time spent. See that plenty of clean water is always available. Keep the pens free from lice and mites.

"Like produces like." If you want to improve your livestock keep only the best sires.

When you stack your alfalfa hay add a little coarse salt. The livestock will like the hay better and the salt acts as a preservative and will help to cure the hay.

What a strength there is when the whole family are pulling together. How can they do it unless they know something about the plans and ideals of the farm. First plan together then pull together.

Everyone who goes into our mountains and canyons should help protect our forests against fire. The hot dry weather makes it very easy for a fire to spread and care should be taken to see that one does not start.

Even with the wonderful big crop we are producing there is a question as to whether there will be enough food for home consumption, our boys at the front and our allies. We must produce as much as possible and then conserve it and use it to the best advantage.

HARVESTING OUR GRAIN

Never before has harvest meant so much to us, many fields have already been harvested and the busy season is now on. Our supply of wheat is limited even with the large crop we are harvesting. We must help feed our allies and our increasing large army at the front.

Save every kernel of wheat, be just a little more careful this year. Gather the grain in the corners and along the fence and ditch banks. At two dollars a bushel it is worth saving and we need every bit of it for food. A great deal of wheat has been allowed to stand and get over ripe and there will be a loss in handling. When threshing see that all of the wheat is saved, do not let any go out with the straw. Use every method possible to save the wheat.

CULTIVATION

From now until harvest one of the most important operations on the farm is cultivation. More cultivation and less irrigation can be wisely followed on many of our farms. If any weeds are allowed to grow they will rob the growing crop of moisture and plant food. The market value of our farm products are too high to leave anything undone that will produce more per acre. There are many ways to cultivate, many kinds of cultivation tools, and every farmer to get the best results must know where and how to use them. Cultivation will help conserve the moisture and will help the crops to grow. An extra cutlivation will pay, and often will pay the best kind of wages for the time spent. Nature seems to respond to a cultivation with an increased growth.

ABOUT THE PRICE OF ALFALFA

There are a number of farmers who are asking what the price of alfalfa should be. Our crop of alfalfa is not as heavy this year as last. We have also increased the number of livestock in the state. Our neighbors on the north have had a great deal of their alfalfa spoil on account of heavy rains at cutting time. California is very short of pasture and hay and some are predicting that alfalfa hay will sell there this winter at forty dollars a ton. Alfalfa is now selling in the field at fifteen to eighteen dollars a ton in Utah. Local conditions will make some difference as to the price. The present outlook, is that alfalfa will be as high, if not higher priced than last winter. The high price of feed emphasizes the need of better care so as to conserve every pound and also to make the best use of it in feeding.

PRICE OF WHEAT

The price of number one wheat for the intermountain territory is two dollars a bushel delivered at railroad station. If sold direct to the government a deduction for handling will be charged of one per cent and an inspection charge of one dollar and weighing charge if fifty cents per car.

There are a few changes this year from last. One of the most important to the farmer is that the miller can pay two dollars a bushel if he wants to for the wheat or he can have a reasonable charge for handling it, for this service the amount is about 4 to 6 cents a bushel. Under no condition is the miller or buyer allowed more than a maximum of seven cents a bushel. Number two grade of wheat is priced at $1.97 and number three at $1.93, grades below this are sold on sample.

PLAN TO SILO YOUR BEET TOPS

There are several reasons why every beet grower should silo his beet tops this fall. Hay and other feeds are going to be high priced. Every beet growers should feed some livestock on his farm to make more money and keep up the fertility of the farm. Those who siloed beet tops last winter are going to follow the same method again. Thousands of tons of beet tops have not been used to the best advantage in the past and now is the time to use modern methods, conserve this great amount of feed and use it to better advantage in feeding more livestock.

The Utah Farmer will publish a number of articles on this important subject, going into detail as to how it should be done. Arrange your work so that you can feed a few extra livestock, using the beet tops along with other feed you have on the farm.

FENCE ROWS AND DITCH BANKS

If the heavy growth of weeds along the fence rows and ditch banks are any indication of the yielding possibilities of our western soils, it would be an easy matter to convert any buyer that we have very fertle soils. Do those farmers fully realize the amount of damage that comes from unsightly fence rows. They are unsightly and do no good at all. Think of the seeds you are raising to supply your farm with weeds for next year. Think of the extra work necessary to keep the weeds out if you want to raise a good crop.

Wild rose bushes, thistles, mustard, cockleburs and other noxious weeds growing in thick bunches any where on the farm is just like an invitation to come live with them.

If you want your farm free of weeds, crop pests, such as mice and others clean your fence rows and ditch banks of weeds and rubbish. Your farm will look better, produce better crops and you will feel better. Clean them up now.

KEEPING PURE-BREDS

Often you will hear a farmer say it is an expensive luxury to keep pure-bred livestock on the farm, that grade stock will do just as well. Those who are making a study of pure-breds do not think this way, they know better. There are farmers who are making good money in the pure-bred business. Many of them started in a small way and have gradually grown into the business improving their herds each season by purchasing better sires as needed.

It would be a mistake for any one to start to raise pure-breds unless he will give the business the time and attention it requires. In many cases exceptional good returns have come from the sale of pure-breds. Purebreds require more care, time and attention than is usually given the ordinary animals. Scrub animals when given extra good feed and care will surprise you how much better they will respond.

If one does not care to keep pure-breds he should at least keep a pure-bred sire. Experiments have shown that half-blood animals both dairy and beef are a big improvement on the dams. After a few generatons of breeding to good sires the offsprings can hardly be told from pure-breds.

Keep pure-breds if you can and be satisfied with only pure-bred sires.

Shall We Sell Cream or Butter?

W. H. Underwood.

Is it more profitable to market cream or make and sell butter? This is a question of no little importance to every one who keeps cows, from whose products he wants to make the greatest profit. On our farm we have for a number of years maintained a herd of from 20 to 30 high producing dairy cows and in our experience in marketing cream and making and selling butter we have found that cream-selling is the most profitable, everything considered. The cream is shipped by rail direct to the creamery, which is located 45 miles from the farm. We use the regular 10-gallon shipping cans, which are immediately returned to us. In our experience in shipping hundreds of gallons of cream in this way we have never had cause to complain of not receiving satisfactory returns.

When cream is sold, instead of making it into butter, there is a saving in time and labor. Cream is easily and quickly prepared for the market, emptied into the can and sold to the cream station and a check received by mail, in case the producer is not located near enough to the creamery to make personal delivery. The check for the cream will come within a day or two following the delivery of the cream at the railway station or at the end of the week. There is a good demand for any quantity of cream at any time of the year. It brings the cash right on the spot. All that is necessary to do in obtaining the cream is, after the milk is drawn from the cows strain it, run it through the separator, cool the cream, pour it into the delivery can, attach a tag to the can, if the cream is shipped by rail, and deliver the cream twice a week in winter and three times a week during the summer.

On the other hand, if the cream is converted into butter the cream must be ripened and held at the proper temperature, which is not an easy matter on the average farm in either the cold weather or hot summer months. After the cream is ripened to the proper degree there is the objectionable job of churning it into butter. On the farm where only a small amount of butter is made it is generally the farmwife who does the churning and usually she must do it in the old-fashioned way which is certainly no easy task. Any methods that will lighten the duties of the farmer's wife should be employed and one of the methods by which this may be done is to sell the cream instead of making it into butter. It will certainly not decrease the profits. When the churning process is finished the butter must be worked, salted and moulded, cooled and wrapped for the market.

When the butter is ready to sell there is the risk to run in getting a satisfactory price for it. It may be of poor quality, for it is a fact that many people on the farm are unable to make a number one article of butter. Even if it is first class butter it will sell for less than the same amount of cream it took to make it will bring. Why is it that many will sell butter under creamery prices to a merchant who may be already over-supplied with butter? Of course the merchant wants to hold the patronage of his customers and this is one reason why he buys the butter even though it be of very poor quality, but I am unable to understand why many will go to the trouble of making the butter, sell it to the home merchant at about 25 cents a pound and pay him the retail price for his goods, whereas by selling the cream they can save time and labor and get more for the cream than the butter.

If those who have three or more good cows, and no cream separator, and who have been and are making and selling butter instead of cream, will get a separator and give cream-selling a trial I am sure they will not go back to butter-selling. When cream is obtained in the old way of skimming there is a great loss of butterfat in the milk. A good separator prevents this loss. With 8 or 10 good cows it doesn't take a separator long to return its cost in the amount of butterfat it saves. Besides the saving in butterfat the separator eliminates a lot of work in cream production.

Why creamery butter sells for more than country-made butter when all kinds of milk and cream are used in its production as a matter that many do not understand. The creamery has the necessary equipment for making butter along scientific lines. Large quantities of mixed lots of cream are ripened to the proper degree and made into butter of a uniform quality. Under the most favorable conditions the churning, washing, working and salting are done at the proper time and more economically than is done on the farm. The product is packed in air and light-proof cartons, preserving its flavor longer and making it easier to handle than when it is packed as it generally is on the ordinary farm.

Every person interested in dairying should have a complete and clear understanding of the difference between butter and butterfat. It is the absence of this that accounts for many a misunderstanding between cream buyers and cream sellers. Many a creameryman has found himself "stumped" when he has attempted to explain to a patron why more pounds of butter can be made from a certain quantity of cream delivered to the creamery than the pounds of butterfat that the producer is paid for. "Backsliding" or "backslidden" patrons very often uncourteously tell the creameryman that he is not giving honest tests, as more butter has been made at the farmer's or dairyman's home than was paid for the butterfat at the creamery from an equal quantity of cream. The producer of the cream is right when he says he can make more butter from a given quantity of cream than the number of pounds of butterfat he would be paid for at the creamery from the same cream. He is mistaken, however, when he considers the creameryman has been dishonest with him because it is an inevitable fact that the butter should exceed the butterfat.

Butterfat as shown by the Babcock test is practically a pure oil. There may be and probably is a small quantity of water or acid in the fat column in the neck of the test bottle, but we will suppose it is a pure oil, as the impurities have no material influence on the final result of the Babcock test. The butterfat is a complex oil made up of fine different fats, each having its own particular melting point. When, however, they are physically united the alloyed fats have a common melting point.

When the butterfat is in milk or cream it is in the form of minute globules, it being emulsified throughout the mass. It is then in very close physical relationship with the other components of the milk product and without adding a sufficient amount of acid to destroy all the solids in milk, not fat, it would be practically impossible to get it free from the other milk components. When cream is churned there still remains this close relationship between the butterfat and some of the other milk components. While the butterfat becomes more united and in a solid form during the churning process it takes up or becomes more or less closely united physically with water and curd or casein which were in the cream. Besides these substances there is incorporated in most butter enough salt to give it the desired flavor.

Butter then is composed of butterfat, water, salt and curd. Hence more butter can be made from a given quantity of butterfat than the amount of original butterfat. In creamery practice an attempt is made to get about one-fifth more butter than butterfat. For instance, if 100 pounds of butterfat were in a churning an effort would be made to get about 120 pounds of butter. This increase of butter over butterfat is known as "overrun." This is one of the factors that makes it possible for the creameryman to pay more for a pound of butterfat than the producer of the cream can get for a pound of butter made on the farm.

Every cream producer should know how to estimate the quantity of cream that can be obtained from a given amount of milk. As an example, take a cow giving in one month 40 gallons of milk of which four per cent is butterfat. It is desired to find out the quantity of cream that can be obtained from a month's yield of milk. First reduce the gallons to pounds, which is done by multiplying by 8.6. Thus 40 gallons of milk will equal 344 pounds. There are 13.8 pounds of butterfat in this milk, or four per cent of the whole. To find the quantity of cream that can be obtained divide the pounds of butterfat (13.8) by the percentage of cream desired. With a separator cream may be separated at almost any richness from 10 per cent to 60 per cent, but we will suppose that a 20 per cent cream is desired. Then divide 13.8 by 20, the percentage of fat in the cream, and the result (69) will be the pounds of 20 per cent cream to be obtained from 344 pounds of four per cent milk. The 69 pounds will be about eight and a half gallons of cream.

REPORTS ON LIVESTOCK MOVEMENT

Increase in shipments of cattle, hogs, and sheep from 46 cities are shown also by the report. These were, respectively, 4.0, 22.8 and 23.2 per cent more in June, 1918, than in June, 1917. The increases in shipments from 47 markets for the first six months of 1918, as compared with the first six months of 1917, were 12.3 per cent for cattle, 16.1 per cent for hogs, and 9.6 per cent for sheep.

Reports for 44 markets for June, 1918, show that local slaughter of cattle was three-tenths of one per cent, and that local slaughter of sheep was 6 per cent more than in June, 1917. Slaughter of hogs decreased 1.7 during the corresponding period. The increase in local slaughter of cattle and hogs was 9.5 per cent and 5.6 per cent, respectively, and the decrease in local slaughter of sheep was 11.6 for the first half of 1918 as compared with local slaughter for the first half of 1917.

Shipments of stocker and feeder cattle from 38 markets and sheep from 24 markets during June, 1918, totaled 21,298 and 193,769, respectively. This was a decrease of 3.6 per cent for cattle and an increase of 32.7 per cent for sheep as compared with June, 1917. Shipments of stocker hogs from 23 markets showed an increase of 100.1 per cent, the total for June, 1918, being 35,314. Shipments of stockers and feeders of all three kinds showed increases for the first six months of 1918 as compared with the first six months of 1917. The increase for cattle was 6.1 per cent for hogs 77.4 per cent and for sheep 48 per cent.

Receipts for horses and mules were 31.8 per cent lower in June 1918, than in June, 1917, and shipments were 27.7 per cent lower. For the half-year periods the decrease for 1918 was 6 per cent for receipts and 4.7 per cent for shipments.

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HOME

GETTING ACQUAINTED WITH CALORIES

Verna Jackson McKenna.

The question in the minds of the housewives today is: "How may we know just how much food to give the family, how can we measure this food, and how may we know that the food is meeting the individual requirements of each member of the family?" The housewife can answer this question for herself more easily when she is better acquainted with calories.

Now of all times, the business of homemaking is, in many ways, one of the most important in the world. To fill the job successfully it requires thought, study and work the same as any other business. In the homemaker's business is a success she has a well and properly fed household that should rise up and call her blessed. Very often sickly or poorly developed children and a husband who seems unable to get on in the world is an indication of a homemaker's failure.

If the income is large the average woman can easily furnish her family with comfortable living conditions and good food even in this day of high prices; but we of the small income must study and work harder for wisdom and skill in management to make a little go a long way. The woman who has little to spend and yet keep the family diet up to standard, needs most to know how to get the best results of her money.

Since prices have soared and many of our most plentiful staples seem to be in danger of a serious shortage, we must economize; but it is a dangerous thing to try economizing on food unless one has an understanding on food values. In order to have this understanding one must know a few necessary food terms and also know what foods are absolutely necessary for the health of the family, and where it is wise and safe to cut and substitute and where unwise.

Classification of Foods.

Food has been said to be any thing which when taken into the body is capable of building or repairing tissue or furnishing energy. Science defines energy as the power to do work. Food then gives us our working power. Generally speaking all kinds of food give energy for work, but the best and cheapest foods for this purpose are the ones contained in starches, sugars and fats. Likewise all foods build and repair the body, but the substance for this, called protein, is found in largest quantities in such foods as meat, milk, eggs and cheese. Mineral matter, or ash, is as essential as protein for the proper growth and development of the body. In a general way we would say that our body building or protein foods come from the animal kingdom, the energy or carbohydrate group from the vegetable kingdom and the fat for heat and energy from both.

All the food substances are classified under five heads, namely: water, protein, carbohydrate, fat and mineral matter.

Water ranks as a food because it is extremely important in the process of digestion. It keeps the tissues moist and regulates the temperature of the body. A large amount of water is required for these functions—for most people at least one quart should be taken each day.

Protein alone supplies the necessary elements for building and repairing tissues and for nourishment for the brain and nerves. It is the most valuable and expensive part of our food supply, and it is needed every day, hence it is well to have a list of the protein foods and whenever possible substitute the less expensive for the more expensive. The foods we are most familiar with containing much protein are lean meat, fish, fowl, milk, eggs, cheese, dried peas and beans, nuts and peanuts. At the present prices of meat and with the outlook for the future prices still more discouraging, most of us are glad to know that the various meat-substitute dishes such as peanut loaf, bean loaf, bean stew with dumplings and the various cheese and egg combinations are as nutritious as meat and doubtless many of us will find ourselves benefited by using less meat. Then, too, we have the satisfaction of knowing we are doing our patriotic duty in saving the beef, pork and mutton for our army.

Under carbohydrates come the two largest groups, starches and sugars, which furnish heat and energy for the body. Since work requires energy the active person should partake freely of the carbohydrates. These are found chiefly in bread, cereals, potatoes, corn, macaroni, rolled oats, fresh and dried fruits, honey and many vegetables and the cane, beet and maple sugars.

Fats are not the only source of fuel but perhaps the most important. In our temperate climate we do not require much fat—perhaps a tenth as much as carbohydrate. The fat foods are butter, bacon, cream, cheese, nuts, chocolate, vegetable oils and the meat fats.

To regulate the body processes, that is, to keep the body strong and able to resist disease and to build and repair the bone, mineral matter is required in the form of calcium, or lime, phosphorus, iron, sulphur and many others in small amounts. These minerals we get mostly from fruits and vegetables. Although other foods, especially eggs and milk, contain valuable minerals. The growing child needs milk, egg yolk and oatmeal for calcium, or lime, which is essential to bone development. Phosphorus, considered one of the most important mineral constituents in body building, is found in egg yolk, milk, entire wheat, dried beans and peas, cocoa, peanuts and carrots. Iron, which makes good thick blood, we get from both animal and vegetable foods as meat, cereals, and egg yolk. Spinach, prunes, raisins, strawberries and oatmeal are valuable sources of iron.

A "well-balanced diet" then is one which furnishes all of these necessary elements. There must be a definite amount of fuel, a proper percentage of protein, the mineral content liberal, some food for bulk, the whole selected with a regard for the tastes, habits and pocket book of the family.

The Calories—A Heat Unit

Let us recall the familiar comparison of the body to a steam engine because we must consider the human body as a perfect machine. Just as the engine uses coal for fuel the body uses food as its fuel to generate power. Since food is measured in terms of fuel value, a heat unit of measure must be taken, and, as heat cannot be measured by weight or length, but by change of temperature, we call the heat a calorie instead of an inch or pound or yard. In other words the nourishing power of food is measured in calories. The average daily requirement of food is 2500 calories.

Estimating the Daily Food Requirement.

The determining factors in estimating the daily energy requirement are: season of the year, type of the individual, occupation, age and sex.

The quantity and kinds of food should very with the seasons. Usually less food, especially fats and the highly concentrated foods, is needed in the summer. Instead of going to the doctor for a spring tonic one should eat more vegetables, especially those containing iron, and get the minerals in the natural way.

The weight, size and shape of the individual affects the food requirement. It takes more food for a large person than a small person just as it takes more fuel to run a large machine than a small one. The tall slender person requires more food than the short fleshy person of the same weight because he has more surface exposed that has to be kept warm.

The occupation is one of the most important factors in determining the kind and amount of food one should have, for, the man who is working hard with his muscles needs more than the man who sits quietly at his desk. He is expending more energy, therefore he should have more food to build the broken down tissues. Also he can take more foods difficult of digestion than the man of sedentary habits. The man engaged in moderate work such as book-keeping requires about 3000 calories whereas the man doing hard labor needs about 5000 a day.

Children require less food than adults but not in proportion to the weight for the child needs food to grow on, especially the protein and ash or mineral matter. The aged person does not need as much food as the person in middle life because his strength has been lessened and he requires less food for building tissue and carrying on the body activities. At twelve years of age about 2000 calories is required, at thirty about 3000, and at eighty about 1600.

Sex also affects the food requirement. Men are more active than women and have more muscle, so require more food. A woman of about the same weight as a man, working under the same conditions would require a little less food. Then for the ordinary family of five there are five varying food requirements that the housewife should become familiar with. If the father is burdened with an excess of fat she should reduce the food value of his diet, giving him more bulk so his appetite will be satisfied and his health improved. If the little daughter is underweight and cannot take any more bulk she should be given a little more of the body-building foods in a concentrated form as eggs, cream and milk and reducing the bulky foods if necessary.

If the housewife knows the caloric value of all the common foods it is an easy matter to furnish a diet that will be satisfying and nourishing, that is, have the right proportion of protein, fat and carbohydrate. If one is careful to have the total number of calories per day to come up to the individual requirement and if ten to fifteen per cent of the colories are protein, and the diet is varied, the carbohydrate and fat will take care of themselves, and one will have a balanced diet.

Dividing the Day's Rations.

Knowing one's energy requirement for the day one can regard the quantity of food to be used at each meal as a matter of personal choice. However, it is more convenient to divide the day's rations in estimating the energy value of the food of each meal. This division is usually made with one-third for breakfast, one-fourth for luncheon and five-twelfths for dinner. Unless one has the evening meal early it is better to have dinner at noon and in that case the proportion for supper would be the same as for lunch.

For all practical purposes the one hundred calorie portion is used because one calorie of food is such a small amount. Of course it is not expected that any housewife has the time to calculate the meals for every member of her family every day but a general knowledge of one-hundred-calorie portions will enable her to easily ascertain if her family is being well nourished without being over nourished.

TAPIOCA IN NEW DISHES

Those who gloried in the food adventures of "The Swiss Family Robinson" remember them as true conservationists. They used no wheat flour, ate the perishables, used local supplies, and laid by ample food reserves for lean seasons. The "Home Card" might well have hung from the window of their tree-house. The discovery of a "substute" flour on the wheatless island was worth the excitement it created. You remember how they pounded the cassava root and produced a flour from which the good mother made a sweet loaf.

Cassava flour is used today in tropical countries and has about the same food value as wheat flour. A familiar product from this same root is tapioca, high in food value, and useful because of its starch content in giving body to many dishes, some of them perhaps new to housekeepers. In the recipes given below use quick tapioca.

Duchess Soup

½ onion, 2 tablespoons fat, 2 tablespoons tapioca, 1 quart milk, 1 egg or 2 egg yolks, ¾ cup grated cheese, 1 teaspoon salt, paprika.

Directions: Cook the onion in the fat until tender but not brown. Remove the onion, add the flour, then the milk gradually, saving ¼ cup. Add the tapioca and seasonings and cook 15 minutes. Pour the soup over the egg, beaten with ¼ cup of cold milk. Add the grated cheese and serve immediately.

Tapioca may be used for thickening soups, gravy and white sauce. Cook the white sauce in a double boiler allowing one tablespoon of tapioca to one cup of milk.

Tapioca Griddle Cakes.

2 cups milk, 2 tablespoons tapioca, 1 egg, ½ teaspoon salt, ¾ cup rice or corn flour, 2 level teaspoons baking powder.

Cook milk and tapioca in double boiler 15 minutes, add beaten yolk of egg and cook until mixture thickens like custard; cool and add beaten white and whip in well; add flour and baking powder. Bake on griddle and serve piping hot with butter and honey.

Minute Rabbit.

1 pint milk, 3 tablespoons tapioca, 1 cup cheese, 1 egg well beaten, ½ teaspoon mustard, ½ teaspoon salt, pepper or paprika to taste.

Directions: Scald the milk in a double boiler and when hot add the tapioca. Cook 15 minutes; then add the cheese cut into small pieces. Stir constantly till the cheese is melted, add the well-beaten eggs mixed with a little cold milk, the mustard, salt and pepper. If desired, this may be turned into a baking dish and baked until brown.

Fruit Mold.

3 level tablespoons tapioca, 2 tablespoons sugar, 1 teaspoon vanilla, ½ pint cream, 1 pint milk.

Heat the milk in a double boiler, add the sugar, stir in the tapioca, and cook for 15 minutes. Pour into a bowl to cool; then fold in the whipped cream. Ornament with fresh berries, chill and serve.

Because of the frequent warnings given out and the means suggested for prevention of fires, there is less loss from fire than was the case several years ago. It is somewhat difficult to prevent fires from lightning, that is, one is not always secure even when a building is rodded, yet the danger is less if proper rods are installed. But fires caused from the careless handling of matches, poor chimneys, the lighted pipe or cigar, improper storage of gasoline, etc., may be prevented by observation of rules that should be a part of every rural household. Protection from destructive fires is not so easily provided for on the farm as in the city, because almost every city has an efficient fire department. For this reason prevention of fires should be the watchword. If a fire does start one must use forethought in getting it stopped early in the event. Woolen blankets or rugs will smother a fire quickly, and wet brooms, sand and water are also effective. One should vacate an upper room as soon as possible as the heat and smoke soon collect there. In going through a fire, cover the face with a wet towel and wrap the head and body in a woolen blanket. Every home should be provided with a few reliable fire extinguishers, even if every member of the family is trained in the rules of fire prevention.

FOOD RESERVES AND FIRE HAZARDS

The U. S. Food Adminstration issues the following statement of fire hazards in rural districts and the importance of safeguarding the Nation's food supplies against this danger.

The season is at hand when farmers are to fill their barns with hay and grain. This period when barns, granaries and storehouses contain the greatest amount of food supplies is also the time when they are most liable to fire destruction.

Farmers are the only large handlers of food supplies upon whom the Government depends, entirely without supervision by inspectors, to guard their holdings against losses by fire; and in view of the supreme importance of guarding this season's stored crops, farmers are asked to consider destruction or spoilage of food through fire as a misfortune to the Nation and the Alnes as well as a personal loss to the holder.

Prominent among the many sources of fire in rural districts are lightning defective flues and stoves, spontaneous combustion, carelessness with matches, incendiarism and sparks from chimneys and locomotives.

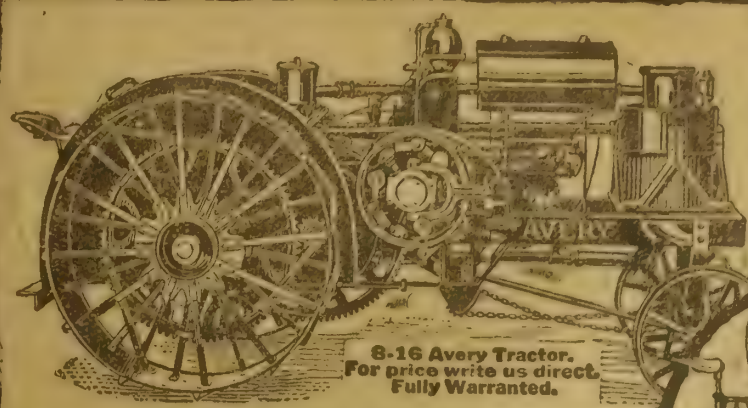
Effective means of fire prevention and control are understood by the majority of property owners but particular attention is called to the importance of removing inflammable trash from the vicinity of buildings, and to adequate equipment in ladders and buckets when more modern equipment for extinguishing fires is lacking. Properly installed systems of lightning rods and conductors are suggested as protections against lightning. The paramount thought is to save from loss not only farm buildings, but the food and feed they contain.

It will be remembered that famine in ancient Egypt was prevented by a little governmental foresight and it does not require any alluminating dream to anticipate that so long as the war losts, with its increasing drafts of soldiers or ammunition workers, the world will steadily produce less and less food. If this year's harvests prove abundant, it will be the first duty of American people to place grain they can save into storage for future need.

WHAT COMMUNITIES CAN DO TO ELIMINATE HOUSE FLIES

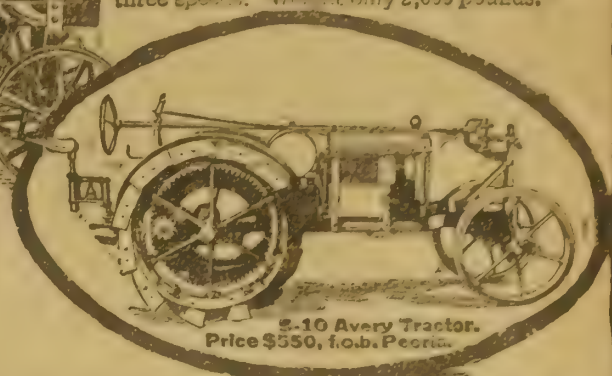
Antifly crusades have been very numerous in recent years and some have been noteworthy both as to methods and results. However, it will not be amiss here to emphasize the importance of concerted, organized effort on the part of whole communtiies, not only cities but suburban and rural neighborhoods as well. By the most painstaking care one may prevent all fly breeding on his premises, but it will avail him little if his neighbors are not equally careful. Some sort of co-operation is necessary. One of the first and most important elements in any antifly crusade is a vigorous and continued educational campaign. It has been the experience of those who have undertaken such crusades that people generally regard the fly as a somewhat harmless nuisance and that the first work of the campaign was to bring the people to a realization of the dangers from flies and the possibility of getting rid of them. In the educational campaign every possible means of publicity can be employed, including newspapers, lectures moving pictures, posters, handbills, cartoons, instruction in schools, etc.

The antifly crusade is a matter of public interest and should be supported by the community as a whole and engineered by the health officers. But health officers can do little toward the necessary work of inspection and elimination without funds, and therefore the support of the campaign must manifest itself in increased appropriations for public-health work. Very often it is lack of funds which prevents the health officers from taking the initiative in the antifly crusades, and there must necessarily be much agitation and education before they can profitably take up the work. Right here lies a field for civic associations, women's clubs, boards of trade, etc., to exercise their best energy, initiative, and leadership.—Farmers Bulletin 679.



The wonderful Avery 8-16 Tractor (to the left) pulls 2 or 3 plows and drives 15-inch thresher, etc. Fully warranted. Price includes a reasonable profit to dealers **who are obligated to supply Avery Service.**

The 5-10 Model B Avery Tractor (below) is **just the tractor for small farming, fifty acres or less.** Just the thing for truck gardening, fruit growing, etc. Gear driven selective type, three speeds. Weight only 2,000 pounds.



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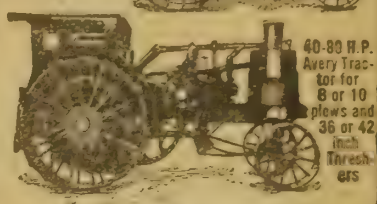
Avery Tractors are entirely built in our own big factories and every part of an Avery Tractor (motor, radiator, transmission, etc.) is built **especially** for tractor work and **only** for the Avery Tractor. The Avery Company are builders—not assemblers. They specialize in motor farming machinery. Don't confuse the Avery Tractor and other Avery machinery with the ordinary assembled machine.



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Avery Tractors are the only make with a Duplex Gasifier. It does the trick—turns kerosene or distillate into gas.

The Avery motor is low speed. Main bearings are adjustable from the outside. Patented inner cylinder walls are removable. All parts are accessible and every part renewable. With the three or four-plow Avery Tractor and an Avery Motor Cultivator, one man can prepare and cultivate two and one-half times the acreage of corn that can be raised with horses.

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Go to the Avery dealer and select and buy the size tractor and equipment to meet your requirements (no matter how small or how large the acreage you cultivate) or write direct for complete Motor Farming Catalog.

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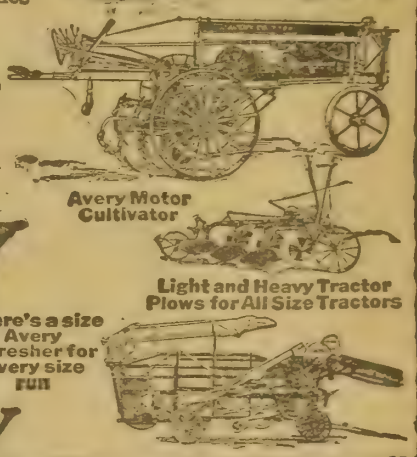

AVERY Motor Farming Machinery

JELLIES FROM PECTIN

This Substance May Be Extracted from Fruits Rich in It, for Use with Fruits Deficient in It.

Pectin the essential jelly-making substance, may be extracted from fruits rich in it and this concentrated product used with the juices of fruits deficient in pectin, for the making of excellent jellies.

Apple Pectin.

1 pound apple pulp (or skins and cores).

Juice of 1 lemon.

4 pounds water.

Boil for ½ to ¾ hour, press the juice through a cloth bag, then allow this juice to drain without pressure through a heavy flannel or haircloth jelly bag. This juice when cold should be tested with alcohol to determine the proportion of sugar to add to a volume of juice. Pectin can be bottled, processed for 15 minutes in a water bath at boiling, and kept until needed for jelly making.

Orange Pectin.

Cut or scrape the yellow rind from the peel of the orange, the white portion remaining being passed through the food chopper and weighed. For each pound of this prepared peel add 2 pounds of water and 4 tablespoons of lemon juice, mix thoroughly, and allow to stand 15 minutes. Then add 2 pounds water, boil 10 minutes, let stand overnight. Next morning boil 10 minutes, allow to cool, press to remove juice, and then drain juice through a flannel bag. If not desired for immediate use, bottle and process as for apple pectin.

Mint and Orange (or Apple) Pectin Jelly.

1 pint concentrated orange (or apple) pectin juice.

1 pound sugar.

2 drops oil peppermint.

2 drops green vegetable coloring.

Bring the orange or apple pectin juice to boiling, add sugar, and boil rapidly until the jelying point is reached. At this point 2 drops of green vegetable coloring matter is added, together with 2 drops of oil of peppermint. Stir thoroughly, and pour while hot into clean, sterilized jelly glasses. After a few moments the scum which rises to the top may be removed from the jelly easily with a spoon. Complete jelly as previously directed.

Strawberry and Orange (or Apple) Pectin Jelly.

½ pint concentrated orange (or apple pectin.

½ pound sugar.

½ pint strawberry juice.

Mix orange (or apple) pectin juice and the strawberry juice, bring to a boil, and add sugar. Continue boiling until the jellying point is reached. Pour immediately into hot sterilized jelly glasses and skim. When cold, pour hot paraffin over the jelly.

Pineapple and Orange (or Apple) Pectin Jelly.

Add 1 pint orange (or apple) pectin juice to 1 pint pineapple juice which has been boiled for 10 minutes, add 1 pound of sugar, and continue boiling until the jellying point is reached. Pour immediately into hot sterilized

(Continued on page 13)

The Feeding Value of Sunflower Silage

Oscar Tretsven, Montana Experiment Station.

Encouraged by the satisfactory results obtained from an experiment, conducted during the winter of 1916-17, when sunflower silage was compared with choice alsike clover hay for dairy cows, the Montana experiment station decided to carry on further investigations to determine the merits of this new forage plant.

In the latter part of May, 1917, five and one-half acres of weedy irrigated land were planted to Mammoth Russian sunflowers. The seeds were drilled in at the rate of 14 pounds per acre in rows 30 inches apart and from 10 to 12 inches apart in the rows. Before the sunflowers were irrigated they were cultivated twice and the weeds growing in the rows were hoed by hand. Five acres of the sunflowers were cut between the 13th and the 20th of September for silage purposes when about 30 per cent of the stalks were in bloom. At this stage of maturity a yield of 24 tons were obtained per acre. The remaining half acre of sunflowers was compared with green corn as a soiling crop for milk cows. Two lots of cows as nearly equal as we could divide them were receiving the same ration of grain. In addition the cows in Lot 1 were fed a full feed of chopped sunflowers, while the cows in Lot 2 were fed a full feed of chopped field corn. At the time this test closed, the corn used was in the roasting ear stage and the sunflowers were about 40 per cent in bloom. The following table gives the results obtained:

		Sunflowers Lot 1.	Corn Lot 2.
Number of cows in each lot		6	6
Number of days in test		28	28
Average initial weight of cows	Lbs.	1119.5	1112.7
Average final weight of cows	Lbs.	1111.7	1092.3
Loss in live weight per cow	Lbs.	7.8	20.4
Average grain fed per cow daily	Lbs.	8.71	8.55
Average soiling crop fed per cow daily	Lbs.	64.5	62.6
Average milk produced per cow daily	Lbs.	39.39	38.106
Average butter fat produced per cow daily	Lbs.	1.406	1.375

One cow in Lot 2 went off feed, thus making a slight difference in the amount of grain and soiling crop consumed and no doubt affecting the production of milk and butter fat. The data presented in the above table shows enough increase in production and decrease in loss in live weight in favor of sunflowers to offset the above mentioned difference in feed consumed. Under the conditions of this trial sunflowers when run through a cutter gave results equal to corn.

Since alfalfa hay is a common feed for dairy cattle, an experiment was conducted to determine the feeding value of sunflower silage in comparison with alfalfa hay. The value of sunflower silage was determined by comparing a ration composed of all the alfalfa hay the cows would consume and a mixture of concentrates with a ration consisting of a limited amount of alfalfa hay, all the sunflower silage the cows would consume and concentrates. The concentrates used in both rations were a mixture of 4 parts of rolled oats, 4 parts dried beet pulp and 2 parts cotton seed meal. In order to feed the two rations under similar conditions sixteen milk cows were divided into two equal lots, size, type, stages of lactation and gestation and the amount of richness of the milk produced were considered in making the division. For a 33 day period Lot 1 was fed on the alfalfa hay and concentrates ration while Lot 2 was fed on the alfalfa hay, sunflower silage and concentrates ration. At the close of this period the two lots of cows were interchanged so as to have all the cows consume both rations and to eliminate any difference due to the individuality of the cows. Seven days were taken in making the change in order to accustom the cows to the change of feed. The second period of the test continued for 35 days. The following table gives a summary of the results:

		Lot 1.*	Lot 2.**
Number of cows fed ration		16	16
Average number of days fed		34	34
Average initial weight of cows	Lbs.	1174.2	1196.8
Average final weight of cows	Lbs.	1188.0	1205.1
Average gain in weight	Lbs.	13.8	8.3
Average grain fed per cow daily	Lbs.	10.53	10.46
Average alfalfa hay fed per cow daily	Lbs.	26.65	10.93
Average sunflower silage fed per cow daily	Lbs.		41.26
Average daily production of milk per cow	Lbs.	29.01	28.17
Average daily production of butter fat per cow	Lbs.	1.13	1.12

*Lot 1 fed on alfalfa hay and concentrates.

**Lot 2 fed on alfalfa hay, sunflower silage and concentrates.

The above table shows that the cows fed the alfalfa hay concentrates rations received slightly more grain than the cows fed the alfalfa hay, silage and concentrates ration. The 26.65 pounds of alfalfa hay fed in the former ration was fed in comparison with 10.93 pounds of alfalfa nay and 41.26 pounds of sunflower silage in the latter ration; 15.26 pounds of hay being replaced by 41.26 pounds of the silage; a ratio of 1 pound of hay to 2.62 pounds of silage. Under the conditions of this experiment 2.62 pounds of silage were not quite equal to 1 pound of alfalfa hay, as the results show that cows fed the alfalfa hay concentrates ration gained 5.3 pounds more in live weight and produced .84 pounds more milk per cow daily, although the production of butterfat was approximately the same. After making allowance for the difference in gains in live weight and in the production of milk and butter fat, it was found that 2.83 pounds of sunflower silage were equal in feeding value to 1 pound of good alfalfa hay.

In an experiment conducted last year, comparing sunflower silage with choice alsike clover hay, 3.77 pounds of the silage gave slightly better results than 1 pound of hay. In comparing the results of the two silage trials, it was observed that less sunflower silage was required to equal a pound of alfalfa hay than was required to equal a pound of alsike clover hay. This difference can perhaps be attributed to the superior quality of the alsike clover hay and to the fact that the sunflower silage used in the sunflower alfalfa test was made from more mature plants.

Based on the comparative feeding values, the following table gives the relative values per ton and per acre of alfalfa hay and sunflower silage. The yields are calculated on the basis of 3½ tons alfalfa hay and 20 tons sunflower silage per acre. These yields are considered comparable on irrigated land:

Values Per Ton.

When alfalfa hay is worth $12.00 per ton sunflower silage is worth $4.24
When alfalfa hay is worth $15.00 per ton sunflower silage is worth $5.30
When alfalfa hay is worth $18.00 per ton sunflower silage is worth $6.30

Values Per Acre.

When an acre of alfalfa is worth $42.00 an acre of sunflowers is worth $ 84.80
When an acre of alfalfa is worth $52.50 an acre of sunflowers is worth $106.00
When an acre of alfalfa is worth $63.00 an acre of sunflower is worth $127.50

Up to this time no experiments have been conducted to determine the value of sunflower silage for other classes of cattle. However, the college herd of pure bred beef breeding cows and the younger animals of various ages have been fed largely upon the silage with splendid results. Young calves fed on skim milk relish the silage and as far as general observations are concerned the feed is well suited for them. When fed to sheep, sunflower silage is readily consumed, and it seems that the feed will be valuable for this purpose.

From the results obtained for the past three years sunflower silage has proved to be an economical and satisfactory feed for dairy cows. As a feed for other classes of livestock it has great possibilities. In the Gallatin valley sunflowers yield fully two times as much feed per acre as will alfalfa. Curing the sunflowers into the form of silage is the only way the crop has been preserved. Farmers contemplating growing sunflowers for silage should consider first that sunflower silage is in the experiment stage; second, the adaptability of their farms for the production of sunflowers; third, how this crop will fit into their general scheme of farming; fourth, the initial cost of a silo and the necessary machinery; fifth, the necessary help needed at filling time. The cost of filling silos is often reduced to the minimum when farmers club together and by the necessary machinery and by assisting one another at that time. Farmers having the facilities for making sunflower silage will do well in trying this new forage plant in a limited way.

PRACTICE PERSUASION

By Lieut. N. C. Johnson (Somewhere in France)

At Fort Sheridan they have a number of prisoners who were arrested for trying to escape the draft. Among the prisoners was a darky. After serving about five days he went to the officer in charge and said: "Boss, before dis yere war started I sho was a peaceful nigger, and dey done brung me here—'cause I didn't want to fight dem Germans. But aftah workin' on dis here garbage wagon fo' five days, I's ready to fight any man any place."
—The Salt Seller.

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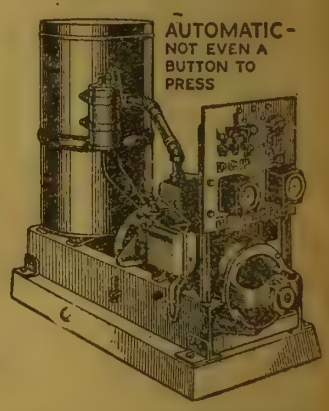

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Good for Years of Constant Service.

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PASTURES

(Continued from page 3)

e required. The dry hay had a tendency to overcome the extreme laxtive effect of lush pasture and durng the hot period of pasture season hen much of the grass had passed s most palatable and nutritious stage ould carry the cattle along without e heavy decline in milk now that is lt by the milk man who at such seaons depends on pasture along.

The following pasture mixtures are ecommended by the Utah Experiment tation:

or Bench Lands Under Irrigation:

Kentucky Blue-grass 12 pounds, **Bromus Inermis 8 pounds, Perennial** ye-grass 6 pounds, Orchard Grass 3 ounds, White Clover 2 pounds, Red lover 2 pounds, Alfalfa 2 pounds.—otal 35 pounds.

For Light Sandy Soils Under Irrigation:

Kentucky Blue-grass 8 pounds, Meadow Fescue 12 pounds, Tall Meaow Oatgrass 5 pounds, Bromus nermus 8 pounds, White Clover 2 ounds.—Total 35 pounds.

For Low Moist Lands.

Perennial Rye-grass 8 pounds, Redop 10 pounds, Rhode Island Bent rass 4 pounds, Meadow Fescue 4 ounds, Timothy 2 pounds, Alsike lover 5 pounds, White Clover 2 ounds.—Total 35 pounds.

The following two mixtures are reommended by the Idaho Experiment tation:

or The Ordinary Loam Soils of Idaho Under Irrigation:

	pounds
Kentucky Bluegrass	8
Orchard Grass	5
Smooth Brome-grass	5
Meadow Fescue	4
Timothy	4
White Clover	2
	28

For Low, Poorly Drained Soils:

	pounds
Redtop	8
Timothy	8
Meadow Fescue	6
Alsike Clover	4
	26

LET NOTHING SPOIL

Heat, dirt, improper handling, flies, nsects, and rats or mice are the greatst food wasters.

Keep Perishable Food Cold.

Keep perishables cool, clean, and covered.

The moment meat, fish, milk, and eggs are allowed to get warm they begin to spoil.

Bacteria and germs multiply rapidly in slightly warm food, and quickly make it dangerous or unfit to eat.

Keep perishable foods in the coolest, cleanest place you can provide, preferably in a good refrigerator or ice house, but, at any rate, in covered vessels suspended in the well, or in the coolest clean place in your home or cellar.

Do not keep perishable foods in a hot kitchen or pantry or in a sunny place a moment longer than is necessary.

Dry cold is a better preservative than damp cold.

Keep Food Covered and Clean.

The dust particles in the air carry molds and germs.

Meat, fish, and milk are ideal breeding grounds for such germs. Keep your food covered so that these bacteria and germs will have as little chance as possible to get on your food.

House flies—better called "typhoid flies"—are among the dirtiest things that enter our homes. They fly from sewers, privies, and manure heaps, carrying filth on their feet, which they deposit on any food on which they light. Frequently germs of typhoid fever are carried by flies in the filth on their bodies, and in their excrement (fly specks.

Ordinary cleanliness demands that flies be kept out of our homes and away from our food.

Health protection makes it essential to banish flies. Keep all food covered, or at least screened from these carriers of deadly disease and filth. Destroy flies by every possible means.

Guard Food Against Vermin

Rats and mice destroy millions of dollars' worth of food and other property every year in homes, or farms and in business establishments. Many rats harbor the germs of bubonic plague. Trap and kill them. Look upon every mouse as an enemy to your property.

Eradicate roaches and house ants.

Keep weevils out of cereals.

Keep your food where such pests can not reach it.

Keep household pets away from food.

Store Vegetables and Fruits Properly.

Don't let fresh vegetables or fruits wilt or lose their flavor or begin to rot because they are handled carelessly. Keep perishable vegetables in cool, dry, well-aired, and for most vegetables, dark rather than light places.

Learn how to store potatoes, cabbages, root crops, fruits, and other foods so that they will keep properly for later use.

Don't think that any place in the cellar or pantry is good enough to store food.

Heat, dampness, poor ventilation, bruising or breaking will rapidly make many vegetables rot, ferment, or spoil. Warmth and light make vegetables sprout and this lowers their quality.

Can or Preserve Surplus Vegetables and Fruits.

When there is a surplus of fruits or vegetables that will spoil if kept, cook or stew them and keep them cold and covered for use in a day or two.

Can or preserve all surplus food from gardens for winter use. In a morning's work with ordinary home utensils, you can put up many cans of vegetables and fruit for winter use. If you have no garden, watch the markets. When any fruit or vegetable that can be canned becomes plentiful and cheap, buy a quantity and can it for home use next winter.

Be A Food Conservator.

Write today to the U. S. Department of Agriculture or to your State agricultural college for full information as to how to keep food in the household and how to can and preserve all surplus fruits and vegetables.

Demonstrate Thrift in Your Home.

Make Saving Rather Than Spending Your Social Standard.

APPLY THE WORK-OR-FIGHT POLICY TO FARM MACHINERY

It's a lazy binder that works only forty days in eleven years. The work-or-fight policy should be applied to farm machinery as well as to men. Though machines can not fight they can be put to work on many occasions instead of standing idle in the barn lot. Most farm machines and implements are capable of doing much more work than they usually do, and the more they are used the less man-labor will be required on the farm. Three men with a corn binder, one operating the machine and two gathering and shocking the bundles, will cut from seven to ten acres a day, while four or five acres would be a fair day's work for the same three men cutting corn by hand.

The average corn binder lasts about 11 years, but during that time does only about 40 days' actual work. There is no doubt that it could render several times this much service before wearing out if there were more work to do. These points are brought out in a bulletin soon to be published by the United States Department of Agriculture on the use of machinery in cutting corn. There seems to be very little relation, between the amount of work done annually by a corn binder and the years of service.

The bulletin refers to a survey conducted in New York State which showed that the more the corn binder could be used each year the less the cost of cutting the corn when the cost of using the binder was taken into consideration. Two hundred and thirty-three of the 458 binders on which data were obtained, cut 15 acres or less annually at a cost of $9.78 per day used and $1.57 per acre. The remaining 225 cut over 15 acres annually, averaging 32½ acres, at a cost of $3.24 per day of service and 57 cents per acre. The original cost of one of these binders was about $125. Thus if there is only one or two days' work for the binder to do each year, the cost of cutting the corn with it will be so great that its use will not be advisable unless it is impossible to cut the corn by other methods without seriously neglecting other work. If this is the case, the bulletin recommends that two or three neighbors, each of whom has only a small crop, combine in the purchase of operation of a corn binder. The first investment required of each and the machinery cost per acre will then be greatly reduced. This plan should not only apply to corn binders, but to other labor-saving machinery.

TRACTORS INCREASE MAN POWER

Machine adds to owner's income by increasing his ability to till more land, but it does not reduce operating cost materially. The advantage of the tractor, like that of most other improved farm machinery, lies not so much in the reduction of the cost of performing a unit of work as in the fact that it permits one man to do considerably more work in a given time, according to Farmer's Bulletin 963 of the United States Department of Agriculture, which is a report of the experiences of over 600 farm-tractor owners on representative corn-belt farms in Illinois collected during 1917 and the spring of 1918. This has been true of practically all improved farm machines. Even the grain binder, generally considered as one of the greatest agricultural inventions of the century, which has increased about eight-fold the acreage one man could handle, has not resulted in decreasing materially the cost of producing grain.

Men who hope to reduce greatly the cost of farming operations by the purchase of a tractor should bear these facts in mind. Judging by the experience of tractor users, it is not safe to expect any material reduction in the cost of farm operations per acre through the use of the tractor, but it is safe to expect to be able to increase the crop acreage to a very considerable extent, and, at the same time, the amount of crops which one man can raise.

Furthermore, it should be remembered that the cost of doing the work with a tractor in most cases can not be directly compared with the cost of doing it with horses, since on farms where tractors are used a number of horses generally are retained, and any comparison, therefore, must be made between the cost of operating the farm with horses alone and the cost of operating with the tractor and a certain number of horses. Not infrequently horses stand idle while the tractor is being used for field work, because there is not sufficient help available to use them at the same time, and in such cases part of the cost of their maintenance must be considered when figuring the cost of farm operations, since they are as much a part of the farm power plant as is the tractor.

Not only should the relative expense of operation with the two methods be considered, but also the relative results. The increased crop acreage and consequent increase in incomes which the purchase of the tractor will often make possible may much more than offset a slight increase in the operating expenses of the farm.

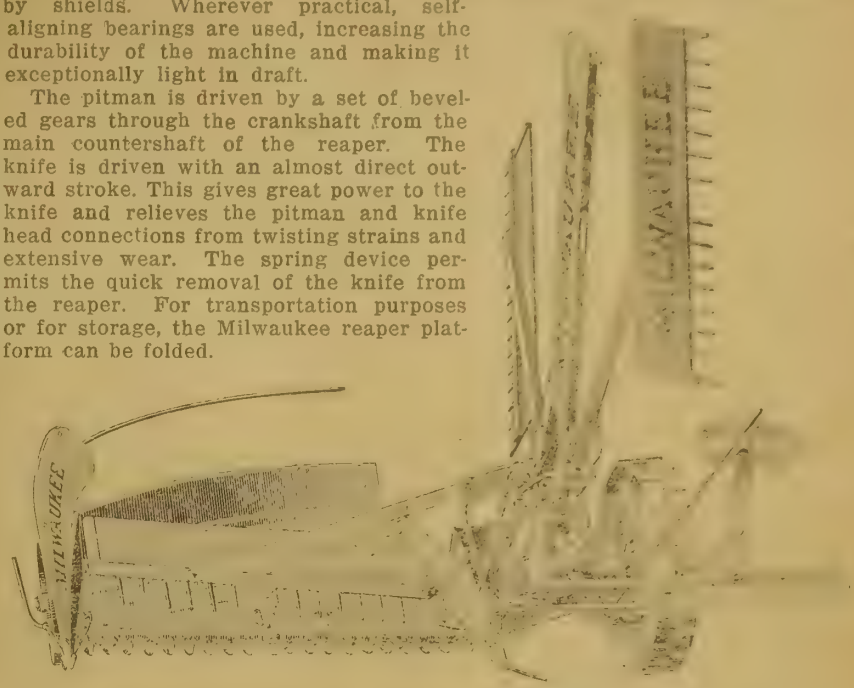
Buy a Milwaukee Reaper to Cut Your Alfalfa Seed

The reaper is operated by two horses, and is gear-driven machine. The rakes can be adjusted so that every rake will sweep the platform, or every second, third, fourth, fifth, or sixth rake. This adjustment permits of one or as many rakes as desired to sweep the platform while the others will act as a reel, forcing the grain onto the platform. The action of the rakes can be controlled absolutely by the operator so that delivery or gravels can be stopped until after the turn at the corner has been made.

A convenient lever controls the tilt of the machine. This permits of a close or long stubble being cut. Efficient raising and lowering devices are provided which, together with the tilt of the machine, make the Milwaukee an exceptionally efficient reaper for cutting down grain or making a short stubble.

The gears on the Milwaukee are grouped closely and completely protected by shields. Wherever practical, self-aligning bearings are used, increasing the durability of the machine and making it exceptionally light in draft.

The pitman is driven by a set of beveled gears through the crankshaft from the main countershaft of the reaper. The knife is driven with an almost direct outward stroke. This gives great power to the knife and relieves the pitman and knife head connections from twisting strains and extensive wear. The spring device permits the quick removal of the knife from the reaper. For transportation purposes or for storage, the Milwaukee reaper platform can be folded.



Miller-Cahoon Company

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MURRAY, UTAH General Agents IDAHO FALLS, IDAHO

LIVE STOCK

ACCURATE LIVE STOCK FIGURES NEEDED

E. J. Iddings.

There is today in the minds of a great many live stock men considerable question as to the exact status of the industry. The only data that we have that seems at all reliable is that contained in the statistical reports of the United States department of agrilulture. Those reports indicate a favorable standing of the industry so far as the number of livestock is concerned, and many of our more experienced livestock men have little or no confidence in the correctness of this point of view.

No phase of agriculture demands such forward-looking plans as does livestock production. Numbers of animals fluctuate from time to time, but on the whole there is stability, and in normal times approximately the same world toals are found from year to year. Should by any mishap any considerable portion of the world's livestock be destroyed, years would be required, particularly with the larger animals, to restore the desired balance between supply and demand.

Should the entire wheat of the world be destroyed, except a reasonable seed stock, a single favorable year could be made to restore the normal condition. The same is true with the other cereals, with many of the forage products, and in fact with nearly all the crops of the farm. Fruit growing is ordinarily considered a business requiring many years of preparation. Nevertheless, trees of many varieties may be planted and grow to such size that they bear fruit in no longer a period than is required to grow a brood mare from foal to maturity, and secure from her a husky young work animal. Hence the assertion of need of foresight in providing for the future livestock needs of mankind.

Unfortunately, disaster has come to the livestock of many lands. Invading armies have ruthlessly destroyed farm animals of all kinds. The abnormal war demands for meat, for motive power and for other animal products has made deep inroad into the supplies of many countries, and in some nations lack of fodder for feeding live stock has necessitated the slaughter of large numbers of animals that might otherwise have remained to form a part of the world's supply today. This destruction and abnormal usage has resulted in a loss of livestock, variously estimated at from 100,000,000 to 140,000,000 head.

During the war period we in America are interetsed in but one phase of livestock supply, viz., in supplying our own needs and the requirements of our allies. We naturally figure as sources of supply such great livestock producing lands as America, Canada, Australia, New Zealand, the Argentine, and South Africa. The shipping situation is such, however, that if America's man power and food supplies are to be a deciding factor in the world war, ships of all kinds and sizes must be concentrated on the Atlantic, to form a veritable bridge between America and France. Hence, ships in the greatest possible numbers will carry supplies of all kinds, including livestock, to England and France, and will ply only from North American ports. The livestock burden of the war, therefore, is unquestionably on the United States and Canada.

Many careful-thinking and experienced livestock men have for more than a year been regarding the American livestock situation with deep concern, and have urged measures both for conserving supplies and for looking forward to increased production to meet the demands of the future. Many of these men have expressed a well-defined lack of confidence in the estimatic livestock reports of the United States department of agriculture. These reports for January 1, 1918, indicated an increase in America of all kinds of livestock as compared with the year before. The writer confesses to having a lack of confidence in the federal estimates for reasons that appear later.

This is a matter of the very greatest importance. If federal reports are too optimistic, it means a false feeling of confidence in the adequacy of supplies, and tends toward encouraging a relaxation of effort, rather than an impetus for stimulation of production. This matter of livestock supply, therefore, is, in the judgment of many, the real outstanding livestock problem of the day.

The federal reports mentioned above indicated an increase during 1917 of 1,857,000 head of beef cattle. At the same time, the accurate tabulations of 52 of the leading markets of America show an increased slaughter, as compared with the previous year, of 3,700,000 head. These figures lead one to believe, therefore, that there has been an increase in beef cattle alone of more than 5,000,000 head in a single year, a condition that on the face of it does not seem probable. Furthermore, it must be remembered that this supposed increase took place in a year not regarded as a favorable one for beef cattle production. Twelve western states, having over 7,000,000 head of cattle, experienced one of the severest winters in the memory of the western people. This meant that female stock came out on to spring pastures in low condition, and the calf crop was unquestionably quite a bit below normal. In addition, four states of the southwest, having over 8,000,000 head of cattle, suffered an extremely severe drouth, resulting in unfavorable conditions for production. The 16 states mentioned contained approximately 36 per cent of all the beef cattle in America. With conditions highly unfovorable in more than one-third of the beef producing area, a decided increase is hardly probable or possible. The homesteading of large areas of land during the last five years, and the increased development of lands through the dry farming system, has resulted in a great shift in the western flocks of sheep, and in many sections the tendency has been distinctly toward reduction. Furthermore, there does not seem to be any marked evidence of increased popularity of sheep, at least prior to this year, in the corn belt and far eastern states. In spite of these facts, however, and in spite of the same severe winter conditions and dry summer, which affected both beef cattle and sheep, the federal figures show an increase during 1917 of 1,284,000 head of sheep.

The cost of feeds and of other supplies for the dairyman made milk production unprofitable in many sections of America, and resulted in the reduction of herds. The federal figures, however, indicate an actual increase in dairy cattle in America of 390,000 head.

There is also found in the same statistical reports as quoted above an increased showing for both horses and mules. This is possible, but not highly probable, in view of the great drain that the European demand has made on the supplies of horse stock of America.

It is in relation to swine where one is most disposed to doubt the accuracy of the Washington statisticians. Feed prices have been extremely high, and unquestionably there has been an American-wide tendency among certain classes of farmers to sell wheat and other grains for cash and to dispose of swine. The federal reports show, however, a gain in swine during 1917, of 3,871,000 head, and indicate since 1914 a gain in American supplies of swine of 11,441,000 head, or approximately 20 per cent.

One can analyze these figures in a more satisfactory way by reverting to certain districts where we feel reasonably sure of conditions. In the state of Washington there is credited in 1915 a total of 327,000 head of swine, and in 1918 283,000 head. In other words, a reduction in the three years of only 14 per cent. One can feel reasonably safe in saying, if he has had any experience in meeting with the livestock men in Washington, and in traveling over that state, that a 14 per cent loss of swine in three years does not adequately represent the situation. In the state of Idaho we are credited with 215,000 head of swine in January, 1918, as compared with 528,000 in 1915, or a decrease of 34 per cent. In some sections of Idaho we have accurate figures. In one well-known irrigated district there was only one hog in January as compared with three on the same date in 1917. In another district there were on the same respective dates 42, as compared with 100, and only 23 as compared with 100 in January, 1916. In another section of Idaho professional buyers of swine and other experienced and conservative men estimated during the winter that there was no more than one single hogs as compared with 10 only three or four years ago. There can be little question that either the figures for swine are entirely too optimistic for the state of Idaho or the census of three to five years ago did not represent anything like the real number of swine in the state.

We do not need, however, to rely entirely on western figures. The same federal sources of information credit Iowa in January of this year with 10,307,000 head of swine, as compared with 9,370,000 in 1917, and 8,720,000 in 1915. Wallace's Farmer is authority for a compilation, one-third of the counties had already reported, and on the basis of these reports Iowa had in January of this year only a little more than 6,000,000 head of swine, or approximately three-fifths of the number estimated by the United States department of agriculture.

On account of the lack of sources of information, it is impossible to present the livestock situation in a comprehensive way, using figures that we feel certain are reasonably accurate. The above general discussion of the situation and figures from such sources as seem reliable seem to indicate that one of the crying needs of today is a really accurate and reliable means of securing livestock statistics. Few will agree that the present system is adequate. Items pointed out seem to indicate that the latest reports are entirely too hopeful. If the livestock industry is to be organized to meet the real needs of both the war and after the war period, we want first of all to know the truth, and then to act promptly in the light of this knowledge.

HOW TO ADJUST PLOWS

Depth of furrow is regulated by raising or lowering the clevis. Where wide and frequent variation in soil conditions prevail it may also be regulated slightly by the gauge wheel. This method should not be used, however, where the soil conditions are uniform, except in very stony soil, as it increases the draft of the plow. In any case, there should not be an excessive bearing pressure on the gauge wheel, its function being to prevent plowing at a greater than the desired depth when passing from a firm and hard soil to one friable nature.

Width of furrow is regulated by shifting the hitch on the clevis to or from land according to whether a greater or less width of furrow slice is desired. In using more than two horses this also may be regulated to some extent by the gauge wheel, which may be adjusted to lead the wheel to or from land.

If the beginner has had experience in poultry keeping, it will be all right to purchase eggs and start with setting them. Otherwise he should begin with the fowls and thus gain some knowledge of caring for poultry before attempting to raise chickens.

Big-Scale Harvesting

ONE of our customers, who realized that his opportunity had come for cutting out a lot of the old delays, worries, and high costs of his yearly harvesting, invested in a **Deering Harvester-Thresher.** This letter of his describes the good average experience:

American Falls, Idaho, Aug. 23.

"The Deering Harvester-Thresher, purchased from the International Harvester Company, has proved very satisfactory, having cut about 150 acres, averaging about 15 acres per day, with but one man, cleaning and saving the grain better than any thresher I have operated. The machine is very economical, being the cheapest way of harvesting I know; the same is true of the cost of help. The saving in my thresher bill for this year will more than pay for the cost of the machine; in addition, a great saving of work in the house has been made, and in the feeding and help that is required for the old-time way of harvesting. Yours truly,

Martin Garn."

Do your harvesting and threshing in one operation, turning the old unnecessary threshing expense into clear profit, saving time, doing away with the risks of long-drawn-out harvest. Own a **Deering Harvester-Thresher** for this year's harvest. Let your threshing-bill saving pay for it. Write for folders.

International Harvester Company of America

(Incorporated)

Billings, Mont. Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah San Francisco, Cal. Spokane, Wash.

JELLIES FROM PECTIN

(Contnued from page 9)

elly glasses and skim When cold, pour hot paraffin over the jelly.

Apple Jelly.

1 pound fruit.
2 pounds water.

Boil together for ½ to ¾ hour and train.

One pint strained juice; determine amount of sugar to be added by the use of the alcohol test previously given; bring the juice to a boil, add the sugar, and cook as rapidly as possible until the jelly point is reached. Remove from the fire, skim, pour into hot sterilized glasses, and when cold cover with melted paraffin.

Grape Jelly.

4 pounds grapes.
1 pound water.

Crush and boil together for 20 minutes, press through a jelly bag, and allow to drain through a flannel bag. Test the strained juice with alcohol to determine the proportion of sugar to use. Bring the grape juice to boiling, add sugar, and stir until the sugar is dissolved. Continue the boiling until the jelly point is reached. Remove from the fire and skim. Pour into hot sterilized glasses, seal, and store.

Blackberry Jelly.

4 pounds blackberries.
1 pound water.

Select 3 pounds of ripe fruit and 1 pound of underripe fruit, wash by running water over them, crush, and add 1 pint of water and boil 15 minutes. Press the pulp and strain the juice through a flannel bag. Determine the correct amount of sugar to be added by the use of the alcohol test. Bring the juice to a boil, add sugar, and stir until the sugar is dissolved. Continue the boiling until the jelly point is reached. Remove from the fire and skim. Pour into hot sterilized glasses, seal, and store.

The instruction given in these recipes were prepared mainly with a view to preserving for home use. If products are packed for sale the State food commissioner should be consulted as to the State regulations regarding such products, and if they are packed for interstate shipment additional information concerning the requirements under Federal food and drugs act should be secured from the Bureau of Chemistry of this department.

FRUIT PASTES

Fruit Pulp Is Boiled Down, Flavored, and Dried—Useful for Desserts and Garnishings.

Fruit pastes, as they are called, consist of boiled-down fruit pulp, with sugar added according to the acidity of the fruit, and are improved in flavor if several varieties of fruit are mixed. After the fruit paste is made (see recipes), it can be colored red, yellow, or green with harmless vegetable colors. The coloring is stirred into the boiling mass after removing from the fire. Different flavors also can be added at this stage if desired. The paste is poured up in a half-inch layer on flat dishes, marble, or glass slabs, which are first rubbed with a cloth dipped in a good salad oil. The dishes are then exposed to draft for a couple of days, after which the paste is cut into figures. If the paste is well boiled down it is dried more easily. (Many small forms useful for cutting the paste can be had on the market.) The paste can also be cut with a common knife or with a fluted vegetable knife, or it can be cut into round cakes, the center of which is again cut with a smaller circular cutter; there will thus be both rings and small round cakes. The cut paste is placed on paper, sprinkled with crystallized sugar or common granulated sugar. Then it stands again a couple of days exposed to draft, is dipped in crystallized sugar, and packed in a tin or wooden box lined with parchment paper and with layers of the same paper placed between the layers of paste.

The paste can be kept thus and served as dessert, and as garnishing on creams and custards, frozen creams, large cakes, etc.

Apricot Paste.

One pound powdered sugar to 1 pound fruit pulp. Rub the fruit pulp through a puree strainer and weigh it. Add the sugar, put it over a slow fire, and cook until very thick, so that when a spoon has been passed through it the mass does not run together immediately. Then pour the paste upon flat dishes which have been rubbed with oil and allow it to dry. Cut and pack in layers as directed above.

In the same manner raspberry, strawberry, and currant pastes are made.

Quince Paste.

Three-fourths pound powdered sugar for each pound of fruit pulp. Wipe the fruit, cut into quarters, remove flower and core, and cook in water until very tender. After rubbing the pulp through a sieve, weigh it and add the required amount of sugar. It is then cooked until very thick. Scalded and chopped nut kernels may be added. The pulp remaining after the juice has been extracted for quince jelly may be used also.

Gooseberry Paste.

One pound powdered sugar for each pound of fruit pulp. Use part ripe and part slightly underripe berries. Cook as previously described. This paste may be colored before it is poured out. Different flavors also can be added to the gooseberry as well as chopped or sliced almonds or other nuts.

Apple Paste.

One-half pound powdered sugar to 1 pound pulp as rubbed through a sieve. For this product apples that are of lower grade than is required for some other purposes can be used. Cut the apples into quarters. Remove flower, stem, and core. Put fruit into cold water until it is ready to be cooked. Boil tender under cover and over a very low fire in order not to scorch. Rub the tender apples through a coarse sieve, weigh, and put into the kettle to be cooked with the sugar under constant stirring until it is rather firm. It can be varied in taste by the aid of different additions, as, for instance, vanilla, pepperimnt, or orange flavor, or cooked with either finely cut citron, finely cut lemon peel, or blanched and cut nut kernels. The paste is poured out dried, and kept as the others.

Other fruit pastes can be made of cherries, plums, and other fruits.

It is often advisable to make several different pastes. When nearly dry (before cutting) place different colored or different flavored layers on top of each other as in a layer cake. With a sharp knife cut in one-half inch strips through all layers and dry.

"FUEL VALUE" OF FOODS

C. E. Vail.

Things we eat have heatproducing power even as coal or other fuel. The term "fuel value" expresses the quantity of energy in the form of heat which a given substance can yield when it is completely burned. The unit of measurement employed is the calorie. This is, in common terms, the amount of heat necessary to raise the temperature of one pound of water four degrees Fahr. Since the constituents of food-stuffs fall into several common chemical groups, the method of calculating the amount of heat which a given food will yield is based on the results of chemical analysis of that food, together with the results obtained by actually burning known samples of the food constituents. For example, it is found that the classes of chemical substances known as proteins and carbohydrates yield 4.1 calories per gram (15.5 grains), while fats yield 9.3 calories per gram. If a sample of milk contains 2 per cent protein, 6 per cent carbohydrates, and 4 per cent fat, the total amount of heat which these solids could yield would be 70 calories. If the analysis of a foodstuff is not made, the number of colories it yields per gram can be determined directly by burning a weighed sample of oxygen, and noting the amount of heat imparted to a given volume of water. The apparatus for this purpose is known as a calorimeter.

Normal appetite indicates just about the proper kind and amount of food one should have. In the body the quantity of heat developed from a given food does not necessarily agree with the theoretical amount. Defective absorption of assimilation will reduce the actual amount of energy derived from a given form of food. However, the average active person in good health will utilize the bulk of the total available energy in a food. Dietary studies too frequently overlook the individual differences in ability to digest and assimilate foods. It is difficult to draw generalizations, as the average is so elusive and hard to define. Most of us eat what we like and what agree with us. Most of us also eat more than we need for the kind of life we are living. And many people decidedly over-eat to their great detriment. It is really much better to be rather hungry, than not. The psychology involved in a system of diet is rather complex, yet it should be properly allowed for. The necessity for dieting could be reduced in most cases, by plenty of exercise, to the mere natural craving for food that one likes and just satisfies one. Diseased person very often require a carefully planned diet. Many of these same persons have become diseased almost solely through over-eating, or from lack of exercise, or from lack of care of the teeth. When one is in good health, and has good teeth, and gives the whole body sufficient exercise, one's natural appetite is satisfied by just about the right amounts of the different kinds of foods one likes. And these amounts will be found to be surprisingly close to the amounts one would be allowed in the most scientifically constructed diet.

FLIES THAT COME IN THE SPRING ARE NEW ONES—SWAT 'EM EARLY

The house flies that you see in early spring are not the flies of the preceding autumn. They are the offspring, not the survivors of those that sought a warm refuge in the fall. The flies that appear in the spring quickly become reproductive and by early summer the baby fly of a few weeks past will have become a patriarch with millions of great-great-grandchildren. Therefore, swat early.

These facts are presented by a United States Department of Agriculture scientist. His findings, based on long experiments, support the popular belief that a "swat" in the spring saves a lot of them later on. A fly thoroughly swatted when he is young and comparatively innocent not only will be unable to carry disease but will not have very many children.

The investigator found that in the latitude of Washington, D. C., the house fly may overwinter by continued breeding in warm places where food and receptacles for its eggs are available, and in the early stages of fly life in or under large manure heaps. No evidence whatever was found to show that house flies can persist as adults from November to April, either outdoors or in protected or heated buildings. Temperatures of 12 degrees to 15 degrees F. are quickly fatal, and there is every reason to believe that any temperature below freezing will kill if continued long enough.

WHO?

Sister Sadie's now a bell-hop,
In a swell hotel,
Cousin Lucy drives a taxi,
So does Annabel.

Mother runs an elevator,
Aunt Jane busy guarding aliens,
Grandma's busy guarding aliens,
At the county jail.

When the cruel war is ended,
And the boys come back,
Wonder who will rock the cradle—
Jill or Jack? —Judge.

You are early of late. You used to be behind before. But now your are first at last.—Exchange.

In raising baby beeves it is essential to have a herd with a fair amount of beef blood.

POULTRY

POULTRY DISPLAYS AT AGRICULTURAL FAIRS IN WAR TIME

Prepared by the Animal Husbandry Division, United States Department of Agriculture.

There are three great general agencies for the development of the poultry industry. Named in the order of their origin and described in single terms they are: the show, the press, and the platform.

The first exclusive poultry show in America was held at Boston in 1849. Before it there were displays of poultry at agricultural fairs; after it the poultry departments became one of the big attractions at many fairs, and special poultry shows became numerous. For some twenty years then exhibitions of poultry were the principal factor in the development of interest in the improvement of poultry.

About 1870 the first poultry journals appeared, and about 1900 the organized educational movement began. As the beginnings of the modern poultry show are found in the occasional exhibits at the early fairs, the beginnings of poultry journalism are found in occasional articles in the agricultural papers, and the beginnings of educational poultry work in the occasional essays and addresses on poultry subject given before agricultural societies or published in their proceedings.

The statement of the relations of the three agencies in their development shows how closely they are coordinated in practice, and how necessary harmony of effort is to the highest efficiency in each and the greatest result from all. The order in which they developed has peculiar interest in any consideration of their functions at the present time, because circumstances have given the initiative in work for increased poultry production to educational forces.

It was not by chance that the shows came first; it was because they are fundamental. The beginning of the extension of interest in poultry in those who were not born with it comes when one who has improved poultry shows it to the public under conditions that challenge comparison with other poultry. Poultry journals were established both to give the news of such events, when reports of shows were demanded, and to disseminate knowledge of the ways and means of improving poultry.

It might have been possible to secure the remarkable development of educational agencies which has been made in America by some other means, but as a matter of fact institutions of this class are what they are because they fully availed themselves of every help the shows and the price could give them and on their own part sought to make contributions of special value to popular exhibitions and current discussions of poultry subjects.

War conditions do not change the nature of the relations of the agencies for the promotion of interest in poultry, but do disturb their operation, and tend to upset their natural equilibrium. One of the first effects in interference with the holding of exhibitions. Difficulties of transportation reduce the exhibits and the attendance at shows. Efforts of the managers to overcome such difficulties raise the question of the status of the poultry show in war time. It is essential?

If poultry production is to be increased or even generally maintained poultry shows must be continued, multiplied and improved. To discontinue them is to deprive the other agencies for reaching the public and attracting its attention of a considerable part of their efficiency. War conditions and the necessity for increased production to meet war-time demands can not wait on experimental re-adjustments of factors which have grown into certain relations. Improvement for greater efficiency must be along the lines of experience and within the limits it indicates as safe.

War conditions make it necessary to plan and conduct shows so that they will make less than the ordinary demands upon transportation facilities, and help and not handicap other war agencies. In considering the effects of war conditions upon American poultry shows, the fact that stands out most prominently is that the uncertainties of transportation tend to limit the aera from which a show can draw exhibits. When such a condition comes as a sudden emergency there is justification for asking preferential treatment for shipments of exhibits; but, when it is known long in advance that the obstruction to shipment will probably exist, patriotism should lead show managers to endeavor to fill their classes with near-by exhibits and exhibits and exhibitors to patronize the near-by shows.

It is not necessary here to refer in detail to the reasons which under normal conditions attract particular classes of exhibits to certain shows. This movement is now restricted by difficulties of prompt shipment and, that being the case, all concerned can serve their own interest and the common good by accepting the situation and adjusting their plans to it.

In all propaganda for increased poultry production in war-time the policy has been to make use of existing means of reaching people, to co-operate with some established agency in such a manner that it will be permanently strengthened and made more efficient. This policy indicates the agricultural fairs, and especially the local fairs, as the best field for immediate action in this direction, because the agricultural fair either has a live poultry department which can expand to meet the emergency or has a comatose one which ought to be infused with new life. Appreciation of the opportunity afforded at the agricultural fairs does not overlook the advantages of winter shows in their special field, on the contrary it looks toward an increase of small winter shows as a direct result of making the poultry departments of small fairs more attractime and instructive.

The development of a good poultry show, whether at a fair or independently, has always been the result of the interest and efforts of a few poultrymen. Where shows are being held under efficient management those in charge should have the hearty support of all poultrymen in the vicinity. Where the field is clear local poultrymen should confer with the fair management and endeavor to secure its co-operation in a special effort to make the display of poultry one that will stimulate interest in the community.

The attitude of the poultrymen making such a proposal usually determines the attitude of the management of a fair toward it. If the poultrymen are enthusiastic and ready to do the work necessary to make the display of poultry a notable one, the fair management are usually prompt to respond and willing to give the poultry department its share of space, publicity and prizes. But the mere suggestion that the fair should have a better poultry, department, with the implication that it is up to the general management to see that this feature is put on a par with others, has very little force with men who, as a rule, are giving free service in the general management and relying upon those with like public spirit to help in details of departments in which they are especially interested.

The first rule for making a successful poultry exhibition whether in a big city or in a sparsely populated county—is to interest as many people as possible in it. Activity on this line should be the first step and should begin even before the management of the fair is approached. They can respond more promptly and more liberally when informed that so many poultry keepers would, with suitable inducements, enter so many birds, than when asked to authorize offers of inducements as the preliminary to a canvas for exhibits. At any time, and especially now when many things not ordinarily done are done from patriotic motives—a movement of this kind draws its first and best support from those who enter it early with more consideration for the public good than for any personal advantage it may bring to them.

Everyone who has poultry that he thinks is a little better than his neighbor's should be urged to show it at the fair. With standard poultry as generally distributed as it is now there is probably no place where a fair is held that can not supply from some farm or poultry yard fairly typical specimens of the popular varieties of poultry. Everyone who has such stock should be urged to send something to the fair as a contribution to the movement to create more interest in poultry. As a rule stock of no standard breed has not distinctive character which would give it interest in an exhibition, but accasionally a person has non-standard poultry which in appearance or performance is better than ordinary, and such exhibits may well be solicited. This is not only the appropriate way to recognize the person who has done something well—if not on usual lines—but it is from this class of exhibits that the new things in the poultry world come. Our greatest shows regularly make provision for such exhibits in their "any other variety" classes.

Besdes soliciting exhibits from those who already have good poultry, it is good policy to urge such of them as appreciate better quality than they have to purchase birds to show at the fair. Interest can also be helped if people of some prominence in the community who have not perhaps had any interest in poultry, can be induced to take it up and to import some good stock to show at the fair for their own credit and for the benefit of those who attended and who might not otherwise have the opportunity to see really good stock of that particular kind. These suggestions are not theoretical, but are simple statements of the means that for seventy-odd years have been successfully used by promoters of poultry exhibits in places where they had been neglected.

One of the most important things to observe in developing the poultry exhibit at fairs is to follow the standard method of classifying fowls for exhibition and for the award of prizes. The original method at fairs and at the early shows was to show birds in pairs, male and female, and award the prizes for pairs. The standard method is to show birds either singly or in pen of a male and four females. Innumerable experiences have demonstrated that providing separate classification for cock, hen, cockerel and pullet in each

(Continued on page 15)

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85 acres in the center of Bear River vallay, with a full water right from the Bear River canal; 30 acres planted to alfalfa; fenced with a woven wire fence; on the corner of the Lincoln highway and the county road; within a half mile of schools, churches; just under the Bear River canal. Price $125 per acre; one-fourth down and terms on the balance.

160 acres at $65 per acre; all plowed, and one of the nicest pieces of ground there is in Bear River valley; adjoining the canal, and in the center of the valley. This property can be had at $65 per acre. Water may be had at any time. The property has been under cultivation for a great number of years and is considered one of the best farms in the valley.

Immediately adjoining the town of Tremonton we have three 40-acre tracts that we can sell for $140, $135, and one for $125 per acre; a small payment down and ten years on the balance; a full water right from the Bear River canal; on the main county road; some planted to alfalfa; nice shade trees. In fact, it is one of the most beautiful farms in the valley. We will sell one or all three 40-acre tracts.

In Cache valley we have a number of first-class farms; one farm containing 70 acres, right near the depot and close to town. This property can be had for $125 per acre; small payment down and terms on the balance.

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200 acres irrigated, all fenced, good ranch house, stables, corrals, and cattle sheds, puts up 150 tons of hay, 50 acres of wheat and oats, team, and machinery. Located on creek near the mountains with an abundance of range. Price $10,000.

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The Hunter Land Company is placing on the market ten thousand acres of irrigated, alfalfa lands in Southern Oregon. Part of these lands are now improved and can be bought for $5.00 per acre cash down, balance in twenty annual payments with interest at 6 per cent. Call or write E. J. Grosebeck, Agent, Room 53 City and County Bldg., Salt Lake City, Utah.

Making Cheese On The Farm

W. H. Underwood.

No family on the farm where plenty of milk is produced need ever be without good cheese. It is easily made at home and is one of the best food products anyone can use. We have made cheese on our farm for many years and like our pressed cheese almost as well as the factory made article. I will tell how we make three varieties, namely, pressed cheese, cottage cheese and Dutch cheese. If the directions are carefully followed the resulting product should be very satisfatcory.

In making pressed or whole milk cheese we use a large, prefectly clean wash boiler. This is filled nearly half full with milk drawn from the cows in the evening, then set in a cool place until the next morning, when the same amount of morning's milk is added. The milk is then heated slowly to a temperature of 85 degrees Fahrenheit. The proper temperature is very important. We never guess at the temperature, but use a reliable thermometer. A good thermometer costs but a few cents and is useful in ripening cream and making butter as well as in making cheese.

When the milk is heated to 85 degrees it is removed from the stove and one rennet tablet about the size of a cent is added to each 12 gallons of milk. Before the tablet is added it is dissolved in half a glass of cold water, but never in milk. The milk is then stirred thoroughly and allowed to stand until curd forms, which it will do in about 20 minutes. When it is stiff enough to make a clear break when tried with a spoon or finger it is broken into small bits. Some say cut with a knife, but a clean hand does the work more quickly and thoroughly. When broken into small pieces we let it stand until the curd has all settled to the bottom of the vessel, then pour off part of the whey. The curd is then heated to 100 degrees Fahrenheit, being stirred well while heating.

When heated to 100 degrees the mass is removed from the stove, allowed to cool, the whey drained off, the cheese taken out, salted to taste, a half pound of fresh butter added to the curd obtained from each 12 gallons of milk and all worked until it is very fine. The curd is then allowed to stand until cold, otherwise the butter would press out with the whey. When it is cold we pour it into a cheese cloth in the press. We use a lard press, pressing lightly at first, then increasing the pressure. If you have no press take a small keg or heavy metal pail, make a number of holes in the side, have a strong lid that fits inside, put some blocks of wood on the lid, fasten securely one end of a long scantling to the wall, set the cheese on a box under the scantling about three feet from the wall and at the free end of the scantling hang a pail of stones to make the necessary pressure. If one has a cider press it will meet all requirements.

We let the cheese remain in the press for 24 hours. It is then taken out and turned over and pressed again for 12 hours, about 25 pounds of pressure being applied. It is then removed from the press, trimmed if there are any irregular edges, and greased thoroughly with fresh butter, care being taken to reach every part. A bandage is then put around the cheese and sewed in place. This bandage is merely to keep the cheese from flattening out. The bandage is rubbed with butter until it is saturated. This kind of cheese must always be cured in a warm dry place. During the curing process rub the cheese twice daily, morning and evening, turning it each time, and if the cloth becomes wet or damp it must be removed and a new one put on. The rubbing keeps the cheese from molding and the frequent turning also helps. The cheese can be eaten at the end of three weeks after it begins to ripen, but is much better at the end of six weeks.

Cottage Cheese.

Where one has a large amount of skimmilk a profitable way of disposing of it is to convert it into cottage cheese. The demand for the cheese is good in towns and cities. The process of making simply consists in separating the curd from the whey and preparing the curd for the table or the market. The first step is getting the milk properly coagulated. This can be done either by permitting the ordinary lactic germs to complete the work or it can be helped to great advantage by the use of rennet tablets. The skimmilk is brought to a temperature of 72 to 75 degrees and held there during coagulation. Unless it is already partly sour it is best to add a starter of buttermilk in order to hasten clabbering and in two hours add the rennet if it is used at all.

It will require from five to eight hours for the curd to harden enough to begin separating from the whey. At this stage the whey is removed or the curd scooped out and placed in cotton bags and when all the whey has drained out the curd is well worked with the hands and salt added at the rate of one ounce to every five pounds of curd. A little pepper can also be added to suit the taste if desired. Some people desire a little sweet or sour cream or soft butter mixed with the curd and when the cheese is placed on the market it will sell for more money thus prepared than it will without the addition of the cream or butter.

The cheese may be prepared for the market either in round balls or rolls or in square prints and cakes or convenient sizes and should always be wrapped in oiled or parchment paper. It may be delivered in most any kind of a clean package. Grocers will buy the cheese in quantities of several pounds at a time or it can be sold direct to the consumer. From 18 to 20 pounds of cheese can be obtained from 100 pounds of skimmilk. In the making of this by-product of the dairy practice makes perfect and there is little loss if a few batches are spoiled in trying the work.

Dutch Cheese.

Dutch cheese is easily and quickly made and is a fair substitute for whole milk cheese. To two gallons of well-clabbered skimmilk add one quart of sweet whole milk and heat and treat as in making the skimmilk or cottage cheese above mentioned. When the curd has formed strain through a cheese cloth bag, squeeze dry, salt lightly, add a lump of butter the size of a hen egg, also add one egg and mix thoroughly. Then put in a pan and heat until the cheese is melted into a tough smooth mass, stirring continually while heating. Put in a dish or crock, press into shape and set it aside for a day or two. This is fine sliced as whole milk or pressed cheese, also excellent with bread and butter for a lunch.

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POULTRY DISPLAYS AT AGRICULTURAL FAIRS IN WAR TIME

(Continued from page 14)

variety gives the widest recognition and fairest distribution of prizes to meritorious individual birds, while the classification for pens of five birds with appropriate prizes in the class gives the breeder who can make a fine exhibit in it the special reward he deserves. It is a matter of poultry show history that the adoption of the standard classification almost invariably starts the poultry department at a fair on a course of enlargement and progress. Another essential thing in making a poultry department interesting and instructive is the employment of a qualified judge. Nothing is so discouraging to the notice in exhibiting poultry as the decisions and explanations of the judge who is supposed to be good enough for a country fair though he would not be considered for a minute as judge at a show where substantial interests were involved in the decisions or where experienced exhibitors were showing. The judge at a large show making decisions on very close comparisons of birds of very even quality may be exempt from explaining his awards in detail, but the judge at a small show has only half done his work when he has made his decisions—the other half is to tell exhibitors why certain birds are better than others and where the best on exhibition there might be improved. A judge who does this well can easily double the influence of a first poultry show for good in the community.

With the poultry always the main feature of a poultry department such accessory features as can be secured should be provided. Exhibits of appliances and supplies always interest the general public and those little versed in methods of poultry culture. Many things familiar to the experienced poultry keeper, that he would not stop to look at them in a show, and hence supposes they can add nothing to its attractiveness, are of special interest to novices.

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* * * *

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* * * *

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* * * *

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* * * *

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